Trinity Consultants
9400 Holly Ave NE, Bldg 3, Ste B, Albuquerque, NM 87122 / P 505.266.6611 / **trinityconsultants.com**

October 23, 2025

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

RE: Incomplete Air Quality Permit Application #10342M2 for The Dude Processing Plant

Dear Cember Hardison:

On behalf of Lea Midstream, LLC, we are submitting an update to this application for an initial NSR Permit for The Dude Processing Plant. This facility is located 12.3 miles northwest of Monument, New Mexico in Lea County and sweetens and dehydrates sour gas. The Dude Processing Plant is currently authorized to operate under GCP-O&G Permit No. 10342M1.

Within this application, the following requests from the agency have been completed and provided:

1. **Request:** Section 9: Please re-issue the public notice and notification letters using the current public notice template from the AQB website that was revised May, 2025. The notice used for this application has the wrong contact number for Spanish language citizens. You do not need to resubmit the PSA request.
   Also, the proposed input capacity of the facility is more than doubled. This is relevant information concerning the modification so please include that information in the revised public notice.
   The Public Notice Guidance with Templates is located on this webpage:
   https://www.env.nm.gov/air-quality/universal-application-2-2/

   Response: Public Notice has been reissued, and the application has been updated.

2. **Request:** Please list in Table 2-A each compressor, including the type of compressor, make, model, serial number, and construction dates. If emissions will be collected and controlled form the compressors per 20.2.50.114.B(4)(b) and (5) NMAC, include that information in table 2-C, the calculations, and the process description.

   Response: The compressors have been listed in Table 2-A.

3. **Request:** Please update and resubmit Table 2-A with the make, model, serial number, manufacturer date, and construction date of any engines, reboilers, heaters, dehydrator, amine unit, tanks, flares, or combustors that have been installed at the facility.

   Response: Table 2-A has been updated.

4. **Request:** Add to Table 2-A the construction dates for LOAD and FUG-1.
   Response: The construction dates for LOAD and FUG-1 have been added to Table 2-A.

5. **Request:** Please add the acid gas injection (AGI) well control to Table 2-C and provide the following information: the completion date, start of operation, the location, the number of redundant compressors, method used to power the system, and distance from the facility.

Response: AGI-1 has been added to table 2-C. The well has not been completed and has therefore not started operation. Three (3) electric acid gas compressors have been added to Table 2-A – two (2) of the compressors will be in service during normal operation and the third compressor is redundant. There are four (4) generator engines (ENG-16 to ENG-19) that will provide power to the AGI well. A Plot Plan Map of Train 1, which includes the AGI well pad, has been included with Section 5 of the application.

6. **Request:** Please explain how Lea Midstream will avoid exceeding the ton per year limits in Table 2-F for the HP Flare, LP Flare, and Flare-2 based on the requested pph and tpy limits. The Department calculated the number of hours that the LP Flare could operate at the requested pph limit before exceeding the tpy limit, and Lea Midstream would exceed the NOx and CO tpy limits in 0.0000928th of an hour.

   Response: The calculations have been corrected. Please see below for explanation:

   The cause of error in the LP-FLARE calculations was identified to be Total SSM Annual Heat Rate (MMBtu/yr) being divided by 10^6 where it should not have been. This calculation error has been corrected and did not affect hourly emission rate.
   NOx total (process + SSM) increased from 1.48 tpy to 2.31 tpy
   CO total (process + SSM) increased from 6.74 tpy to 10.51 tpy

   LP FLARE- flare flow rate:
   1. TEG Flash Gas - calculated by ProMax (process emissions not included in this SSM examination).
   2. Compressor Blowdowns = only ENG-22 blowdowns are controlled by flare.
      a. G3615 LE (inlet) - [2680 scf/event] x [1 hr/event] x [1 unit] x [24 events/yr per unit] = 64,325 scf/yr = 0.0643 MMSCF/yr.
   3. PSVs - [1,302,083 scf/event] x [1 event/hr] x [1 event/yr] = 1,302,083 scf/yr = 1.302 MMSCF/yr.
   4. Pigging -[1,000,000 scf/event] x [1 event/hr] x [20 hr/yr] = 20,000,000 scf/yr = 20 MMSCF/yr.

   Total annual SSM flow rate for LP Flare = 20.37 MMSCF/yr as represented in the calcs.

   In checking how many hours per yr LP-FLARE could operate at its maximum hourly emission rate:
   NOx- [0.83 tpy for SSM] x [2000 lb/ton] / [178.25 lb/hr] = 9.27 hr for SSM
   CO- [3.77 tpy for SSM] x [2000 lb/ton] / [812.60 lb/hr] = 9.27 hr for SSM

7. **Request:** Provide a list of well identification numbers that are currently routed to and/or will be routed to the facility for treatment. This information is needed to verify that the requested limits in the permit will be sufficient.

   Response: Per the in-person agency meeting on October 6, 2025, this item is no longer needed.

8. **Request:** Provide a copy of the plan required pursuant to 20.2.7.14.A NMAC.

   Response: Per the in-person agency meeting on October 6, 2025, this item is no longer needed.

9. **Request:** The application does not request limits for flaring the inlet gas or residue gas. Please confirm that no inlet gas or residue gas will be flared for any reason and that no limits are needed for combusting the inlet or residue gas streams.
   Response: For Residue Gas, flaring of NRU Membrane Waste Gas has been added to HP-FLARE. when there is an insufficient volume of gas routed to the Nitrogen Rejection Unit (NRU) at Cryo Trains. Only waste gas coming off the NRU membrane is flared. This flaring is represented as malfunction flaring (FLARE-M) and has been updated in Table 2-F and the supporting documents. Malfunction flaring does not occur at the same time as other flaring emissions at HP-FLARE and therefore does not increase the hourly emission rate at HP-FLARE.

   In addition, malfunction flaring (FLARE-M) is now further described in Section 15.

10. **Request:** Identify which limits in Tables 2-E and/or 2-F apply during alternative operating scenarios AOS-1 and AOS-2 identified in Section 10. Report two separate limits for AOS-1 and AOS-2 in Tables 2-E and/or 2-F if the limits are currently combined under one limit in those tables.
    Response: Table 2-F has been updated to represent AOS-1 and AOS-2. Additional AOS scenarios for malfunction flaring (FLARE-M) were added as AOS-3 and AOS-4. The new scenarios are further described in Section 15.

Please feel free to contact me at (505) 266-6611 or by email at aerenstein@trinityconsultants.com if you have any questions regarding this application. Alternatively, you may contact James Hegar with Lea Midstream, LLC at (214) 238-5760 or by email at jhegar@producersmidstream.com.

Sincerely,

TRINITY CONSULTANTS

Adam Erenstein
Manager of Consulting Services

cc: James Hegar (Lea Midstream, LLC)

Trinity Project File 0253201.0043

NMED AIR QUALITY
INITIAL NSR APPLICATION

LEA MIDSTREAM, LLC
THE DUDE PROCESSING PLANT

Prepared By:

Adam Erenstein – Manager of Consulting Services

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

On behalf of:

James Hegar – Senior Director of Operations

Lea Midstream, LLC
3500 Maple Ave, Suite 700,
Dallas, Texas 75219
(214) 238-5760

August 2025

Project 0253201.0043

Trinity Consultants

Trinity Consultants
9400 Holly Ave NE, Bldg 3, Ste B, Albuquerque, NM 87122 / P 505.266.6611 / **trinityconsultants.com**

August 22, 2025

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

RE: Application for Initial NSR Permit
Lea Midstream, LLC — The Dude Processing Plant

Dear Permit Programs Manager:

On behalf of Lea Midstream, LLC, we are submitting this application for an initial NSR Permit for The Dude Processing Plant. This facility is located 12.3 miles northwest of Monument, New Mexico in Lea County and sweetens and dehydrates sour gas. The Dude Processing Plant is currently authorized to operate under GCP-O&G Permit No. 10342M1.

The format and content of this application are consistent with the Bureau's current policy regarding NSR applications; it is a complete application package using the most current application forms. Enclosed is one hard copy and one working copy of the application, including the original certification page, electronic files, and an application check.

Please feel free to contact me at (505) 266-6611 or by email at aerenstein@trinityconsultants.com if you have any questions regarding this application. Alternatively, you may contact James Hegar with Lea Midstream, LLC at (214) 238-5760 or by email at jhegar@producersmidstream.com.

Sincerely,

TRINITY CONSULTANTS

Adam Erenstein
Manager of Consulting Services

cc: James Hegar (Lea Midstream, LLC)

Trinity Project File 0253201.0043

Air Permit Application
Compliance History Disclosure Form

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

Permittee/Applicant Company Name		**Expected Application Submittal Date**
Lea Midstream, LLC		August 22, 2025
Permittee/Company Contact	**Phone**	**Email**
James Hegar	(214) 238-5760	jhegar@producersmidstream.com

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

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

Universal Air Quality Permit Application

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

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

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

Acknowledgements:

☑ I acknowledge that a pre-application meeting is available to me upon request. ☐ Title V Operating, Title IV Acid Rain, and NPR applications have no fees.
☑ $500 NSR application Filing Fee enclosed OR ☐ The full permit fee associated with 10 fee points (required w/ streamline applications).
☑ Check No.: 661770 in the amount of $500
☑ I acknowledge the required submittal format for the hard copy application is printed double sided 'head-to-toe', 2-hole punched (except the Sect. 2 landscape tables is printed 'head-to-head'), numbered tab separators. Incl. a copy of the check on a separate page.
☑ I acknowledge there is an annual fee for permits in addition to the permit review fee: www.env.nm.gov/air-quality/permit-fees-2/.
☐ This facility qualifies for the small business fee reduction per 20.2.75.11.C. NMAC. The full $500.00 filing fee is included with this application and I understand the fee reduction will be calculated in the balance due invoice. The Small Business Certification Form has been previously submitted or is included with this application. (Small Business Environmental Assistance Program Information: www.env.nm.gov/air-quality/small-biz-eap-2/.)

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

Section 1 – Facility Information

Section 1-A: Company Information

		AI # if known (see 1st 3 to 5 #s of permit IDEA ID No.): 10610	Updating Permit/NOI #: 10342M1
1	Facility Name: The Dude Processing Plant	Plant primary SIC Code (4 digits): 1311	
		Plant NAIC code (6 digits): 21113	
a	Facility Street Address (If no facility street address, provide directions from a prominent landmark): From Monument., drive north on NM-8 N toward W 6th Ave for 5 miles. Turn left onto US-180 W/US-62 W and continue for about 13 miles. Turn right onto a dirt road and drive down it for 0.36 miles. Turn right, drive 0.15 miles before turning left. The plant will be on the right.		
2	Plant Operator Company Name: Lea Midstream, LLC	Phone/Fax: (214) 238-5760 / N/A	

a	Plant Operator Address: 3500 Maple Ave, Suite 700, Dallas, Texas 75219	
b	Plant Operator's New Mexico Corporate ID or Tax ID: TBD	
3	Plant Owner(s) name(s): Lea Midstream, LLC	Phone/Fax: (214) 238-5760 / N/A
a	Plant Owner(s) Mailing Address(s): 3500 Maple Ave, Suite 700, Dallas, Texas 75219	
4	Bill To (Company): Lea Midstream, LLC	Phone/Fax: (214) 238-5760 / N/A
a	Mailing Address: 3500 Maple Ave, Suite 700, Dallas, Texas 75219	E-mail: jhegar@producersmidstream.com
5	☑ Preparer: Trinity Consultants ☑ Consultant: Adam Erenstein	Phone/Fax: 505-266-6611
a	Mailing Address: 9400 Holly Ave NE, Building 3, Suite B Albuquerque, NM 87122	E-mail: aerenstein@trinityconsultants.com
6	Plant Operator Contact: James Hegar	Phone/Fax: (214) 238-5760 / N/A
a	Address: 3500 Maple Ave, Suite 700, Dallas, Texas 75219	E-mail: jhegar@producersmidstream.com
7	Air Permit Contact: James Hegar	Title: Senior Director of Operations
a	E-mail: jhegar@producersmidstream.com	Phone/Fax: (214) 238-5760 / N/A
b	Mailing Address: 3500 Maple Ave, Suite 700, Dallas, Texas 75219	
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: N/A
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: 10342M1
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: 2.29 MMscf/h	Daily: 55 MMscf/d	Annually: 20,075 MMscf/y
b	Proposed	Hourly: 5 MMscf/h	Daily: 120 MMscf/d	Annually: 43,800 MMscf/y
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: 2.29 MMscf/h	Daily: 55 MMscf/d	Annually: 20,075 MMscf/y
b	Proposed	Hourly: 5 MMscf/h	Daily: 120 MMscf/d	Annually: 43,800 MMscf/y

Section 1-D: Facility Location Information

1	Section: 04	Range: 33E	Township: 22S	County: Lea	Elevation (ft): 3863
2	UTM Zone: ☐ 12 or ☑ 13			Datum: ☐ NAD 27 ☐ NAD 83 ☑ WGS 84	
a	UTM E (in meters, to nearest 10 meters): 642,062			UTM N (in meters, to nearest 10 meters): 3,614,591	
b	**AND** Latitude (deg., min., sec.): 32°39'35.42"			Longitude (deg., min., sec.): -103°29'6.39"	
3	Name and zip code of nearest New Mexico town: Monument, 88265				
4	Detailed Driving Instructions from nearest NM town (attach a road map if necessary): From Monument., drive north on NM-8 N toward W 6th Ave for 5 miles. Turn left onto US-180 W/US-62 W and continue for about 13 miles. Turn right onto a dirt road and drive down it for 0.36 miles. Turn right, drive 0.15 miles before turning left. The plant will be on the right.				
5	The facility is 12.3 (distance) miles northwest (direction) of Monument (nearest town).				
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: Eddy County				
8	**20.2.72** NMAC applications **only**: Will the property on which the facility is proposed to be constructed or operated be closer than 50 km (31 miles) to other states, Bernalillo County, or a Class I area (see www.env.nm.gov/air-quality/modeling-publications/)? ☑ Yes ☐ No (20.2.72.206.A.7 NMAC) If yes, list all with corresponding distances in kilometers: Texas, 46.6 km				
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): 98.5 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: over 3,000 m				
12	Method(s) used to delineate the Restricted Area: Continuous Fencing "**Restricted Area**" is an area to which public entry is effectively precluded. Effective barriers include continuous fencing, continuous walls, or other continuous barriers approved by the Department, such as rugged physical terrain with steep grade that would require special equipment to traverse. If a large property is completely enclosed by fencing, a restricted area within the property may be identified with signage only. Public roads cannot be part of a Restricted Area.				
13	Does the owner/operator intend to operate this source as a portable stationary source as defined in 20.2.72.7.X NMAC? ☐ 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	($\frac{\text{hours}}{\text{year}}$): 8760		
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					

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: N/A		
a	If yes, NOV date or description of issue: N/A		NOV Tracking No: N/A
b	Is this application in response to any issue listed in 1-F, 1 or 1a above? ☐ 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: N/A Commercial power is purchased from a commercial utility company, which specifically does not include power generated on site for the sole purpose of the user.		

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

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

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

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

1	Responsible Official (R.O.) (20.2.70.300.D.2 NMAC): James Hegar	Phone: (214) 238-5760
a	R.O. Title: Senior Director of Operations	R.O. e-mail: jhegar@producersmidstream.com
b	R. O. Address: 3500 Maple Ave, Suite 700, Dallas, Texas 75219	
2	Alternate Responsible Official (20.2.70.300.D.2 NMAC): Sean Kelly	Phone: (832) 246-2506
a	A. R.O. Title: Director of Environmental, Health, Safety and Comp	A. R.O. e-mail: skelly@producersmidstream.com
b	A. R. O. Address: 3500 Maple Ave, Suite 700, Dallas, Texas 75219	
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): N/A	
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.): N/A	
a	Address of Parent Company: N/A	
5	Names of Subsidiary Companies ("Subsidiary Companies" means organizations, branches, divisions or subsidiaries, which are owned, wholly or in part, by the company to be permitted.): N/A	
6	Telephone numbers & names of the owners' agents and site contacts familiar with plant operations: James Hegar, (214) 238-5760	

7	Affected Programs to include Other States, local air pollution control programs (i.e. Bernalillo) and Indian tribes: Will the property on which the facility is proposed to be constructed or operated be closer than 80 km (50 miles) from other states, local pollution control programs, and Indian tribes and pueblos (20.2.70.402.A.2 and 20.2.70.7.B)? If yes, state which ones and provide the distances in kilometers: **States:** Texas (39.5 km) **Local Pollution Control Programs:** N/A **Indian Tribes and Pueblos:** N/A

Section 1-I – Submittal Requirements

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

Hard Copy Submittal Requirements:

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

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

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

Electronic files sent by (check one):

☐ CD/DVD attached to paper application

☑ secure electronic transfer. Air Permit Contact: **Adam Erenstein,** aerenstein@trinityconsultants.com, (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 #	Manufact-urer's Rated Capacity[3] (Specify Units)	Requested Permitted Capacity[3] (Specify Units)	Date of Manufacture[2] / Date of Construction/ Reconstruction[2]	Controlled by Unit # / Emissions vented to Stack #	Source Classi-fication Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB)[4]	Replacing Unit No.
ENG-1	Compressor Engine	Caterpillar	G3516 LE	WPT/4EK01542	1340 hp	1340 hp	10/04/94 05/01/25	Catalyst 1 ENG-1	20200254	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	
ENG-2	Compressor Engine	Caterpillar	G3606 LE	4ZS00640	1775 hp	1775 hp	06/23/06 05/01/25	Catalyst 2 ENG-2	20200254	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	
ENG-3	Compressor Engine	Caterpillar	G3606 LE	4ZS01708	1775 hp	1775 hp	09/30/12 05/01/25	Catalyst 3 ENG-3	20200254	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	
ENG-4	Compressor Engine	Caterpillar	G3606 LE	4ZS00645	1775 hp	1775 hp	07/01/06 05/01/25	Catalyst 4 ENG-4	20200254	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	
ENG-5	Compressor Engine	Caterpillar	G3516 LE	WPW02160	1340 hp	1340 hp	04/14/08 05/01/25	Catalyst 5 ENG-5	20200254	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	
ENG-6	Compressor Engine	Caterpillar	G3516 LE	3RC00915	1340 hp	1340 hp	07/20/07 05/01/25	Catalyst 6 ENG-6	20200254	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	
ENG-7	Compressor Engine	Caterpillar	G3606 LE	4ZS01354	1775 hp	1775 hp	04/21/10 05/01/25	Catalyst 7 ENG-7	20200254	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	
ENG-8	Generator Engine	Waukesha	P9394GSI S5	WAU-1709629	2500 hp	2500 hp	11/01/24 05/01/25	Catalyst 8 ENG-8	20200254	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SRB	
ENG-9	Generator Engine	Waukesha	P9394GSI S5	WAU-1709624	2500 hp	2500 hp	11/01/24 05/01/25	Catalyst 9 ENG-9	20200254	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SRB	
ENG-10	Generator Engine	Waukesha	P9394GSI S5	WAU-1709336	2500 hp	2500 hp	11/01/24 05/01/25	Catalyst 10 ENG-10	20200254	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SRB	
ENG-11	Generator Engine	Waukesha	P9394GSI S5	WAU-1709619	2500 hp	2500 hp	11/01/24 05/01/25	Catalyst 11 ENG-11	20200254	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SRB	
ENG-12	Generator Engine	Waukesha	P9394GSI S5	WAU-1714570	2500 hp	2500 hp	TBD TBD	Catalyst 12 ENG-12	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SRB	
ENG-13	Generator Engine	Waukesha	P9394GSI S5	WAU-1723893	2500 hp	2500 hp	TBD TBD	Catalyst 13 ENG-13	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SRB	
ENG-14	Generator Engine	Waukesha	P9394GSI S5	WAU-1723898	2500 hp	2500 hp	TBD TBD	Catalyst 14 ENG-14	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SRB	
ENG-15	Generator Engine	Waukesha	P9394GSI S5	WAU-1742435	2500 hp	2500 hp	TBD TBD	Catalyst 15 ENG-15	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SRB	
ENG-16	Generator Engine	Waukesha	P9394GSI S5	WAU-1742529	2500 hp	2500 hp	TBD TBD	Catalyst 16 ENG-16	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SRB	
ENG-17	Generator Engine	Waukesha	P9394GSI S5	WAU-1742440	2500 hp	2500 hp	TBD TBD	Catalyst 17 ENG-17	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SRB	
ENG-18	Generator Engine	Waukesha	P9394GSI S5	WAU-1742534	2500 hp	2500 hp	TBD TBD	Catalyst 18 ENG-18	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SRB	

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] / Date of Construction/ Reconstruction[2]	Controlled by Unit # / Emissions vented to Stack #	Source Classi-fication Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB)[4]	Replacing Unit No.
ENG-19	Generator Engine	Waukesha	P9394GSI S5	WAU-1750419	2500 hp	2500 hp	TBD TBD	Catalyst 19 ENG-19	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SRB	
ENG-20	Compressor Engine	Caterpillar	G3612 A4	TBD	3750 hp	3750 hp	TBD TBD	Catalyst 20 ENG-20	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	
ENG-21	Compressor Engine	Caterpillar	G3612 A4	TBD	3750 hp	3750 hp	TBD TBD	Catalyst 21 ENG-21	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	
ENG-22	Compressor Engine	Caterpillar	G3516 LE	TBD	1340 hp	1340 hp	TBD TBD	Catalyst 22 ENG-22	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	
C-1	Residue Compressor	Ariel	JGT-4	F-15539	N/A[6]	N/A[6]	10/01/00 05/01/25	ENG-1 N/A	31000203	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
C-2	Residue Compressor	Ariel	JGT-4	F-29731	N/A[6]	N/A[6]	04/01/08 05/01/25	ENG-5 N/A	31000203	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
C-3	Residue Compressor	Ariel	JGT-4	F-31169	N/A[6]	N/A[6]	11/01/08 05/01/25	ENG-6 N/A	31000203	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
C-4	NRU Feed Gas Compressor	Ariel	JGT-4	F-23736	N/A[6]	N/A[6]	06/01/08 05/01/25	ENG-2 N/A	31000203	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
C-5	NRU Feed Gas Compressor	Ariel	JGT-4	F-23737	N/A[6]	N/A[6]	06/01/06 05/01/25	ENG-4 N/A	31000203	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
C-6	NRU Feed Gas Compressor	Ariel	JGT-4	F-40027	N/A[6]	N/A[6]	01/01/13 05/01/25	ENG-3 N/A	31000203	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
C-7	Residue Compressor	Ariel	JGT-4	F-36089	N/A[6]	N/A[6]	07/12/11 05/01/25	ENG-7 N/A	31000203	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
C-8	Residue Compressor	Ariel	KBC/4	TBD	N/A[6]	N/A[6]	TBD TBD	ENG-20 N/A	31000203	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
C-9	Residue Compressor	Ariel	KBC/4	TBD	N/A[6]	N/A[6]	TBD TBD	ENG-21 N/A	31000203	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
C-10	Overhead Compressor	Ariel	JGE/4	TBD	N/A[6]	N/A[6]	TBD TBD	ENG-22 N/A	31000203	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
RBL-1	Train 1: Dehydrator Reboiler	Tejas Production Services	Regen, 1.500MMBTU/H	24-1328-001-A	1.5 MMBtu/hr	1.5 MMBtu/hr	2025 2025	N/A RBL-1	31000302	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
RBL-2	Stabilizer Reboiler	TBD	TBD	TBD	3.6 MMBtu/hr	3.6 MMBtu/hr	TBD TBD	N/A RBL-2	31000304	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☑ To be Replaced	N/A	
HO-1	Train 1: Amine Hot Oil Heater	Sigma Thermal	HC2-20.0-H-SF	J24034-001	26.4 MMBtu/hr	26.4 MMBtu/hr	2025 2025	N/A HO-1	31000404	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	

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] / Date of Construction/ Reconstruction[2]	Controlled by Unit # / Emissions vented to Stack #	Source Classi-fication Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB)[4]	Replacing Unit No.
HO-2	Train 1: Cryo Hot Oil Heater	Heatec	HCI-5010-30	14-168-551	5.074 MMBtu/hr	5.074 MMBtu/hr	07/17/05 05/05/15	N/A HO-2	31000404	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
HO-3[5]	Train 1: Stabilizer Hot Oil Heater	TBD	TBD	TBD	3.5 MMBtu/hr	3.5 MMBtu/hr	TBD TBD	N/A HO-3	31000404	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☑ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	RBL-2
HO-4	Train 2: Hot Oil Heater	Devco Heliflo Heat	Medium Heater	TBD	19.5 MMBtu/hr	19.5 MMBtu/hr	TBD TBD	N/A HO-4	31000404	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
HT-1	Train 1: Regeneration Heater	Heatec	HCI-5010-40-G	13-154-551	10.5 MMBtu/hr	10.5 MMBtu/hr	2/12/2014 2025	N/A HT-1	31000404	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
HT-2	Train 1: Sour Water Stripper Heater	Tryer Process Equipment	H-200	TBD	1.0 MMBtu/hr	1.0 MMBtu/hr	TBD TBD	N/A HT-2	31000404	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
DEHY-1	Train 1: TEG Dehydrator	Valerus Field Solutions	FGM210092-01-00	SN NIP-1885	120 MMSCFD	120 MMSCFD	2011 2/4/2025	COMB-1 COMB-1	31000301	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	
AMINE-1	Train 1: Amine Treating Unit	Kinder Morgan Treating LP	72"ID x 55'-00" S/S	1324	120 MMSCFD	120 MMSCFD	2023 2025	LP-FLARE, AGI-FLARE LP-FLARE, AGI-FLARE	31000201	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	
TK-1	Condensate Storage Tank	API	12F	4-17211	400 bbl	400 bbl	03/01/20 2025	VRU/COMB-2 VRU/COMB-2	40400311	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	
TK-2	Condensate Storage Tank	API	12F	4-17214	400 bbl	400 bbl	03/01/20 2025	VRU/COMB-2 VRU/COMB-2	40400311	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	
TK-3	Condensate Storage Tank	API	12F	4-17210	400 bbl	400 bbl	03/01/20 2025	VRU/COMB-2 VRU/COMB-2	40400311	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	
TK-4	Condensate Storage Tank	API	12F	4-17209	400 bbl	400 bbl	03/01/20 2025	VRU/COMB-2 VRU/COMB-2	40400311	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	
TK-5[5]	Condensate Storage Tank	TBD	TBD	TBD	400 bbl	400 bbl	TBD TBD	VRU/COMB-2 VRU/COMB-2	40400311	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	
TK-6[5]	Condensate Storage Tank	TBD	TBD	TBD	400 bbl	400 bbl	TBD TBD	VRU/COMB-2 VRU/COMB-2	40400311	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	
TK-7[5]	Condensate Storage Tank	TBD	TBD	TBD	400 bbl	400 bbl	TBD TBD	VRU/COMB-2 VRU/COMB-2	40400311	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	
TK-8[5]	Condensate Storage Tank	TBD	TBD	TBD	400 bbl	400 bbl	TBD TBD	VRU/COMB-2 VRU/COMB-2	40400311	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	
PWTK-1	Produced Water Storage Tank	API	12F	4-17212	400 bbl	400 bbl	03/01/20 2025	VRU/COMB-2 VRU/COMB-2	40400315	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	
PWTK-2	Produced Water Storage Tank	API	12F	4-17213	400 bbl	400 bbl	03/01/20 2025	VRU/COMB-2 VRU/COMB-2	40400315	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	

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] / Date of Construction/ Reconstruction[2]	Controlled by Unit # / Emissions vented to Stack #	Source Classi-fication Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB)[4]	Replacing Unit No.
PWTK-3	Produced Water Storage Tank	API	N/A	4-17215	500 bbl	500 bbl	03/01/20 TBD	VRU/COMB-2 VRU/COMB-2	40400315	☐ Existing (unchanged) ☑ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
PWTK-4	Produced Water Storage Tank	API	N/A	TBD	500 bbl	500 bbl	TBD TBD	VRU/COMB-2 VRU/COMB-2	40400315	☐ Existing (unchanged) ☑ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
LOAD	Condensate Truck Loading	N/A	N/A	N/A	11,823,073 gal/yr	11,823,073 gal/yr	N/A 07/01/25	VRU/COMB-2 VRU/COMB-2	40600132	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
PWLOAD	Produced Water Truck Loading	N/A	N/A	N/A	948,833 gal/yr	948,833 gal/yr	N/A 07/01/25	VRU/COMB-2 VRU/COMB-2	40600132	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
HP FLARE	Train 1: High-Pressure Emergency Flare	GBA-Corona	CSF-RO-10-VSF	CP21707	60 MMSCFD	60 MMSCFD	01/01/21 2025	N/A HP-FLARE	31000205	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	
LP FLARE	Train 1: Low-Pressure Process Flare	GBA-Corona	PF-16	CP21707	75 MMSCFD	75 MMSCFD	01/01/21 2025	N/A LP-FLARE	31000205	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	
FLARE-2	Train 2: SSM Flare	Zeeco	TBD	TBD	34.87 MMSCFD	34.87 MMSCFD	TBD TBD	N/A FLARE-2	31000205	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
AGI-FLARE	AGI Flare	HERO Process Solutions	G198U30	TBD	17.5 MMSCFD	17.5 MMSCFD	TBD TBD	N/A AGI-FLARE	31000205	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
FLARE-M	Malfunction Flaring: HP FLARE	GBA-Corona	CSF-RO-10-VSF	CP21707	0.42 MMSCFD	0.42 MMSCFD	N/A N/A	N/A N/A	31000205	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
	Malfunction Flaring: AGI Flare	HERO Process Solutions	G198U30	TBD	17.5 MMSCFD	17.5 MMSCFD	N/A N/A	N/A N/A				
COMB-1	Train 1: BTEX Combustor	Spiral X	S6E0V0002EP-PBP	24121087-A	2.41 MMscf/yr	2.41 MMscf/yr	06/01/25 2025	N/A COMB-1	31000205	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	
COMB-2	Train 1: Truck Loading Combustor	Spiral X	TBS48PFC1DP	20051023-A	0.91 MMscf/yr	0.91 MMscf/yr	06/01/20 07/17/05	N/A COMB-2	31000205	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	
EC-1	Acid Gas Compressor	Ariel	JGT-2	F-55872	N/A[6]	N/A[6]	02/23/18 TBD	N/A N/A	31000203	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
EC-2	Acid Gas Compressor	Ariel	JGT-2	F-55917	N/A[6]	N/A[6]	02/23/18 TBD	N/A N/A	31000203	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
EC-3	Acid Gas Compressor	Ariel	JGT-2	TBD	N/A[6]	N/A[6]	TBD TBD	N/A N/A	31000204	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	
FUG-1	Facility-wide Fugitives	N/A	N/A	N/A	N/A	N/A	N/A 07/01/25	N/A N/A	31088811	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	
SSM	Startup, Shutdown, Maintenance	N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A N/A	31088811	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	

[1] Unit numbers must correspond to unit numbers in the previous permit unless a complete cross reference table of all units in both permits is provided.
[2] Specify dates required to determine regulatory applicability.
[3] To properly account for power conversion efficiencies, generator set rated capacity shall be reported as the rated capacity of the engine in horsepower, not the kilowatt capacity of the generator set.
[4] "4SLB" means four stroke lean burn engine, "4SRB" means four stroke rich burn engine, "2SLB" means two stroke lean burn engine, "CI" means compression ignition, and "SI" means spark ignition
[5] Unit has not been ordered or procured.
[6] Unit has no stamped capacity. Capacity is a function of the associated engine or driver.

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

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

Unit Number	Source Description	Manufacturer	Model No. Serial No.	Max Capacity Capacity Units	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5) Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Manufacture /Reconstruction[2] Date of Installation /Construction[2]	For Each Piece of Equipment, Check Onc
HAUL	Haul Road Emissions	N/A	N/A N/A	N/A N/A	20.2.72.202.B(5) NMAC N/A	N/A N/A	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-LB-1	Lube Oil Tank	N/A[3]	N/A[3] LBTK-2510	490 gal	20.2.72.202.B(2) NMAC N/A	2025 2025	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-AF-1	Antifreeze Tank	N/A[3]	N/A[3] AFTK-2510	490 gal	20.2.72.202.B(2) NMAC N/A	2025 2025	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-Amine	Amine Tank	API	N/A 172954	490 gal	20.2.72.202.B(2) NMAC N/A	7/1/2020 2025	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☑ To be Replaced
TK-TEG	TEG Tank	TBD	TBD TBD	2600 gal	20.2.72.202.B(2) NMAC N/A	7/1/2020 2025	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☑ To be Replaced
TK-RO	RO Water Tank	TBD	TBD TBD	2600 gal	20.2.72.202.B(2) NMAC N/A	7/1/2020 2025	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☑ To be Replaced
TK-AF-2	Antifreeze Tank	TBD	TBD TBD	100 bbl	20.2.72.202.B(2) NMAC N/A	TBD TBD	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-LB-2	Lube Oil Tank	API	12F TBD	100 bbl	20.2.72.202.B(2) NMAC N/A	TBD TBD	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-Amine	Amine Tank	API	12F 172954	100 bbl	20.2.72.202.B(2) NMAC N/A	7/1/2020 2025	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☑ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-TEG	TEG Tank	Polyethylene tank	N/A TK-8520	3000 gal	20.2.72.202.B(2) NMAC N/A	7/1/2020 2025	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☑ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-RO	RO Water Tank	Polyethylene tank	N/A TK-8510	3000 gal	20.2.72.202.B(2) NMAC N/A	7/1/2020 2025	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☑ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-LB-3	Lube Oil Tank	N/A[3]	N/A[3] LBTK-2421	490 gal	20.2.72.202.B(2) NMAC N/A	2025 2025	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-LB-4	Lube Oil Tank	N/A[3]	N/A[3] LBTK-2420	490 gal	20.2.72.202.B(2) NMAC N/A	2025 2025	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-LB-5	Lube Oil Tank	N/A[3]	N/A[3] LBTK-2420	490 gal	20.2.72.202.B(2) NMAC N/A	2025 2025	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-LB-6	Lube Oil Tank	N/A[3]	N/A[3] LBTK-2214	490 gal	20.2.72.202.B(2) NMAC N/A	2025 2025	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-LB-7	Lube Oil Tank	N/A[3]	N/A[3] LBTK-2110	490 gal	20.2.72.202.B(2) NMAC N/A	2025 2025	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-LB-8	Lube Oil Tank	N/A[3]	N/A[3] LBTK-2213	490 gal	20.2.72.202.B(2) NMAC N/A	2025 2025	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced

Unit Number	Source Description	Manufacturer	Model No. / Serial No.	Max Capacity / Capacity Units	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5) / Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Manufacture /Reconstruction[2] / Date of Installation /Construction[2]	For Each Piece of Equipment, Check Onc
TK-LB-9	Lube Oil Tank	N/A[3]	N/A[3] / LBTK-2111	490 / gal	20.2.72.202.B(2) NMAC / N/A	2025 / 2025	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-LB-10	Lube Oil Tank	N/A[3]	N/A[3] / LBTK-GEN1	490 / gal	20.2.72.202.B(2) NMAC / N/A	2025 / 2025	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-LB-11	Lube Oil Tank	N/A[3]	N/A[3] / LBTK-GEN2	490 / gal	20.2.72.202.B(2) NMAC / N/A	2025 / 2025	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-LB-12	Lube Oil Tank	N/A[3]	N/A[3] / LBTK-GEN3	490 / gal	20.2.72.202.B(2) NMAC / N/A	2025 / 2025	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-LB-13	Lube Oil Tank	N/A[3]	N/A[3] / LBTK-GEN4	490 / gal	20.2.72.202.B(2) NMAC / N/A	2025 / 2025	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-LB-14	Lube Oil Tank	N/A[3]	N/A[3] / LBTK-2310-2311	490 / gal	20.2.72.202.B(2) NMAC / N/A	2025 / 2025	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-LB-15	Lube Oil Tank	POLY	TBD / TBD	3000 / bbl	20.2.72.202.B(2) NMAC / N/A	TBD / TBD	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-FO-1	Frame Oil Tank	N/A[3]	N/A[3] / FOTK-2310-2311	490 / gal	20.2.72.202.B(2) NMAC / N/A	2025 / 2025	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-AF-3	Antifreeze Tank	N/A[3]	N/A[3] / AFTK-2421	490 / gal	20.2.72.202.B(2) NMAC / N/A	2025 / 2025	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-AF-4	Antifreeze Tank	N/A[3]	N/A[3] / AFTK-2420	490 / gal	20.2.72.202.B(2) NMAC / N/A	2025 / 2025	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-AF-5	Antifreeze Tank	N/A[3]	N/A[3] / AFTK-2420	490 / gal	20.2.72.202.B(2) NMAC / N/A	2025 / 2025	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-AF-6	Antifreeze Tank	N/A[3]	N/A[3] / AFTK-2214	490 / gal	20.2.72.202.B(2) NMAC / N/A	2025 / 2025	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-AF-7	Antifreeze Tank	N/A[3]	N/A[3] / AFTK-2110	490 / gal	20.2.72.202.B(2) NMAC / N/A	2025 / 2025	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-AF-8	Antifreeze Tank	N/A[3]	N/A[3] / AFTK-2213	490 / gal	20.2.72.202.B(2) NMAC / N/A	2025 / 2025	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-AF-9	Antifreeze Tank	N/A[3]	N/A[3] / AFTK-2111	490 / gal	20.2.72.202.B(2) NMAC / N/A	2025 / 2025	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-AF-10	Antifreeze Tank	N/A[3]	N/A[3] / AFTK-GEN1	490 / gal	20.2.72.202.B(2) NMAC / N/A	2025 / 2025	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-AF-11	Antifreeze Tank	N/A[3]	N/A[3] / AFTK-GEN2	490 / gal	20.2.72.202.B(2) NMAC / N/A	2025 / 2025	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-AF-12	Antifreeze Tank	N/A[3]	N/A[3] / AFTK-GEN3	490 / gal	20.2.72.202.B(2) NMAC / N/A	2025 / 2025	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-AF-13	Antifreeze Tank	N/A[3]	N/A[3] / AFTK-GEN4	490 / gal	20.2.72.202.B(2) NMAC / N/A	2025 / 2025	☐ 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.

[3] These units are white tanks with no identifiable make/model.

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
Catalyst 1	Oxidation Catalyst	5/1/2025	CO, VOC, HCHO	ENG-1	CO: 96.07% VOC: 35.43% HCHO: 73.33%	Manufacturer Specs
Catalyst 2	Oxidation Catalyst	5/1/2025	CO, VOC, HCHO	ENG-2	CO: 95.64% VOC: 55.80% HCHO: 69.23%	Manufacturer Specs
Catalyst 3	Oxidation Catalyst	5/1/2025	CO, VOC, HCHO	ENG-3		Manufacturer Specs
Catalyst 4	Oxidation Catalyst	5/1/2025	CO, VOC, HCHO	ENG-4		Manufacturer Specs
Catalyst 5	Oxidation Catalyst	5/1/2025	CO, VOC, HCHO	ENG-5	CO: 96.07% VOC: 35.43% HCHO: 73.33%	Manufacturer Specs
Catalyst 6	Oxidation Catalyst	5/1/2025	CO, VOC, HCHO	ENG-6		Manufacturer Specs
Catalyst 7	Oxidation Catalyst	5/1/2025	CO, VOC, HCHO	ENG-7	CO: 95.64% VOC: 55.80%	Manufacturer Specs
Catalyst 8	Oxidation Catalyst	5/1/2025	NO_X, CO, VOC, HCHO	ENG-8	NO_X: 98.84% CO: 99.00% VOC: 87.30% HCHO: 94.21%	Manufacturer Specs
Catalyst 9	Oxidation Catalyst	5/1/2025	NO_X, CO, VOC, HCHO	ENG-9		Manufacturer Specs
Catalyst 10	Oxidation Catalyst	5/1/2025	NO_X, CO, VOC, HCHO	ENG-10		Manufacturer Specs
Catalyst 11	Oxidation Catalyst	5/1/2025	NO_X, CO, VOC, HCHO	ENG-11		Manufacturer Specs
Catalyst 12	Oxidation Catalyst	TBD	NO_X, CO, VOC, HCHO	ENG-12		Manufacturer Specs
Catalyst 13	Oxidation Catalyst	TBD	NO_X, CO, VOC, HCHO	ENG-13		Manufacturer Specs
Catalyst 14	Oxidation Catalyst	TBD	NO_X, CO, VOC, HCHO	ENG-14		Manufacturer Specs
Catalyst 15	Oxidation Catalyst	TBD	NO_X, CO, VOC, HCHO	ENG-15		Manufacturer Specs
Catalyst 16	Oxidation Catalyst	TBD	NO_X, CO, VOC, HCHO	ENG-16		Manufacturer Specs
Catalyst 17	Oxidation Catalyst	TBD	NO_X, CO, VOC, HCHO	ENG-17		Manufacturer Specs
Catalyst 18	Oxidation Catalyst	TBD	NO_X, CO, VOC, HCHO	ENG-18		Manufacturer Specs
Catalyst 19	Oxidation Catalyst	TBD	NO_X, CO, VOC, HCHO	ENG-19		Manufacturer Specs

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
Catalyst 20	Oxidation Catalyst	TBD	NO_X, CO, VOC, HCHO	ENG-20	NO_X: 0.33% CO: 90.84% HCHO: 69.23%	Manufacturer Specs
Catalyst 21	Oxidation Catalyst	TBD	NO_X, CO, VOC, HCHO	ENG-21		Manufacturer Specs
Catalyst 22	Oxidation Catalyst	TBD	CO, VOC, HCHO	ENG-22	CO: 96.07% VOC: 35.43% HCHO: 73.33%	Manufacturer Specs
HP-FLARE	Train 1 SSM flare	2025	VOC, HAP, H_2S	SSM	98%	Manufacturer Specs
LP-FLARE	Train 1 Process Flare	2025	VOC, HAP, H_2S	DEHY-1	98%	Manufacturer Specs
FLARE-2	Train 2 SSM Flare	TBD	VOC, HAP, H_2S	SSM	98%	Manufacturer Specs
AGI-FLARE	Emergency AGI Flare	TBD	VOC, HAP, H_2S	AMINE-1	98%	Manufacturer Specs
COMB-1	BTEX Combustor	2025	VOC, HAP, H_2S	DEHY-1	98%	Manufacturer Specs
COMB-2	Truck Loading Combustor	2025	VOC, HAP, H_2S	TK-1 to TK-8, PWTK-1 & PWTK-2, LOAD, PWLOAD	98%	Manufacturer Specs
VRU[2]	Vapor Recovery Unit	2025	VOC, HAP, H_2S	TK-1 to TK-8, PWTK-1 & PWTK-2	100%	Manufacturer Specs
AGI-1	Acid Gas Injection Well	TBD	VOC, HAP, H2S	AMINE-1	100%	Manufacturer Specs

[1] List each control device on a separate line. For each control device, list all emission units controlled by the control device.
[2] VRU has 100% capture efficiency and an assumed 5% downtime.

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

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

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

Unit No.	NOx		CO		VOC		SOx		PM[1]		PM10[1]		PM2.5[1]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
ENG-1	1.48	6.47	9.01	39.47	2.33	10.22	8.23E-03	0.036	0.11	0.47	0.11	0.47	0.11	0.47	-	-	-	-
ENG-2	1.96	8.57	10.76	47.13	3.58	15.67	8.67E-03	0.038	0.11	0.49	0.11	0.49	0.11	0.49	-	-	-	-
ENG-3	1.96	8.57	10.76	47.13	3.58	15.67	8.67E-03	0.038	0.11	0.49	0.11	0.49	0.11	0.49	-	-	-	-
ENG-4	1.96	8.57	10.76	47.13	3.58	15.67	8.67E-03	0.038	0.11	0.49	0.11	0.49	0.11	0.49	-	-	-	-
ENG-5	1.48	6.47	9.01	39.47	2.33	10.22	8.23E-03	0.036	0.11	0.47	0.11	0.47	0.11	0.47	-	-	-	-
ENG-6	1.48	6.47	9.01	39.47	2.33	10.22	8.23E-03	0.036	0.11	0.47	0.11	0.47	0.11	0.47	-	-	-	-
ENG-7	1.96	8.57	10.76	47.13	3.58	15.67	8.67E-03	0.038	0.11	0.49	0.11	0.49	0.11	0.49	-	-	-	-
ENG-8	71.10	311.41	32.52	142.43	0.74	3.22	0.013	0.056	0.32	1.40	0.32	1.40	0.32	1.40	-	-	-	-
ENG-9	71.10	311.41	32.52	142.43	0.74	3.22	0.013	0.056	0.32	1.40	0.32	1.40	0.32	1.40	-	-	-	-
ENG-10	71.10	311.41	32.52	142.43	0.74	3.22	0.013	0.056	0.32	1.40	0.32	1.40	0.32	1.40	-	-	-	-
ENG-11	71.10	311.41	32.52	142.43	0.74	3.22	0.013	0.056	0.32	1.40	0.32	1.40	0.32	1.40	-	-	-	-
ENG-12	71.10	311.41	32.52	142.43	0.74	3.22	0.013	0.056	0.32	1.40	0.32	1.40	0.32	1.40	-	-	-	-
ENG-13	71.10	311.41	32.52	142.43	0.74	3.22	0.013	0.056	0.32	1.40	0.32	1.40	0.32	1.40	-	-	-	-
ENG-14	71.10	311.41	32.52	142.43	0.74	3.22	0.013	0.056	0.32	1.40	0.32	1.40	0.32	1.40	-	-	-	-
ENG-15	71.10	311.41	32.52	142.43	0.74	3.22	0.013	0.056	0.32	1.40	0.32	1.40	0.32	1.40	-	-	-	-
ENG-16	71.10	311.41	32.52	142.43	0.74	3.22	0.013	0.056	0.32	1.40	0.32	1.40	0.32	1.40	-	-	-	-
ENG-17	71.10	311.41	32.52	142.43	0.74	3.22	0.013	0.056	0.32	1.40	0.32	1.40	0.32	1.40	-	-	-	-
ENG-18	71.10	311.41	32.52	142.43	0.74	3.22	0.013	0.056	0.32	1.40	0.32	1.40	0.32	1.40	-	-	-	-
ENG-19	71.10	311.41	32.52	142.43	0.74	3.22	0.013	0.056	0.32	1.40	0.32	1.40	0.32	1.40	-	-	-	-
ENG-20	2.48	10.86	22.57	98.86	5.65	24.77	0.018	0.080	0.24	1.04	0.24	1.04	0.24	1.04	-	-	-	-
ENG-21	2.48	10.86	22.57	98.86	5.65	24.77	0.018	0.080	0.24	1.04	0.24	1.04	0.24	1.04	-	-	-	-
ENG-22	1.48	6.47	9.01	39.47	2.33	10.22	8.23E-03	0.036	0.11	0.47	0.11	0.47	0.11	0.47	-	-	-	-
RBL-1	0.15	0.64	0.12	0.54	8.09E-03	0.035	1.10E-03	4.83E-03	0.011	0.049	0.011	0.049	0.011	0.049	-	-	-	-
HO-1	0.39	1.71	0.48	2.08	0.14	0.62	0.019	0.085	0.20	0.86	0.20	0.86	0.20	0.86	-	-	-	-
HO-2	0.50	2.18	0.42	1.83	0.027	0.12	3.72E-03	0.016	0.038	0.17	0.038	0.17	0.038	0.17	-	-	-	-
HO-3	0.34	1.50	0.29	1.26	0.019	0.083	2.57E-03	0.011	0.026	0.11	0.026	0.11	0.026	0.11	-	-	-	-
HO-4	1.95	8.53	1.64	7.16	0.11	0.47	0.015	0.064	0.15	0.65	0.15	0.65	0.15	0.65	-	-	-	-
HT-1	1.03	4.51	0.86	3.79	0.057	0.25	7.71E-03	0.034	0.078	0.34	0.078	0.34	0.078	0.34	-	-	-	-
HT-2	0.098	0.43	0.082	0.36	5.39E-03	0.024	7.35E-04	3.22E-03	7.45E-03	0.033	7.45E-03	0.033	7.45E-03	0.033	-	-	-	-

Unit No.	NOx		CO		VOC		SOx		PM[1]		PM10[1]		PM2.5[1]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
DEHY-1	-	-	-	-	215.88	945.56	-	-	-	-	-	-	-	-	0.044	0.19	-	-
AMINE-1	-	-	-	-	31.85	139.51	-	-	-	-	-	-	-	-	1,777.16	7,783.98	-	-
TK-1	-	-	-	-	1.38	6.04	-	-	-	-	-	-	-	-	2.94E-07	1.29E-06	-	-
TK-2	-	-	-	-	1.38	6.04	-	-	-	-	-	-	-	-	2.94E-07	1.29E-06	-	-
TK-3	-	-	-	-	1.38	6.04	-	-	-	-	-	-	-	-	2.94E-07	1.29E-06	-	-
TK-4	-	-	-	-	1.38	6.04	-	-	-	-	-	-	-	-	2.94E-07	1.29E-06	-	-
TK-5	-	-	-	-	1.38	6.04	-	-	-	-	-	-	-	-	2.94E-07	1.29E-06	-	-
TK-6	-	-	-	-	1.38	6.04	-	-	-	-	-	-	-	-	2.94E-07	1.29E-06	-	-
TK-7	-	-	-	-	1.38	6.04	-	-	-	-	-	-	-	-	2.94E-07	1.29E-06	-	-
TK-8	-	-	-	-	1.38	6.04	-	-	-	-	-	-	-	-	2.94E-07	1.29E-06	-	-
PWTK-1	-	-	-	-	0.65	2.85	-	-	-	-	-	-	-	-	6.02E-08	2.64E-07	-	-
PWTK-2	-	-	-	-	0.65	2.85	-	-	-	-	-	-	-	-	6.02E-08	2.64E-07	-	-
LOAD	-	-	-	-	183.51	71.75	-	-	-	-	-	-	-	-	3.91E-05	1.53E-07	-	-
PW-LOAD	-	-	-	-	127.00	3.98	-	-	-	-	-	-	-	-	0.20	6.12E-05	-	-
HP FLARE	7.74E-03	0.034	0.035	0.15	4.67E-03	0.020	9.29E-05	4.07E-04	-	-	-	-	-	-	-	-	-	-
LP FLARE	0.011	0.050	0.052	0.23	6.82E-03	0.030	1.36E-04	5.94E-04	-	-	-	-	-	-	-	-	-	-
FLARE-2	5.96E-03	0.026	0.027	0.12	3.59E-03	0.016	7.14E-05	3.13E-04	-	-	-	-	-	-	-	-	-	-
AGI-FLARE	3.28E-03	0.014	0.015	0.065	1.97E-03	8.65E-03	3.93E-05	1.72E-04	-	-	-	-	-	-	-	-	-	-
COMB-1	0.011	0.048	9.24E-03	0.040	6.05E-04	2.65E-03	7.86E-05	3.44E-04	8.36E-04	3.66E-03	8.36E-04	3.66E-03	8.36E-04	3.66E-03	4.40E-05	1.93E-04	-	-
COMB-2	0.010	0.044	8.40E-03	0.037	5.50E-04	2.41E-03	7.14E-05	3.13E-04	7.60E-04	3.33E-03	7.60E-04	3.33E-03	7.60E-04	3.33E-03	4.00E-05	1.75E-04	-	-
FUG	-	-	-	-	4.73	20.71	-	-	-	-	-	-	-	-	0.058	0.25	-	-
SSM	-	-	-	-	31,746.05	240.45	-	-	-	-	-	-	-	-	596.62	4.80	-	-
Totals	876.39	3,838.57	518.48	2,270.94	32,365.51	1,669.42	0.31	1.35	5.70	24.98	5.70	24.98	5.70	24.98	2,374.08	7,789.22	-	-

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

Table 2-E: Requested Allowable Emissions

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

Unit No.	NOx		CO		VOC		SOx		PM[1]		PM10[1]		PM2.5[1]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
ENG-1	1.48	6.47	0.35	1.55	1.51	6.60	8.23E-03	0.036	0.11	0.47	0.11	0.47	0.11	0.47	-	-	-	-
ENG-2	1.96	8.57	0.47	2.06	1.58	6.93	8.67E-03	0.038	0.11	0.49	0.11	0.49	0.11	0.49	-	-	-	-
ENG-3	1.96	8.57	0.47	2.06	1.58	6.93	8.67E-03	0.038	0.11	0.49	0.11	0.49	0.11	0.49	-	-	-	-
ENG-4	1.96	8.57	0.47	2.06	1.58	6.93	8.67E-03	0.038	0.11	0.49	0.11	0.49	0.11	0.49	-	-	-	-
ENG-5	1.48	6.47	0.35	1.55	1.51	6.60	8.23E-03	0.036	0.11	0.47	0.11	0.47	0.11	0.47	-	-	-	-
ENG-6	1.48	6.47	0.35	1.55	1.51	6.60	8.23E-03	0.036	0.11	0.47	0.11	0.47	0.11	0.47	-	-	-	-
ENG-7	1.96	8.57	0.47	2.06	1.58	6.93	8.67E-03	0.038	0.11	0.49	0.11	0.49	0.11	0.49	-	-	-	-
ENG-8	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	0.32	1.40	-	-	-	-
ENG-9	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	0.32	1.40	-	-	-	-
ENG-10	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	0.32	1.40	-	-	-	-
ENG-11	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	0.32	1.40	-	-	-	-
ENG-12	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	0.32	1.40	-	-	-	-
ENG-13	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	0.32	1.40	-	-	-	-
ENG-14	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	0.32	1.40	-	-	-	-
ENG-15	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	0.32	1.40	-	-	-	-
ENG-16	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	0.32	1.40	-	-	-	-
ENG-17	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	0.32	1.40	-	-	-	-
ENG-18	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	0.32	1.40	-	-	-	-
ENG-19	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	0.32	1.40	-	-	-	-
ENG-20	2.47	10.83	2.07	9.05	4.91	21.51	0.018	0.080	0.24	1.04	0.24	1.04	0.24	1.04	-	-	-	-
ENG-21	2.47	10.83	2.07	9.05	4.91	21.51	0.018	0.080	0.24	1.04	0.24	1.04	0.24	1.04	-	-	-	-
ENG-22	1.48	6.47	0.35	1.55	1.51	6.60	8.23E-03	0.036	0.11	0.47	0.11	0.47	0.11	0.47	-	-	-	-
RBL-1	0.15	0.64	0.12	0.54	8.09E-03	0.035	1.10E-03	4.83E-03	0.011	0.049	0.011	0.049	0.011	0.049	-	-	-	-
HO-1	0.39	1.71	0.48	2.08	0.14	0.62	0.019	0.085	0.20	0.86	0.20	0.86	0.20	0.86	-	-	-	-
HO-2	0.50	2.18	0.42	1.83	0.027	0.12	3.72E-03	0.016	0.038	0.17	0.038	0.17	0.038	0.17	-	-	-	-
HO-3	0.34	1.50	0.29	1.26	0.019	0.083	2.57E-03	0.011	0.026	0.11	0.026	0.11	0.026	0.11	-	-	-	-
HO-4	1.95	8.53	1.64	7.16	0.11	0.47	0.015	0.064	0.15	0.65	0.15	0.65	0.15	0.65	-	-	-	-
HT-1	1.03	4.51	0.86	3.79	0.057	0.25	7.71E-03	0.034	0.078	0.34	0.078	0.34	0.078	0.34	-	-	-	-
HT-2	0.098	0.43	0.082	0.36	5.39E-03	0.024	7.35E-04	3.22E-03	7.45E-03	0.033	7.45E-03	0.033	7.45E-03	0.033	-	-	-	-

Unit No.	NOx		CO		VOC		SOx		PM[1]		PM10[1]		PM2.5[1]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
DEHY-1	Emissions are controlled by COMB-1 and LP FLARE. Emissions are represented under COMB-1 and LP FLARE.																	
AMINE-1	Emissions are controlled by AGI-1 and AGI-FLARE. Emissions are represented under AGI-FLARE.																	
TK-1	Emissions are controlled by COMB-2. Emissions are represented under COMB-2.																	
TK-2	Emissions are controlled by COMB-2. Emissions are represented under COMB-2.																	
TK-3	Emissions are controlled by COMB-2. Emissions are represented under COMB-2.																	
TK-4	Emissions are controlled by COMB-2. Emissions are represented under COMB-2.																	
TK-5	Emissions are controlled by COMB-2. Emissions are represented under COMB-2.																	
TK-6	Emissions are controlled by COMB-2. Emissions are represented under COMB-2.																	
TK-7	Emissions are controlled by COMB-2. Emissions are represented under COMB-2.																	
TK-8	Emissions are controlled by COMB-2. Emissions are represented under COMB-2.																	
PWTK-1	Emissions are controlled by COMB-2. Emissions are represented under COMB-2.																	
PWTK-2	Emissions are controlled by COMB-2. Emissions are represented under COMB-2.																	
LOAD	-	-	-	-	55.05	21.52	-	-	-	-	-	-	-	-	1.17E-05	4.59E-08	-	-
PW-LOAD	-	-	-	-	38.10	1.20	-	-	-	-	-	-	-	-	0.059	1.84E-05	-	-
HP FLARE	7.74E-03	0.034	0.035	0.15	4.67E-03	0.020	9.29E-05	4.07E-04	-	-	-	-	-	-	-	-	-	-
LP FLARE	0.34	1.48	1.54	6.74	2.36	10.34	0.030	0.13	-	-	-	-	-	-	3.05E-04	1.34E-03	-	-
FLARE-2	5.96E-03	0.026	0.027	0.12	3.59E-03	0.016	7.14E-05	3.13E-04	-	-	-	-	-	-	-	-	-	-
AGI-FLARE	3.28E-03	0.014	0.015	0.065	1.97E-03	8.65E-03	3.93E-05	1.72E-04	-	-	-	-	-	-	-	-	-	-
COMB-1	0.099	0.43	0.083	0.37	5.46E-03	8.61	0.057	0.25	7.54E-03	0.033	7.54E-03	0.033	7.54E-03	0.033	6.21E-04	2.72E-03	-	-
COMB-2	0.021	0.090	0.017	0.076	6.46	1.57	0.36	7.61E-04	1.57E-03	6.88E-03	1.57E-03	6.88E-03	1.57E-03	6.88E-03	3.94E-03	1.76E-04	-	-
FUG	-	-	-	-	4.73	20.71	-	-	-	-	-	-	-	-	0.058	0.25	-	-
Totals	33.48	146.64	16.93	74.15	130.37	167.62	0.75	1.72	5.71	25.02	5.71	25.02	5.71	25.02	0.12	0.26	-	-

[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).

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

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

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

Unit No.	NOx		CO		VOC		SOx		PM[2]		PM10[2]		PM2.5[2]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
HP FLARE	2.42	2.20E-03	11.02	0.01	9.81	6.77E-03	1.34	4.88E-03	-	-	-	-	-	-	0.01	5.18E-05	-	-
LP FLARE	178.25	0.83	812.60	3.77	500.30	2.01E-03	1,167.77	9.39	-	-	-	-	-	-	11.92	4.79E-05	-	-
FLARE-2	29.48	0.01	134.37	0.07	27.62	0.06	0.11	2.29E-04	-	-	-	-	-	-	1.17E-03	2.34E-06	-	-
AGI-FLARE	31.34	1.57	142.86	7.14	19.01	0.03	3,278.71	163.94	-	-	-	-	-	-	35.54	1.78	-	-
SSM	-	-	-	-	762.60	33.64	-	-	-	-	-	-	-	-	0.03	1.41E-03	-	-
FLARE-M	2.42	10.00	4.83	10.00	0.53	10.00	-	10.00	-	-	-	-	-	-	-	10.00	-	-
	31.34		142.86		19.01		3,278.71		-	-	-	-	-	-	35.54		-	-
AOS-1 Totals	210.14	0.84	957.99	3.84	1,300.33	33.70	1,169.23	9.40	-	-	-	-	-	-	11.96	1.51E-03	-	-
AOS-2 Totals	31.34	1.57	142.86	7.14	781.60	33.67	3,278.71	163.94	-	-	-	-	-	-	35.58	1.78	-	-
AOS-3 Totals	210.14	10.84	951.81	13.83	1,291.05	43.70	1,167.89	19.39	-	-	-	-	-	-	11.95	10.00	-	-
AOS-4 Totals	31.34	10.00	142.86	10.00	781.60	43.64	3,278.71	10.00	-	-	-	-	-	-	35.58	10.00	-	-

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

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

[4] **Alternate Operating Scenario 1:** During the AOS-1 scenario, the high-pressure flare (HP-FLARE), low-pressure flare (LP-FLARE), and the Train 2 flare (FLARE-2) will operate at the maximum requested allowable emissions level, controlling normal operating scenarios and startup, shutdown, and maintenance activities applicable to each unit. Vented SSM may occur during this scenario and is therefore included in the AOS-1 Totals.

[5] **Alternate Operating Scenario 2:** During the AOS-2 scenario the acid gas injection flare (AGI-FLARE) will operate at the maximum requested allowable emissions level. The high-pressure flare (HP-FLARE), low-pressure flare (LP-FLARE), and the Train 2 flare (FLARE-2) will not not flare any startup, shutdown, or maintenance activities. Vented SSM may occur during this scenario and is therefore included in the AOS-2 Totals.

[6] **Alternate Operating Scenarios 3 & 4:** AOS-3 and AOS-4 are malfunction flaring scenarios. The combined malfunction flaring (FLARE-M) emissions for AOS-3 and AOS-4 will not exceed 10 tpy. Vented SSM may occur during this scenario and is therefore included in the AOS-3 and AOS-4 Totals. Please refer to Section 15 for more detail on AOS-3 and AOS-4.

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

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

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

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

Table 2-H: Stack Exit Conditions

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

Stack Number	Serving Unit Number(s) from Table 2-A	Orientation (H-Horizontal V=Vertical)	Rain Caps (Yes or No)	Height Above Ground (ft)	Temp. (F)	Flow Rate		Moisture by Volume (%)	Velocity (ft/sec)	Inside Diameter (ft)
						(acfs)	(dcfs)			
ENG-1	ENG-1	V	No	27	816	164.58	141.79	10%	124.00	1.30
ENG-2	ENG-2	V	No	27	847	202.43	174.40	10%	64.44	2.00
ENG-3	ENG-3	V	No	27	847	202.43	174.40	10%	64.44	2.00
ENG-4	ENG-4	V	No	27	847	202.43	174.40	10%	64.44	2.00
ENG-5	ENG-5	V	No	27	816	164.58	141.79	10%	124.00	1.30
ENG-6	ENG-6	V	No	27	816	164.58	141.79	10%	124.00	1.30
ENG-7	ENG-7	V	No	27	847	202.43	174.40	10%	64.44	2.00
ENG-8	ENG-8	V	No	22	1079	173.22	149.23	10%	55.14	2.00
ENG-9	ENG-9	V	No	22	1079	173.22	149.23	10%	55.14	2.00
ENG-10	ENG-10	V	No	22	1079	173.22	149.23	10%	55.14	2.00
ENG-11	ENG-11	V	No	22	1079	173.22	149.23	10%	55.14	2.00
ENG-12	ENG-12	V	No	22	1079	173.22	149.23	10%	55.14	2.00
ENG-13	ENG-13	V	No	22	1079	173.22	149.23	10%	55.14	2.00
ENG-14	ENG-14	V	No	22	1079	173.22	149.23	10%	55.14	2.00
ENG-15	ENG-15	V	No	22	1079	173.22	149.23	10%	55.14	2.00
ENG-16	ENG-16	V	No	22	1079	173.22	149.23	10%	55.14	2.00
ENG-17	ENG-17	V	No	22	1079	173.22	149.23	10%	55.14	2.00
ENG-18	ENG-18	V	No	22	1079	173.22	149.23	10%	55.14	2.00
ENG-19	ENG-19	V	No	22	1079	173.22	149.23	10%	55.14	2.00
ENG-20	ENG-20	V	No	29	796	399.42	344.10	10%	81.37	2.50
ENG-21	ENG-21	V	No	29	796	399.42	344.10	10%	81.37	2.50
ENG-22	ENG-22	V	No	27	816	164.58	141.79	10%	124.00	1.30
RBL-1	RBL-1	V	No	16	600	10.39	8.95	10%	7.83	1.30
HO-1	HO-1	V	No	15	600	191.66	165.12	10%	39.05	2.50

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)	(dcfs)			
HO-2	HO-2	V	Yes	16	800	43.75	37.69	10%	35.65	1.25
HO-3	HO-3	V	No	15	600	24.25	20.89	10%	4.94	2.50
HO-4	HO-4	V	No	15	800	171.39	147.65	10%	34.91	2.50
HT-1	HT-1	V	Yes	16	800	90.61	78.06	10%	28.84	2.00
HT-2	HT-2	V	No	16	600	6.93	5.97	10%	19.85	0.67
HP FLARE	HP FLARE	V	No	115	1832	136.75	117.81	10%	65.60	0.80
LP FLARE	LP FLARE	V	No	115	1832	79.47	68.47	10%	65.60	1.00
FLARE-2	FLARE-2	V	No	120	1832	79.47	68.47	10%	65.60	1.00
AGI-FLARE	AGI-FLARE	V	No	198	1832	40.80	35.15	10%	65.60	2.50
COMB-1	COMB-1	V	No	11	1600	32.16	27.70	10%	6.55	2.50
COMB-2	COMB-2	V	No	11	1600	6.39	5.51	10%	1.30	2.50

Table 2-I: Stack Exit and Fugitive Emission Rates for HAPs and TAPs[4]

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		Hexane ☑ HAP or ☐ TAP		Benzene ☑ HAP or ☐ TAP		Toluene ☑ HAP or ☐ TAP		Ethylbenzene ☑ HAP or ☐ TAP		Xylenes ☑ HAP or ☐ TAP		Acetaldehyde ☑ HAP or ☐ TAP		Acrolein ☑ 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
ENG-1	ENG-1	0.40	1.77	0.24	1.04	0.012	0.051	4.70E-03	0.021	4.36E-03	0.019	4.24E-04	1.86E-03	1.96E-03	8.61E-03	0.089	0.39	0.055	0.24
ENG-2	ENG-2	0.49	2.14	0.31	1.37	0.012	0.054	4.95E-03	0.022	4.59E-03	0.020	4.47E-04	1.96E-03	2.07E-03	9.07E-03	0.094	0.41	0.058	0.25
ENG-3	ENG-3	0.49	2.14	0.31	1.37	0.012	0.054	4.95E-03	0.022	4.59E-03	0.020	4.47E-04	1.96E-03	2.07E-03	9.07E-03	0.094	0.41	0.058	0.25
ENG-4	ENG-4	0.49	2.14	0.31	1.37	0.012	0.054	4.95E-03	0.022	4.59E-03	0.020	4.47E-04	1.96E-03	2.07E-03	9.07E-03	0.094	0.41	0.058	0.25
ENG-5	ENG-5	0.40	1.77	0.24	1.04	0.012	0.051	4.70E-03	0.021	4.36E-03	0.019	4.24E-04	1.86E-03	1.96E-03	8.61E-03	0.089	0.39	0.055	0.24
ENG-6	ENG-6	0.40	1.77	0.24	1.04	0.012	0.051	4.70E-03	0.021	4.36E-03	0.019	4.24E-04	1.86E-03	1.96E-03	8.61E-03	0.089	0.39	0.055	0.24
ENG-7	ENG-7	0.49	2.14	0.31	1.37	0.012	0.054	4.95E-03	0.022	4.59E-03	0.020	4.47E-04	1.96E-03	2.07E-03	9.07E-03	0.094	0.41	0.058	0.25
ENG-8	ENG-8	0.16	0.71	0.016	0.070	0.018	0.080	0.026	0.11	9.22E-03	0.040	4.10E-04	1.79E-03	3.22E-03	0.014	0.046	0.20	0.043	0.19
ENG-9	ENG-9	0.16	0.71	0.016	0.070	0.018	0.080	0.026	0.11	9.22E-03	0.040	4.10E-04	1.79E-03	3.22E-03	0.014	0.046	0.20	0.043	0.19
ENG-10	ENG-10	0.16	0.71	0.016	0.070	0.018	0.080	0.026	0.11	9.22E-03	0.040	4.10E-04	1.79E-03	3.22E-03	0.014	0.046	0.20	0.043	0.19
ENG-11	ENG-11	0.16	0.71	0.016	0.070	0.018	0.080	0.026	0.11	9.22E-03	0.040	4.10E-04	1.79E-03	3.22E-03	0.014	0.046	0.20	0.043	0.19
ENG-12	ENG-12	0.16	0.71	0.016	0.070	0.018	0.080	0.026	0.11	9.22E-03	0.040	4.10E-04	1.79E-03	3.22E-03	0.014	0.046	0.20	0.043	0.19
ENG-13	ENG-13	0.16	0.71	0.016	0.070	0.018	0.080	0.026	0.11	9.22E-03	0.040	4.10E-04	1.79E-03	3.22E-03	0.014	0.046	0.20	0.043	0.19
ENG-14	ENG-14	0.16	0.71	0.016	0.070	0.018	0.080	0.026	0.11	9.22E-03	0.040	4.10E-04	1.79E-03	3.22E-03	0.014	0.046	0.20	0.043	0.19
ENG-15	ENG-15	0.16	0.71	0.016	0.070	0.018	0.080	0.026	0.11	9.22E-03	0.040	4.10E-04	1.79E-03	3.22E-03	0.014	0.046	0.20	0.043	0.19
ENG-16	ENG-16	0.16	0.71	0.016	0.070	0.018	0.080	0.026	0.11	9.22E-03	0.040	4.10E-04	1.79E-03	3.22E-03	0.014	0.046	0.20	0.043	0.19
ENG-17	ENG-17	0.16	0.71	0.016	0.070	0.018	0.080	0.026	0.11	9.22E-03	0.040	4.10E-04	1.79E-03	3.22E-03	0.014	0.046	0.20	0.043	0.19
ENG-18	ENG-18	0.16	0.71	0.016	0.070	0.018	0.080	0.026	0.11	9.22E-03	0.040	4.10E-04	1.79E-03	3.22E-03	0.014	0.046	0.20	0.043	0.19
ENG-19	ENG-19	0.16	0.71	0.016	0.070	0.018	0.080	0.026	0.11	9.22E-03	0.040	4.10E-04	1.79E-03	3.22E-03	0.014	0.046	0.20	0.043	0.19
ENG-20	ENG-20	0.70	3.08	0.33	1.45	0.026	0.11	9.42E-04	4.13E-03	9.68E-03	0.042	9.42E-04	4.13E-03	4.37E-03	0.019	0.20	0.87	0.12	0.53
ENG-21	ENG-21	0.70	3.08	0.33	1.45	0.026	0.11	9.42E-04	4.13E-03	9.68E-03	0.042	9.42E-04	4.13E-03	4.37E-03	0.019	0.20	0.87	0.12	0.53
ENG-22	ENG-22	0.40	1.77	0.24	1.04	0.012	0.051	4.70E-03	0.021	4.36E-03	0.019	4.24E-04	1.86E-03	1.96E-03	8.61E-03	0.089	0.39	0.055	0.24
RBL-1	RBL-1	2.77E-03	0.012	1.10E-04	4.83E-04	2.65E-03	0.012	3.09E-06	1.35E-05	5.00E-06	2.19E-05	-	-	-	-	-	-	-	-
HO-1	HO-1	0.049	0.21	1.94E-03	8.50E-03	0.047	0.20	5.44E-05	2.38E-04	8.80E-05	3.85E-04	-	-	-	-	-	-	-	-
HO-2	HO-2	9.35E-03	0.041	3.73E-04	1.63E-03	8.95E-03	0.039	1.04E-05	4.57E-05	1.69E-05	7.40E-05	-	-	-	-	-	-	-	-
HO-3	HO-3	6.45E-03	0.028	2.57E-04	1.13E-03	6.18E-03	0.027	7.21E-06	3.16E-05	1.17E-05	5.11E-05	-	-	-	-	-	-	-	-
HO-4	HO-4	0.037	0.16	1.46E-03	6.40E-03	0.035	0.15	4.09E-05	1.79E-04	6.62E-05	2.90E-04	-	-	-	-	-	-	-	-
HT-1	HT-1	0.019	0.085	7.72E-04	3.38E-03	0.019	0.081	2.16E-05	9.47E-05	3.50E-05	1.53E-04	-	-	-	-	-	-	-	-
HT-2	HT-2	1.84E-03	8.08E-03	7.35E-05	3.22E-04	1.76E-03	7.73E-03	2.06E-06	9.02E-06	3.33E-06	1.46E-05	-	-	-	-	-	-	-	-
COMB-1, LP-FLARE	DEHY-1	Emissions are controlled by COMB-1 and LP FLARE. Emissions are represented under COMB-1 and LP FLARE.																	
AGI-FLARE	AMINE-1	Emissions are controlled by AGI-1 and AGI-FLARE. Emissions are represented under AGI-FLARE.																	
COMB-2	TK-1	Emissions are controlled by COMB-2. Emissions are represented under COMB-2.																	
COMB-2	TK-2	Emissions are controlled by COMB-2. Emissions are represented under COMB-2.																	
COMB-2	TK-3	Emissions are controlled by COMB-2. Emissions are represented under COMB-2.																	
COMB-2	TK-4	Emissions are controlled by COMB-2. Emissions are represented under COMB-2.																	
COMB-2	TK-5	Emissions are controlled by COMB-2. Emissions are represented under COMB-2.																	
COMB-2	TK-6	Emissions are controlled by COMB-2. Emissions are represented under COMB-2.																	
COMB-2	TK-7	Emissions are controlled by COMB-2. Emissions are represented under COMB-2.																	
COMB-2	TK-8	Emissions are controlled by COMB-2. Emissions are represented under COMB-2.																	
COMB-2	PWTK-1	Emissions are controlled by COMB-2. Emissions are represented under COMB-2.																	
COMB-2	PWTK-2	Emissions are controlled by COMB-2. Emissions are represented under COMB-2.																	
LOAD	LOAD	3.22	1.26	-	-	1.47	0.57	1.39	0.54	0.032	0.012	-	-	0.014	5.43E-03	-	-	-	-
PW-LOAD	PW-LOAD	10.71	0.34	-	-	0.50	0.016	8.37	0.26	1.71	0.054	0.052	1.62E-03	0.078	2.46E-03	-	-	-	-
HP FLARE	HP FLARE	0.28	1.97E-04	-	-	2.11	1.29E-03	4.58	3.21E-03	1.01	7.02E-04	0.046	3.07E-05	0.047	3.27E-05	-	-	-	-
LP FLARE	LP FLARE	14.74	0.70	-	-	4.62	0.16	7.04	0.39	2.63	0.13	0.24	0.010	0.22	8.71E-03	-	-	-	-
FLARE-2	FLARE-2	3.58	1.59E-03	-	-	0.25	5.08E-04	0.38	7.51E-04	0.14	2.83E-04	0.013	2.57E-05	0.012	2.35E-05	-	-	-	-
AGI-FLARE	AGI-FLARE	0.59	10.03	-	-	7.59E-04	3.83E-05	0.45	0.023	0.12	6.14E-03	7.76E-03	3.88E-04	9.89E-03	4.94E-04	-	-	-	-
HP FLARE	FLARE-M	4.26E-06	5.00	-	-	4.26E-06	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	-	-	-
AGI-FLARE		0.59		-	-	7.59E-04		0.45		0.12		7.76E-03		9.89E-03		-	-	-	-
COMB-1	COMB-1	0.76	3.33	-	-	0.031	0.13	0.58	2.54	0.14	0.62	7.32E-03	0.032	7.72E-03	0.034	-	-	-	-
COMB-2	COMB-2	0.95	0.11	-	-	3.41	0.067	0.66	0.10	0.14	0.023	4.86E-03	1.12E-03	6.25E-03	1.00E-03	-	-	-	-
FUG	FUG	0.74	3.24	-	-	0.16	0.70	0.29	1.27	0.22	0.94	0.038	0.17	-	-	-	-	-	-
SSM	SSM	20.25	0.89	-	-	1.35	0.059	0.80	0.035	0.22	9.55E-03	0.22	9.64E-03	0.014	6.13E-04	-	-	-	-
Totals:		63.47	55.80	3.06	13.38	14.38	4.84	25.35	7.72	6.64	3.53	0.64	1.27	0.48	1.33	1.68	7.37	1.22	5.33

[4] Hourly emissions do not include flaring malfunction (FLARE-M) as they cannot occur at the same time as other flaring emissions. Flaring malfunction emissions are included in the annual emission totals.

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
ENG-1	Natural Gas	Residue Gas	972.48	11.52 Mscf/hr	100.90 MMscf/yr	0.56%	0.0%
ENG-2	Natural Gas	Residue Gas	972.48	12.14 MMscf/yr	106.31 MMscf/yr	0.44%	0.0%
ENG-3	Natural Gas	Residue Gas	972.48	12.14 Mscf/hr	106.31 MMscf/yr	0.44%	0.0%
ENG-4	Natural Gas	Residue Gas	972.48	12.14 MMscf/yr	106.31 MMscf/yr	0.44%	0.0%
ENG-5	Natural Gas	Residue Gas	972.48	11.52 Mscf/hr	100.90 MMscf/yr	0.56%	0.0%
ENG-6	Natural Gas	Residue Gas	972.48	11.52 MMscf/yr	100.90 MMscf/yr	0.56%	0.0%
ENG-7	Natural Gas	Residue Gas	972.48	12.14 Mscf/hr	106.31 MMscf/yr	0.44%	0.0%
ENG-8	Natural Gas	Residue Gas	972.48	17.81 MMscf/yr	156.05 MMscf/yr	1.55%	0.0%
ENG-9	Natural Gas	Residue Gas	972.48	17.81 Mscf/hr	156.05 MMscf/yr	1.55%	0.0%
ENG-10	Natural Gas	Residue Gas	972.48	17.81 MMscf/yr	156.05 MMscf/yr	1.55%	0.0%
ENG-11	Natural Gas	Residue Gas	972.48	17.81 Mscf/hr	156.05 MMscf/yr	1.55%	0.0%
ENG-12	Natural Gas	Residue Gas	972.48	17.81 MMscf/yr	156.05 MMscf/yr	1.55%	0.0%
ENG-13	Natural Gas	Residue Gas	972.48	17.81 Mscf/hr	156.05 MMscf/yr	1.55%	0.0%
ENG-14	Natural Gas	Residue Gas	972.48	17.81 MMscf/yr	156.05 MMscf/yr	1.55%	0.0%
ENG-15	Natural Gas	Residue Gas	972.48	17.81 Mscf/hr	156.05 MMscf/yr	1.55%	0.0%
ENG-16	Natural Gas	Residue Gas	972.48	17.81 MMscf/yr	156.05 MMscf/yr	1.55%	0.0%
ENG-17	Natural Gas	Residue Gas	972.48	17.81 Mscf/hr	156.05 MMscf/yr	1.55%	0.0%
ENG-18	Natural Gas	Residue Gas	972.48	17.81 MMscf/yr	156.05 MMscf/yr	1.55%	0.0%
ENG-19	Natural Gas	Residue Gas	972.48	17.81 Mscf/hr	156.05 MMscf/yr	1.55%	0.0%

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
ENG-20	Natural Gas	Residue Gas	972.48	25.60 MMscf/yr	224.23 MMscf/yr	0.74%	0.0%
ENG-21	Natural Gas	Residue Gas	972.48	25.60 Mscf/hr	224.23 MMscf/yr	0.74%	0.0%
ENG-22	Natural Gas	Residue Gas	972.48	11.52 MMscf/yr	100.90 MMscf/yr	0.56%	0.0%
RBL-1	Natural Gas	Residue Gas	972.48	1.54 Mscf/hr	13.51 MMscf/yr	N/A	0.0%
HO-1	Natural Gas	Residue Gas	972.48	27.15 MMscf/yr	237.81 MMscf/yr	N/A	0.0%
HO-2	Natural Gas	Residue Gas	972.48	5.21 Mscf/hr	45.67 MMscf/yr	N/A	0.0%
HO-3	Natural Gas	Residue Gas	972.48	3.60 MMscf/yr	31.53 MMscf/yr	N/A	0.0%
HO-4	Natural Gas	Residue Gas	972.48	20.42 Mscf/hr	178.90 MMscf/yr	N/A	0.0%
HT-1	Natural Gas	Residue Gas	972.48	10.80 MMscf/yr	94.58 MMscf/yr	N/A	0.0%
HT-2	Natural Gas	Residue Gas	972.48	1.03 Mscf/hr	9.01 MMscf/yr	N/A	0.0%
HP FLARE	Natural Gas	Residue Gas	972.48	0.10 MMscf/yr	0.88 MMscf/yr	N/A	0.0%
LP FLARE	Natural Gas	Residue Gas	972.48	0.19 Mscf/hr	1.66 MMscf/yr	N/A	0.0%
FLARE-2	Natural Gas	Residue Gas	972.48	0.10 MMscf/yr	0.88 MMscf/yr	N/A	0.0%
AGI-FLARE	Natural Gas	Residue Gas	972.48	0.06 Mscf/hr	0.48 MMscf/yr	N/A	0.0%
COMB-1	Natural Gas	Residue Gas	972.48	0.11 MMscf/yr	0.96 MMscf/yr	N/A	0.0%
COMB-2	Natural Gas	Residue Gas	972.48	0.10 Mscf/hr	0.88 MMscf/yr	N/A	0.0%

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

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

Tank No.	SCC Code	Material Name	Composition	Liquid Density (lb/gal)	Vapor Molecular Weight (lb/lb*mol)	Average Storage Conditions		Max Storage Conditions	
						Temperature (°F)	True Vapor Pressure (psia)	Temperature (°F)	True Vapor Pressure (psia)
TK-1	40400311	Condensate	Mixed Hydrocarbons	5.91	67.02	65.00	6.07	71.42	7.06
TK-2	40400311	Condensate	Mixed Hydrocarbons	5.91	67.02	65.00	6.07	71.42	7.06
TK-3	40400311	Condensate	Mixed Hydrocarbons	5.91	67.02	65.00	6.07	71.42	7.06
TK-4	40400311	Condensate	Mixed Hydrocarbons	5.91	67.02	65.00	6.07	71.42	7.06
TK-5	40400311	Condensate	Mixed Hydrocarbons	5.91	67.02	65.00	6.07	71.42	7.06
TK-6	40400311	Condensate	Mixed Hydrocarbons	5.91	67.02	65.00	6.07	71.42	7.06
TK-7	40400311	Condensate	Mixed Hydrocarbons	5.91	67.02	65.00	6.07	71.42	7.06
TK-8	40400311	Condensate	Mixed Hydrocarbons	5.91	67.02	65.00	6.07	71.42	7.06
PWTK-1	40400315	Produced Water	Mixed Hydrocarbons	8.04	52.57	65.00	6.49	71.42	7.26
PWTK-2	40400315	Produced Water	Mixed Hydrocarbons	8.04	52.57	65.00	6.49	71.42	7.26

Table 2-L: Tank Data

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

Tank No.	Date Installed	Materials Stored	Seal Type (refer to Table 2-LR below)	Roof Type (refer to Table 2-LR below)	Capacity		Diameter (M)	Vapor Space (M)	Color (from Table VI-C)		Paint Condition (from Table VI-C)	Annual Throughput (gal/yr)	Turn-overs (per year)
					(bbl)	(M^3)			Roof	Shell			
TK-1	2025	Condensate	N/A	FX	400	64	3.66	3.10	White	White	Good	11,823,073	87.97
TK-2	2025	Condensate	N/A	FX	400	64	3.66	3.10	White	White	Good	11,823,073	87.97
TK-3	2025	Condensate	N/A	FX	400	64	3.66	3.10	White	White	Good	11,823,073	87.97
TK-4	2025	Condensate	N/A	FX	400	64	3.66	3.10	White	White	Good	11,823,073	87.97
TK-5	2025	Condensate	N/A	FX	400	64	3.66	3.10	White	White	Good	11,823,073	87.97
TK-6	2025	Condensate	N/A	FX	400	64	3.66	3.10	White	White	Good	11,823,073	87.97
TK-7	2025	Condensate	N/A	FX	400	64	3.66	3.10	White	White	Good	11,823,073	87.97
TK-8	2025	Condensate	N/A	FX	400	64	3.66	3.10	White	White	Good	11,823,073	87.97
PWTK-1	2025	Produced Water	N/A	FX	400	64	3.66	3.10	White	White	Good	948,833	28.24
PWTK-2	2025	Produced Water	N/A	FX	400	64	3.66	3.10	White	White	Good	948,833	28.24

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 M^3 = 42.0 gal

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

Material Processed				Material Produced			
Description	**Chemical Composition**	**Phase (Gas, Liquid, or Solid)**	**Quantity (specify units)**	**Description**	**Chemical Composition**	**Phase**	**Quantity (specify units)**
Natural Gas	Mixed Hydrocarbons	Gas	120 MMSCFD	Natural Gas	Mixed Hydrocarbons	Gas	115 MMSCFD
				Condensate	Mixed Hydrocarbons	Liquid	771 MMSCFD
				Produced Water	Mixed Hydrocarbons	Liquid	62 MMSCFD
				Natural Gas Liquids	NGLs	Liquid	53,537 BPD

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.

Stack No.	Pollutant(s)	Manufacturer	Model No.	Serial No.	Sample Frequency	Averaging Time	Range	Sensitivity	Accuracy
N/A - No Continuous Emissions Measurement equipment at this facility.									

Table 2-O: Parametric Emissions Measurement Equipment

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

Unit No.	Parameter/Pollutant Measured	Location of Measurement	Unit of Measure	Acceptable Range	Frequency of Maintenance	Nature of Maintenance	Method of Recording	Averaging Time
N/A - No Parametric Emissions Measurement equipment at this facility.								

Table 2-P: Greenhouse Gas Emissions

Applications submitted under 20.2.70, 20.2.72, & 20.2.74 NMAC are required to complete this Table. Power plants, Title V major sources, and PSD major sources must report and calculate all GHG emissions for each unit. Applicants must report potential emission rates in short tons per year (see Section 6.a for assistance). Include GHG emissions during Startup, Shutdown, and Scheduled Maintenance in this table. For minor source facilities that are not power plants, are not Title V, or are not PSD, there are three options for reporting GHGs 1) report GHGs for each individual piece of equipment; 2) report all GHGs from a group of unit types, for example report all combustion source GHGs as a single unit and all venting GHG as a second separate unit; OR 3) check the following box ☐ By checking this box, the applicant acknowledges the total CO2e emissions are less than 75,000 tons per year.

		CO_2 ton/yr	N_2O ton/yr	CH_4 ton/yr	SF_6 ton/yr	PFC/HFC ton/yr[2]									Total GHG Mass Basis ton/yr[4]	Total CO_2e ton/yr[5]
Unit No.	**GWPs [1]**	**1**	**265**	**28**	**22,800**	**footnote 3**										
ENG-1	**mass GHG**	5,206.32	9.81E-03	0.098											5,206.42	
	CO_2e	5,206.32	2.60	2.75												5,211.66
ENG-2	**mass GHG**	5,485.62	0.010	0.10											5,485.74	
	CO_2e	5,485.62	2.74	2.89												5,491.26
ENG-3	**mass GHG**	5,485.62	0.010	0.10											5,485.74	
	CO_2e	5,485.62	2.74	2.89												5,491.26
ENG-4	**mass GHG**	5,485.62	0.010	0.10											5,485.74	
	CO_2e	5,485.62	2.74	2.89												5,491.26
ENG-5	**mass GHG**	5,206.32	9.81E-03	0.098											5,206.42	
	CO_2e	5,206.32	2.60	2.75												5,211.66
ENG-6	**mass GHG**	5,206.32	9.81E-03	0.098											5,206.42	
	CO_2e	5,206.32	2.60	2.75												5,211.66
ENG-7	**mass GHG**	5,485.62	0.010	0.10											5,485.74	
	CO_2e	5,485.62	2.74	2.89												5,491.26
ENG-8	**mass GHG**	8,052.00	0.015	0.15											8,052.17	
	CO_2e	8,052.00	4.02	4.25												8,060.27
ENG-9	**mass GHG**	8,052.00	0.015	0.15											8,052.17	
	CO_2e	8,052.00	4.02	4.25												8,060.27
ENG-10	**mass GHG**	8,052.00	0.015	0.15											8,052.17	
	CO_2e	8,052.00	4.02	4.25												8,060.27
ENG-11	**mass GHG**	8,052.00	0.015	0.15											8,052.17	
	CO_2e	8,052.00	4.02	4.25												8,060.27
ENG-12	**mass GHG**	8,052.00	0.015	0.15											8,052.17	
	CO_2e	8,052.00	4.02	4.25												8,060.27
ENG-13	**mass GHG**	8,052.00	0.015	0.15											8,052.17	
	CO_2e	8,052.00	4.02	4.25												8,060.27
ENG-14	**mass GHG**	8,052.00	0.015	0.15											8,052.17	
	CO_2e	8,052.00	4.02	4.25												8,060.27
ENG-15	**mass GHG**	8,052.00	0.015	0.15											8,052.17	
	CO2e	8,052.00	4.02	4.25												8,060.27
ENG-16	**mass GHG**	8,052.00	0.015	0.15											8,052.17	
	CO_2e	8,052.00	4.02	4.25												8,060.27
ENG-17	**mass GHG**	8,052.00	0.015	0.15											8,052.17	
	CO_2e	8,052.00	4.02	4.25												8,060.27
ENG-18	**mass GHG**	8,052.00	0.015	0.15											8,052.17	
	CO_2e	8,052.00	4.02	4.25												8,060.27
ENG-19	**mass GHG**	8,052.00	0.015	0.15											8,052.17	
	CO_2e	8,052.00	4.02	4.25												8,060.27
ENG-20	**mass GHG**	11,570.17	0.022	0.22											11,570.41	
	CO_2e	11,570.17	5.78	6.11												11,582.06
ENG-21	**mass GHG**	11,570.17	0.022	0.22											11,570.41	
	CO_2e	11,570.17	5.78	6.11												11,582.06
ENG-22	**mass GHG**	5,206.32	9.81E-03	0.098											5,206.42	
	CO_2e	5,206.32	2.60	2.75												5,211.66
RBL-1	**mass GHG**	697.21	1.31E-03	0.013											697.22	
	CO_2e	697.21	0.35	0.37												697.92

HO-1	**mass GHG**	12,270.87	0.023	0.23											12,271.12	
	CO_2e	12,270.87	6.13	6.48												12,283.47
HO-2	**mass GHG**	2,356.56	4.44E-03	0.044											2,356.61	
	CO_2e	2,356.56	1.18	1.24												2,358.98
HO-3	**mass GHG**	1,626.82	3.07E-03	0.031											1,626.85	
	CO_2e	1,626.82	0.81	0.86												1,628.49
HO-4	**mass GHG**	9,231.04	0.017	0.17											9,231.23	
	CO2e	9,231.04	4.61	4.87												9,240.52
HT-1	**mass GHG**	4,880.46	9.20E-03	0.092											4,880.56	
	CO_2e	4,880.46	2.44	2.58												4,885.47
HT-2	**mass GHG**	464.81	8.76E-04	8.76E-03											464.82	
	CO_2e	464.81	0.23	0.25												465.28
LOAD	**mass GHG**	3.46E-08	-	1.43E-10											3.47E-08	
	CO_2e	3.46E-08	-	4.01E-09												3.86E-08
PW-LOAD	**mass GHG**	3.62E-08	-	8.64E-03											8.64E-03	
	CO_2e	3.62E-08	-	0.24												0.24
HP-FLARE	**mass GHG**	0.18	1.17E-04	0.46											0.65	
	CO_2e	0.18	0.031	12.98												13.20
LP-FLARE	**mass GHG**	123.83	7.57E-03	10.51											134.35	
	CO_2e	123.83	2.01	294.39												420.23
FLARE-2	**mass GHG**	1.51	1.21E-04	0.43											1.94	
	CO_2e	1.51	0.032	11.92												13.46
AGI-FLARE	**mass GHG**	1,143.62	5.13E-03	20.41											1,164.03	
	CO_2e	1,143.62	1.36	571.46												1,716.43
FLARE-M	**mass GHG**	1,551.33	7.11E-03	1.50											1,552.83	
	CO_2e	1,551.33	1.88	41.94												1,595.15
COMB-1	**mass GHG**	555.11	1.05E-03	0.010											555.12	
	CO_2e	555.11	0.28	0.29												555.68
COMB-2	**mass GHG**	110.38	3.25E-04	3.25E-03											110.39	
	CO_2e	110.38	0.086	0.091												110.56
FUG	**mass GHG**	1.55	-	19.94											21.49	
	CO_2e	1.55	-	558.19												559.75
SSM	**mass GHG**	0.13	-	63.50											63.63	
	CO2e	0.13	-	1,778.02												1,778.15
Total	**mass GHG**	197,547.57	0.39	120.43											197,668.38	
	CO_2e	197,547.57	102.60	3,371.93												201,022.10

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

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

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

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

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

Section 3

Application Summary

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

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

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

Application Summary

Lea Midstream, LLC (Producers) is submitting an initial NSR application pursuant to 20.2.72.200.A.(1) NMAC for The Dude Processing Plant (The Dude), located 12.3 miles northwest of Monument, New Mexico in Lea County. The Dude is an existing facility currently operating under GCP-O&G Permit No. 10342M1. With this application, Producers requests to update facility throughput, as well as the following:

The following units exist at the facility:

- Three (3) 1340 hp Caterpillar G3516 LE compressor engines (ENG-1, ENG-5, ENG-6);
- Four (4) 1775 hp Caterpillar G3606 LE compressor engines (ENG-2 to ENG-4, ENG-7);
- Four (4) 2500 hp Waukesha P9394GSI S5 generator engines (ENG-8 to ENG-11;
- One (2) dehydrator reboiler (RBL-1);
- Two (2) hot oil heaters (HO-1 & HO-2);
- Two (2) regen gas heaters (HT-1 & HT-2);
- One (1) sour water stripper (HT-2);
- One (1) TEG dehydrator (DEHY-1);
- One (1) amine treating unit (AMINE-1);
- Two (2) combustors (COMB-1 & COMB-2);
- Truck loading emissions (LOAD & PW-LOAD);
- Facility fugitive emissions (FUG-1); and
- Vented startup, shutdown, and maintenance emissions (SSM)

The following units are new at the facility:

- Eight (8) 2500 hp Waukesha P9394GSI S5 generator engines (ENG-12 to ENG-19);
- Two (2) 3750 hp Caterpillar G3612 A4 compressor engines (ENG-20 & ENG-21);
- One (1) 1340 hp Caterpillar G3516 LE compressor engine (ENG-22);
- One (1) flare (FLARE-2);
- One (1) emergency AGI flare (AGI-FLARE);
- One (1) hot oil heater (HO-4); and
- Malfunction Flaring (FLARE-M).

The following units will be modified at the facility:

- Eight (8) condensate storage tanks (TK-1 to TK-8);
- Two (2) 500 bbl produced water storage tanks (PWTK-1 & PWTK-2);
- One (1) high-pressure SSM flare (HP-FLARE); and

- One (1) low-pressure process flare (LP-FLARE).

The following units will be removed from the facility:

- Two (2) produced water tanks (PWTK-3 & PWTK-4).

The following units will be replaced at the facility:

- One (1) stabilizer reboiler (RBL-2) is being replaced with one (1) stabilizer hot oil heater (HO-3).

The proposed modifications to the facility will result in facility-wide emissions surpassing the 95 tpy threshold for GCP-O&G permits. As a result, an initial NSR permit will be required.

Additionally, unpaved haul road emissions (HAUL) are exempt per 20.2.72.20.B(5) NMAC. Various small storage tanks are exempt per 20.2.72.202.B(2): 490-gallon lube oil tank (TK-Lube), 100 bbl lube oil tank (TK-Lube-2), 490 gallon antifreeze tank (TK-Antifreeze), 100 bbl antifreeze tank (TK-Antifreeze-2), 100 bbl amine tank (TK-Amine), 3,000 gallon TEG tank (TK-TEG), and 3,000 gallon RO water tank (TK-RO). Ten (10) compressors (C-1 to C-10) associated with ENG-1 to ENG-7 and ENG-20 to ENG-22 and three (3) electric acid gas compressors (EC-1 to EC-3) are listed in this permit application.

Process Summary

High-pressure compressed gas from the compressor stations owned by Producers is sent to the facility inlet, where condensate is separated and stabilized prior to being routed to the condensate storage tanks (TK-1 through TK-8). Overhead emissions from the stabilizer are routed to a compressor engine (ENG-22), where it is then routed back to the inlet prior to the inlet slug catcher. The condensate stabilizer will be supported by a hot oil heater (HO-3) to maintain proper operating temperatures. Emissions from TK-1 to TK-8 are routed to a vapor recovery unit (VRU-1), which directs captured vapors to the sales gas line during normal operations. During periods of VRU downtime (assumed at 438 hours per year), tank vapors are routed to the tank and truck combustor (COMB-2), which achieves 100% capture efficiency with a destruction removal efficiency (DRE) of 98%. Condensate is truck loaded offsite (LOAD), with vapors being routed to the tank and truck combustor (COMB-2) with 70% capture efficiency and 98% DRE.

Sour compressed gas is sent to the amine sweetening unit (AMINE-1). The amine unit is installed at the facility to reduce H_2S in the wet gas stream. Vent gas generated by the flash tank will be injected into the fuel line and is therefore not a source of emissions. Acid gas from the regenerator is controlled by acid gas injection (AGI-1). Acid Gas is compressed by two (2) of the three (3) electric acid gas compressors (EC-1 to EC-3). The third electric acid gas compressor is redundant. Four (4) AGI Well Generator Engines (ENG-16 through ENG-19) provide power to the AGI Well system. When AGI-1 is down, gas is sent to the acid gas flare (AGI-FLARE) with 100% capture efficiency and 98% DRE. The amine will have a regeneration heater (HT-1), a sour water stripper (HT-2), and an amine hot oil heater (HO-1).

Once the gas is sweetened, it passes through a glycol dehydrator (DEHY-1) to remove entrained water. The emissions from the flash tank overheads will be routed to a low-pressure flare (LP FLARE) with a DRE of 98%. The BTEX condenser is controlled with a 98% DRE by the BTEX combustor (COMB-1). The dehydrator will be equipped with a TEG reboiler (RBL-1).

Water generated during the dehydration process is routed to the produced water tanks (PWTK-1 and PWTK-2). Emissions from the produced water tanks—including flashing, working, and breathing losses—are routed to the vapor recovery unit (VRU-1), which directs captured vapors to the sales line under normal operating conditions. During periods of VRU downtime (assumed at 438 hours per year), vapors are redirected to the tank and truck combustor (COMB-2), which operates with a 100% vapor capture efficiency and achieves a 98% destruction removal efficiency (DRE). Additionally, captured emissions from produced water truck loading operations (PW-LOAD) are routed to COMB-2, which provides 70% capture efficiency and 98% DRE.

Dry gas exiting the dehydration system, along with recovered gas from the vapor recovery unit (VRU), is routed to a gas distribution header where it is split into two parallel processing trains based on volumetric flow requirements.

Train 1 receives approximately 80 MMSCFD of dry gas. The gas stream is directed to the cryogenic unit (CRYO-1), where low-temperature separation is used to recover natural gas liquids (NGLs). CRYO-1 operates as a closed-loop process, with all process gas fully contained and routed to downstream equipment. The cryogenic system does not vent to the atmosphere and is not a direct source of emissions. Following NGL recovery, the residual gas is sent to compressor engines (ENG-1 through ENG-7) to increase pressure to meet pipeline specifications. The gas is then routed to the sales pipeline. The cryogenic unit will be supported by a hot oil heater (HO-2) to maintain proper operating temperatures.

Train 2 receives approximately 40 MMSCFD of dry gas. The gas stream is directed to the cryogenic unit (CRYO-2), where low-temperature separation is used to recover natural gas liquids (NGLs). CRYO-2 operates as a closed-loop process, with all process gas fully contained and routed to downstream equipment. The cryogenic system does not vent to the atmosphere and is not a direct source of emissions. Following NGL recovery, the residual gas is sent to compressor engines (ENG-20 and ENG-21) to increase pressure to meet pipeline specifications. The cryogenic unit will be supported by a hot oil heater (HO-4) to maintain proper operating temperatures.

This parallel train configuration allows for optimized handling of variable gas flow rates while maintaining cryogenic unit efficiency and ensuring that all processed gas meets pipeline sales specifications.

Each engine at this site will be individually authorized to operate continuously at the design maximum capacity horsepower listed in the application. ENG-1 through ENG-7 and ENG-22 are equipped with oxidative catalysts to control CO, HCHO, and VOC emissions. ENG-20 and ENG-21 are equipped with oxidative catalysts to control NO_X, CO and HCHO. ENG-8 through ENG-19 will be equipped with oxidative catalysts to control NO_X, CO, HCHO, and VOC emissions. All emission values listed in the application forms for the engines correspond to 100% load at maximum engine speed.

Emissions will also result from associated fugitives (FUG), the pilot and purge for the High-Pressure Emergency Flare (HP FLARE), the train 2 flare (FLARE 2), the AGI flare (AGI-FLARE), Startup, Shutdown, and Maintenance (SSM) and Malfunction Flaring (FLARE-M).

Startup, Shutdown, and Maintenance (SSM)

SSM activities at this facility include compressor blowdowns, VRU blowdowns, dehydrator blowdowns, filter coalescer blowdowns, condensate and produced water tank maintenance, pressure safety valve blowdowns, and pigging, which result from maintenance activities per manufacturer recommendations or other preventative measures.

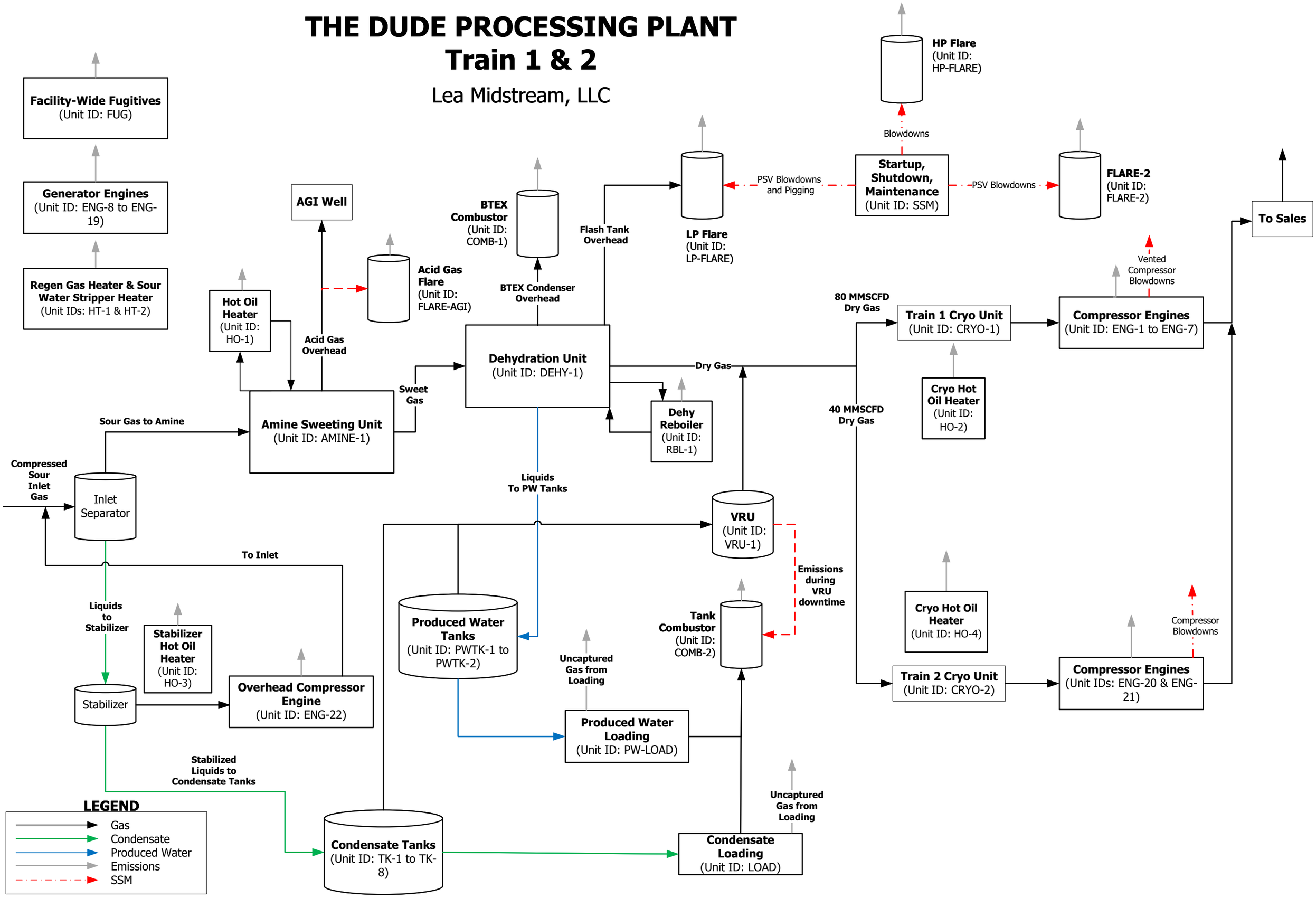
Section 4

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 is attached to this application.

THE DUDE PROCESSING PLANT
Train 1 & 2
Lea Midstream, LLC



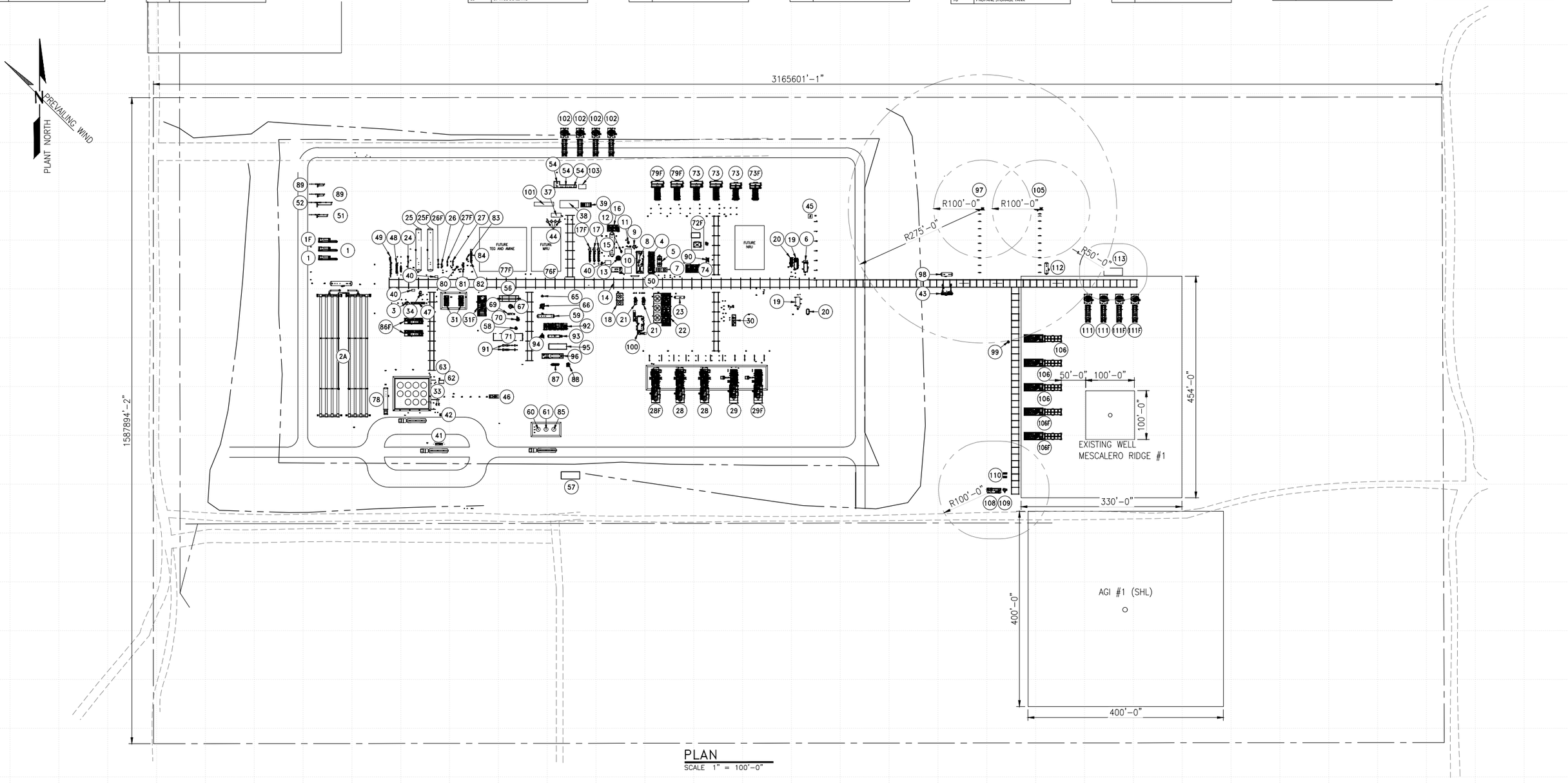
Section 5

Plot Plan Drawn To Scale

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

A plot plan is attached to this application.

ITEM	EQUIPMENT LIST DESCRIPTION
1	INLET RECIEVER
1F	INLET RECIEVER (FUTURE)
2	SLUG CATCHER
2A	SLUG CATCHER FINGERS
3	INLET SEPARATOR
4	DEHY SKID
5	DEHYDRATORS
6	REGEN GAS HEATER
7	REGEN GAS COOLER
8	REFRIGERATION SKID
9	COLD SEPARATOR
10	CRYO SKID
11	INLET GAS EXCHANGER
12	REBOILER
13	DEMETHANIZER TOWER
14	EXPANDER/COMPRESSOR SKID
15	PRODUCT SURGE TANK
16	BOOSTER PUMPS SKID
17	PRODUCT PIPELINE PUMP
17F	PRODUCT PIPELINE PUMP (FUTURE)
18	BOOSTER COMPRESSOR COOLER
19	HOT OIL HEATER
20	HOT OIL PUMP SKID
21	REFRIGERANT COMPRESSOR
22	REFRIGERANT CONDENSER
23	REFRIGERANT ACCUMULATOR
24	CONDENSATE PREHEATER
25	CONDENSATE FEED TANK
25F	CONDENSATE FEED TANK (FUTURE)
26	CONDENSATE FILTERS
26F	CONDENSATE FILTERS (FUTURE)
27	CONDENSATE WATER COALESCER
27F	CONDENSATE WATER COALESCER (FUTURE)
28	NRU FEED GAS COMPRESSOR
28F	NRU FEED GAS COMPRESSOR (FUTURE)
29	RESIDUE COMPRESSOR
29F	RESIDUE COMPRESSOR (FUTURE)
30	RES. GAS COALESCER
31	OVERHEAD COMPRESSOR
31F	OVERHEAD COMPRESSOR (FUTURE)
32	CONDENSATE STORAGE TANKS
32F	CONDENSATE STORAGE TANKS (FUTURE)
33	CONDENSATE TRANSFER PUMPS
34	PRODUCED WATER FLASH TANK
35	PRODUCED WATER STORAGE TANKS
36	SLOP OIL STORAGE TANK
37	INSTRUMENT AIR PACKAGE
38	MCC BUILDING
39	LV MCC BUILDING
40	GAS CHROMATOGRAPH
41	COND. LACT/ TRUCK LOADING
42	RAW COND. TRUCK LOADING
43	FLARE KO DRUM
44	INSTRUMENT AIR RECEIVERS
45	FLARE STACK
46	COMBUSTER SKID
47	INLET METER SKID
48	RESIDUE METER SKID
49	NGL METER
50	FUEL GAS METER
51	NGL LAUNCHER
52	RESIDUE GAS LAUNCHER
53	NOT USED
54	4160V TRANSFORMERS
55	NOT USED
56	GAS/GAS EXCHANGER
57	CONTROL ROOM
58	GLYCOL SEPARATOR
59	AMINE FLASH TANK
60	AMINE WATER STORAGE TANK
61	RO WATER TANK
62	VRU
63	VRU COOLER
64	NOT USED
65	AMINE INLET COALESCING FILTER
66	AMINE CONTACTOR
67	AMINE OUTLET SCRUBBER
68	NOT USED
69	GLYCOL INLET COALESCING FILTER
70	GLYCOL CONTACTOR
71	AMINE SOLUTION COOLER
72F	NRU (FUTURE)
73	RESIDUE BOOSTER COMPRESSORS
74	MEMBRANE PACKAGE
75F	NRU (FUTURE)
76F	MRU (FUTURE)
77F	AMINE & TEG (FUTURE)
78	PROPANE STORAGE TANK
79F	MEMBRANE COMPRESSION (FUTURE)
80	CHARCOAL/ CLAY FILTER
81	CONDENSATE SOCK FILTER
82	CONDENSATE FLASH TANK
83	CONDENSATE BOOSTER PUMP
84	CONDENSATE PIPELINE PUMP
85	GLYCOL TANK
86F	STABILIZER (FUTURE)
87	BTEX
88	BTEX COMBUSTOR
89	FUEL GAS LAUNCHER
90	WARM GAS EXCHANGER
91	HP AMINE PUMPS
92	L/R EXCHANGER
93	AMINE REBOILER
94	AMINE STILL/REFLUX ACCUMULATOR
95	REFLUX CONDENSER
96	TEG REGEN
97	HP FLARE STACK
98	HP FLARE KNOCKOUT DRUM
99	ACID GAS KNOCKOUT DRUM
100	REFRIG. VFD BUILDING
101	AMINE MCC BUILDING
102	9394 GENERATORS
103	SWITCH GEAR
104	GENERATOR
105	AGI FLARE
106	ACID GAS COMPRESSOR
106F	ACID GAS COMPRESSOR (FUTURE)
108	SOUR WATER FILTER
109	SOUR WATER STRIPPER DRUM
110	SOUR WATER BOOSTER PUMPS
111	AGI GENERATOR
111F	AGI GENERATOR (FUTURE)
112	AGI FLARE KNOCK OUT
113	AGI MCC



PLAN
SCALE 1" = 100'-0"

NOTES:

NO.	DATE	REVISION DESCRIPTION	BY	FCE	CLIENT
D	06/19/25	ISSUED FOR REVIEW	DK	SS	
C	06/11/25	ISSUED FOR REVIEW	DK	SS	
B	06/09/25	ISSUED FOR REVIEW	DK	SS	
A	06/06/25	ISSUED FOR REVIEW	DK	SS	

KAHUNA
11400 Westmoor Cir. Ste. 325
Westminster, CO 80021
303.451.7374
TX REG. NO. 8419

PRODUCERS MIDSTREAM

CLIENT : PRODUCERS MIDSTREAM, LP
PROJECT : THE DUDE 60MM CRYO FACILITY
TITLE : PLOT PLAN
EQUIPMENT AND GRADE ELEVATIONS

DRAWN	CHECKED	SCALE	DATE	JOB NO.	DRAWING NO.	SHEET NO.	
DK	SS	1"=100'-0"	06/02/25	PHE241007	ME-GAL-0201	1 OF 1	D

EQUIPMENT LEGEND	
MARK	DESCRIPTION
1	INLET GAS SEPERATOR
2	DEHY/REGEN SKID
3	DEHYDRATION ADSORBER
4	DEMETHANIZER/EXPANDER VALVE SKID
5	GAS-GAS EXCHANGER/REFLUX CONDENSER
6	DEMETHANIZER/COLD SEPERATOR
7	DEMETHANIZER BOTTOM/DEMETHANIZER SIDE REBOILER
8	EXPANDER/COMPRESSOR SKID
9	EXPANDER/COMPRESSOR DISCHARGE COOLER
10	DEMETHANIZED SURGE TANK
11	PRODUCT PIPELINE PUMP
11F	PRODUCT PIPELINE PUMP (FUTURE)
12	RESIDUE GAS COMPRESSOR
12F	RESIDUE GAS COMPRESSOR (FUTURE)

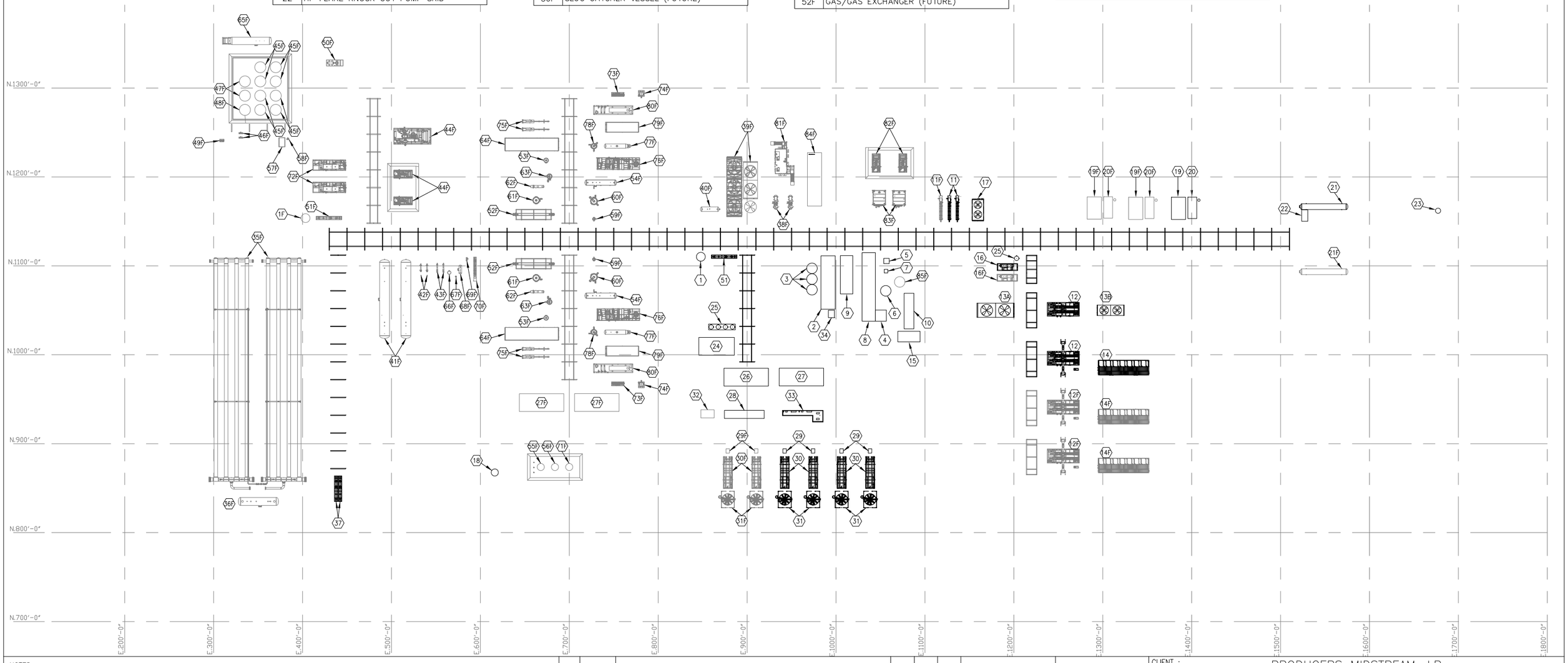
13A	RESIDUE GAS COMPRESSOR PROCESS COOLER
13B	RESIDUE GAS COMPRESSOR AUX. COOLER
14	RESIDUE GAS COMPRESSOR PROCESS/AUX. COOLER
14F	RESIDUE GAS COMPRESSOR PROCESS/AUX. COOLER(FUTURE)
15	BOOSTER PUMP SKID
16	RESIDUE GAS FILTER/COALESER
16F	RESIDUE GAS FILTER/COALESER (FUTURE)
17	NGL TRIM COOLER
18	SLOP OIL TANK
19	HOT OIL PUMP SKID
19F	HOT OIL PUMP SKID (FUTURE)
20	HOT OIL PUMP HEATER
20F	HOT OIL PUMP HEATER (FUTURE)
21	HP FLARE KNOCK OUT DRUM
21F	LP FLARE KNOCK OUT DRUM (FUTURE)
22	HP FLARE KNOCK OUT PUMP SKID

23	UTILITY FLARE
24	INSTRUMENT AIR COMPRESSOR PACKAGE
25	STARTING AIR TANK
26	MV MCC
27	LV MCC
27F	LV MCC (FUTURE)
28	MV SWITCHGEAR
29	STEP UP XFRM
29F	STEP UP XFRM (FUTURE)
30	GENERATOR
30F	GENERATOR (FUTURE)
31	GENERATOR COOLERS
31F	GENERATOR COOLERS (FUTURE)
32	UTILITY XFRM
33	XFRM PAD
34	METHANOL TANKS
35F	SLUG CATCHER FINGERS (FUTURE)
36F	SLUG CATCHER VESSEL (FUTURE)

37	METER
38F	REFRIGERANT COMPRESSOR (FUTURE)
39F	REFRIGERANT CONDENSER (FUTURE)
40F	REFRIGERANT ACCUMULATOR (FUTURE)
41F	CONDENSATE FEED TANK (FUTURE)
42F	CONDENSATE FILTERS (FUTURE)
43F	CONDENSATE WATER COALESCER (FUTURE)
44F	OVERHEAD COMPRESSOR (FUTURE)
45F	CONDENSATE STORAGE TANKS (FUTURE)
46F	CONDENSATE TRANSFER PUMPS (FUTURE)
47F	PRODUCED WATER STORAGE TANKS (FUTURE)
48F	SLOP OIL STORAGE TANK (FUTURE)
49F	RAW COND. TRUCK LOADING (FUTURE)
50F	COMBUSTER SKID (FUTURE)
51	INLET METER SKID
51F	INLET METER SKID (FUTURE)
52F	GAS/GAS EXCHANGER (FUTURE)

53F	GLYCOL SEPARATOR (FUTURE)
54F	AMINE FLASH TANK (FUTURE)
55F	ANIME WATER STORAGE TANK (FUTURE)
56F	RO WATER TANK (FUTURE)
57F	VRU (FUTURE)
58F	VRU COOLER (FUTURE)
59F	AMINE INLET COALESCING FILTER (FUTURE)
60F	AMINE CONTACTOR (FUTURE)
61F	AMINE OUTLET SCRUBBER (FUTURE)
62F	GLYCOL INLET COALESCING FILTER (FUTURE)
63F	GLYCOL CONTACTOR (FUTURE)
64F	AMINE SOLUTION COOLER (FUTURE)
65F	PROPANE STORAGE TANK (FUTURE)
66F	CHARCOAL/ CLAY FILTER (FUTURE)
67F	CONDENSATE SOCK FILTER (FUTURE)
68F	CONDENSATE FLASH TANK (FUTURE)
69F	CONDENSATE BOOSTER PUMP (FUTURE)

70F	CONDENSATE PIPELINE PUMP (FUTURE)
71F	GLYCOL TANK (FUTURE)
72F	STABILIZER (FUTURE)
73F	BTEX (FUTURE)
74F	BTEX COMBUSTOR (FUTURE)
75F	HP AMINE PUMPS (FUTURE)
76F	AMINE SKID (FUTURE)
77F	AMINE REBOILER (FUTURE)
78F	AMINE STILL/REFLUX ACCUMULATOR (FUTURE)
79F	REFLUX CONDENSER (FUTURE)
80F	TEG REGEN (FUTURE)
81F	REFRIG. VFD BUILDING (FUTURE)
82F	COLD BOX COMPRESSORS (FUTURE)
83F	COLD BOX (FUTURE)
84F	REFRIG. CHILLER SKID (FUTURE)
85F	COLD SEPERATOR (FUTURE)



NOTES:

NO.	DATE	REVISION DESCRIPTION	BY	FCE	CLIENT
A	08/07/25	ISSUED FOR APPROVAL	JWU	EF	

F&C ENGINEERS
TX REG. NO. 8419

PRODUCERS MIDSTREAM

CLIENT : PRODUCERS MIDSTREAM, LP
PROJECT : HIS DUDENESS GAS PROCESSING PLANT
TITLE : PLOT PLAN

DRAWN	CHECKED	SCALE	DATE	JOB NO.	DRAWING NO.	SHEET NO.
JWU	GA	NTS	07/24/25	PR0250402	ME-GAL-0200	1 OF 1

A

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.

Amine Treating Unit (Unit ID: AMINE-1)
VOC, HAP, and H_2S emissions are calculated using BR&E ProMax. The flash tank gas overheads are injected back into the fuel line and are not a source of emissions. The regenerator acid gas emissions are routed to the acid gas flare (Unit ID: AGI-FLARE) with a 100% capture efficiency and a 98% destruction efficiency during AGI-1 downtime. Controlled emissions are represented at the flare.

Amine Heaters (Unit IDs: HT-1 and HT-2)
NO_x, CO, VOC, PM, and HAP emissions were calculated using AP-42 Section 1.4 emission factors for external natural gas combustion sources in Tables 1.4-1, 1.4-2, and 1.4-3. As a conservative measure, it was assumed that PM (Total) = PM_{10} = $PM_{2.5}$. SO_2 was calculated using an assumed fuel sulfur content of 0.25 gr S/100 scf and a 100% conversion of elemental sulfur into SO_2. Greenhouse gas emissions were estimated using emission factors from 40 CFR Part 98 Tables C-1 and C-2.

Hot Oil Heaters (Unit IDs: HO-1 through HO-4)
For HO-1, NO_x and CO was calculated using the manufacturer specification sheet. For HO-, HO-3, and HO-4, NO_x and CO was calculated using the emission factor specified in AP-42 Section 1.4 for external gas combustion sources in Table 1.4-1 and 1.4-2. For all hot oil heaters, VOC, PM, and HAP emissions were calculated using AP-42 Section 1.4 emission factors for external natural gas combustion sources in Tables 1.4-1, 1.4-2, and 1.4-3. As a conservative measure, it was assumed that PM(Total) = PM_{10} = $PM_{2.5}$. SO_2 was calculated using an assumed fuel sulfur content of 0.25 gr S/100 scf and a 100% conversion of elemental sulfur into SO_2. Greenhouse gas emissions were estimated using emission factors from 40 CFR Part 98 Tables C-1 and C-2.

TEG Dehydrators (Unit ID: DEHY-1)
VOC, HAP, and H_2S emissions are calculated using BR&E ProMax. The flash gas overheads are routed to the low-pressure flare (LP-FLARE) with 100% capture efficiency and 98% destruction efficiency. BTEX condenser overheads are routed to the BTEX combustor (COMB-1) with 100% capture efficiency and a 98% destruction efficiency. Controlled emissions are represented at the flare.

Dehydrator Reboiler (Unit ID: RBL-1)
NO_x, CO, VOC, PM, and HAP emissions were calculated using AP-42 Section 1.4 emission factors for external natural gas combustion sources in Tables 1.4-1, 1.4-2, and 1.4-3. As a conservative measure, it was assumed that PM(Total) = PM_{10} = $PM_{2.5}$. SO_2 was calculated using an assumed fuel sulfur content of 0.25 gr S/100 scf and a 100% conversion of elemental sulfur into SO_2. Greenhouse gas emissions were estimated using emission factors from 40 CFR Part 98 Tables C-1 and C-2.

Condensate Storage Tanks (Unit IDs: TK-1 to TK-8)
The condensate storage tanks receive liquids from the stabilizer. VOC, H_2S, and HAP emissions are calculated using BR&E ProMax. Flash, working, and breathing emissions are controlled and are sent to the vapor recovery unit (VRU-1) with 100% capture efficiency. During VRU downtime, emissions are sent to the loading combustor (COMB-2) with 100% capture efficiency and 98% destruction efficiency.

Produced Water Storage Tanks (Unit IDs: PWTK-1 to PWTK-2)
The produced water storage tanks receive liquids from the dehydration process. VOC, H_2S, and HAP emissions are calculated using BR&E ProMax. Flash, working, and breathing emissions are controlled and are sent to the vapor recovery unit (VRU-1) with 100% capture efficiency. During VRU downtime, emissions are sent to the loading combustor (COMB-2) with 100% capture efficiency and 98% destruction efficiency.

Loading (Unit IDs: LOAD and PW-LOAD)
VOC, H_2S, and HAP emissions are calculated using BR&E ProMax. Loading emissions are controlled, with 70% of emissions being captured and routed to the loading combustor (COMB-2) with 98% destruction efficiency.

Acid Gas Flare (Unit ID: AGI-FLARE)
The acid gas flare controls the acid gas overheads stream from AMINE-1. Fuel Gas is used as assist gas to increase the heating value of the process streams to 617.88 Btu/scf, as specified by the manufacturer. VOC and HAP emissions are calculated using BR&E ProMax for the streams routed to flare, and with a 98% DRE determined by manufacturer specifications. H_2S emissions are calculated using ProMax and 100% conversion to SO_2. SO_2 was calculated using a fuel sulfur content of 0.25 gr S/100 scf

and 100% conversion from elemental sulfur to SO_2. NO_x and CO emissions were calculated using AP-42 Section 13.5 emission factors for industrial flares in Table 13.5-1. Greenhouse gas emissions were estimated using the methodology outlined in 40 CFR §98.233(n).

The flare pilot and purge operations will always be active, but the flare will control amine acid gas when the acid gas injection well is unavailable. To flare acid gas, the flare requires assist gas to reach the heating value of the process streams at 617.88 Btu/scf.

Low-Pressure Flare (Unit ID: LP FLARE)
The low-pressure flare controls the flash tank overhead stream from DEHY-1. VOC and HAP emissions are calculated using BR&E ProMax for the streams routed to the flare, and with a 98% DRE determined by manufacturer specifications. H_2S emissions are calculated using ProMax and 100% conversion to SO_2. SO_2 was calculated using a fuel sulfur content of 0.25 gr S/100 scf and 100% conversion from elemental sulfur to SO_2. NO_x and CO emissions were calculated using AP-42 Section 13.5 emission factors for industrial flares in Table 13.5-1. Greenhouse gas emissions were estimated using the methodology outlined in 40 CFR §98.233(n).

High-Pressure Flare (Unit ID: HP FLARE)
The high-pressure flare is used for flaring during startup, shutdown, and maintenance events at train 1. The only steady state conditions associated with the flare are from the pilot and purge streams. SSM from the train is due to various maintenance activities throughout the facility. These maintenance activities include compressor blowdowns, VRU blowdowns, dehydrator blowdowns, filter coalescer blowdowns, and pigging, which result from maintenance activities per manufacturer recommendations or other preventative measures. VOC and HAP emissions are calculated using BR&E ProMax for the streams routed to flare, and with a 98% DRE determined by manufacturer specifications. H_2S emissions are calculated using ProMax and 100% conversion to SO_2. SO_2 was calculated using a fuel sulfur content of 0.25 gr S/100 scf and 100% conversion from elemental sulfur to SO_2. NO_x and CO emissions were calculated using AP-42 Section 13.5 emission factors for industrial flares in Table 13.5-1. Greenhouse gas emissions were estimated using the methodology outlined in 40 CFR §98.233(n).

Train 2 Low-Pressure Flare (Unit ID: FLARE-2)
The low-pressure flare controls emissions startup, shutdown, and maintenance emissions at train 2. The only steady state conditions associated with the flare are from the pilot and purge streams. SSM from the train is due to Pressure Safety Valve (PSV) blowdowns at train 2. VOC and HAP emissions are calculated using BR&E ProMax for the streams routed to flare, and with a 98% DRE determined by manufacturer specifications. H_2S emissions are calculated using ProMax and 100% conversion to SO_2. SO_2 was calculated using a fuel sulfur content of 0.25 gr S/100 scf and 100% conversion from elemental sulfur to SO_2. NO_x and CO emissions were calculated using AP-42 Section 13.5 emission factors for industrial flares in Table 13.5-1. Greenhouse gas emissions were estimated using the methodology outlined in 40 CFR §98.233(n).

Fugitives (Unit ID: FUG-01)
Facility-wide fugitive emissions were calculated using emission factors from Table 2-4 of the EPA Protocol for Equipment Leak Emission Estimates (November 1995, EPA 452/R-95-017). Component counts were based on a similar facility design. The VOC, HAPs, and H_2S weight percentages for gas service were conservatively obtained from the inlet gas analysis. For light oil service, the weight percentages were derived from the Liquid to Slop Tank stream from BR&E ProMax.

Haul Road Emissions (Unit HAUL) (Exempt pursuant to 20.2.72.202.B.(5) NMAC)
Unpaved haul road emissions were estimated based on Equation 1a of AP-42 Section 13.2.2-4 and Equation 2 of AP-42 Section 13.2.2.3 (November 2006). Particle size multipliers and constants for these equations are found in AP-42 Table 13.2.2-2. Silt content and annual wet days are referenced from the New Mexico default allowed by NMED without additional justification. These emissions are exempt under 20.2.72.202.B.(5) NMAC and emission calculations are included in this application as a reference.

Startup, Shutdown, and Maintenance (Unit SSM)
Startup, shutdown, and maintenance events consist of Compressor Blowdowns, VRU Blowdowns, Dehydrator Blowdowns, Filter Coalescer Blowdowns, Condensate and Produced Water Tank Maintenance, Pressure Safety Valve (PSV) Blowdowns, and Pigging. Emissions for VOC, HAP, and H_2S were calculated using ProMax and mass balance.

Compressor Blowdowns, VRU Blowdowns, and Dehy Blowdowns represent the volume of gas blown down per compressor at the facility. The number of events represent the number of blowdowns per compressor per year.

Filter Coalescer Blowdowns events represent a monthly change of the facility's four (4) 24" x 8'2" coalescer filters for a total of 16 events per year lasting 1 hour per event. The volume of gas per blowdown per filter is representative of the filter size.

Pressure Safety Valve (PSV) Blowdowns represent the volume of gas blown down during plant startup and shutdown. The volume of gas is representative of the valves being blown down at each train.

Condensate and Produced Water Tank Maintenance events represent the activity in which the tank is being degassed to depressurize a tank. The volume of gas per blowdown is representative of the vapor space available to be degassed within a tank based on operating parameters. Emissions from Condensate and Produced Water Tank Maintenance are controlled by the VRU. This activity will not occur during VRU downtime.

Pigging events represent the activity in which facility pipelines are being cleaned through the use of pig launchers and receivers.

Section 6.a

Green House Gas Emissions

(Submitting under 20.2.70, 20.2.72 20.2.74 NMAC)

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

Calculating GHG Emissions:

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

Sources for Calculating GHG Emissions:

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

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

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

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

Lea Midstream, Inc - The Dude Processing Plant

Emission Calculation Inputs

Site-Wide		
Description	**Value**	**Unit**
Gas Throughput	120	MMscf/day
Annual Operating Hours	8,760	hr
Daily Operating Hours	24	hr
Site Elevation	3,863	ft MSL

Fuel Gas			
	Value	**Unit**	**Notes**
Fuel Heat Value (Gross)	972.48	Btu/scf	Fuel Gas Analysis
Fuel Heat Value (Net)	876.10	Btu/scf	Fuel Gas Analysis
Fuel H_2S Content	0.0	ppmv	Fuel Gas Analysis
	0.0	gr H_2S / 100 scf	Converted
Fuel Sulfur Content	0.25	gr S / 100 scf	Engineering Estimate

Engine Input Information			
	Value	**Unit**	**Notes**
Units:	ENG-1, ENG-5 & ENG-6, ENG-22		
Description:	Caterpillar G3516LE 1340 hp Compressor Engine		
Rating:	1340	hp	
Fuel Usage:	8359	Btu/hp-hr	
Units:	ENG-2 through ENG-4, ENG-7		
Description:	Caterpillar G3606 1775 hp Compressor Engine		
Rating:	1775	hp	
Fuel Usage:	6649	Btu/hp-hr	
Units:	ENG-8 through ENG-19		
Description:	Waukesha P9394GSI S5 2500 hp Generator Engine		
Rating:	2500	hp	
Fuel Usage:	6929	Btu/hp-hr	
Units:	ENG-20 & ENG-21		
Description:	Caterpillar G3612A4 Compressor Engine		
Rating:	3750	hp	
Fuel Usage:	6638	Btu/hp-hr	

Condensate Tanks			
	Value	**Unit**	**Notes**
Unit:	TK-1 through TK-8		
Description:	400 bbl Condensate Tanks		
Number of Tanks	8		
Volume	400	bbl	
Height (Shell)	20	ft	
Diameter	12	ft	
Hourly Throughput	32.13	bbl/hr	
Annual Throughput	281,502	bbl/yr	

Produced Water Tanks			
	Value	**Unit**	**Notes**
Unit:	PWTK-1 through PWTK-2		
Description:	400 bbl Produced Water Tanks		
Number of Tanks	2		
Volume	400	bbl	
Height (Shell)	20	ft	
Diameter	12	ft	
Hourly Throughput	2.58	bbl/hr	
Annual Throughput	22,591	bbl/yr	

Dehydrator Units			
	Value	**Unit**	**Notes**
Unit:	DEHY-1		
Description:	120 MMSCFD TEG Dehydrator w/ Condenser		
Reboiler Heat Input:	2	MMBTU/hr	
TEG Recirc Rate:	35.66	sgpm	
Flash Tank Pressure:	61.54	psig	
Flash Tank Temperature:	169.64	F	
Daily Throughput	115.02	MMSCFD	
Annual Throughput	41,984	MMSCFY	

Amine Units			
	Value	**Unit**	**Notes**
Unit:	AMINE -1		
Description:	120 MMSCFD Amine Sweetener		
Hot Oil Heater Input:	26.4	MMBTU/hr	
Amine Recirc Rate:	400	sgpm	
Flash Tank Pressure:	1,034	psig	
Flash Tank Temperature:	88	F	
Daily Throughput	120.00	MMSCFD	
Annual Throughput	43,800	MMSCFY	

Flares			
	Value	**Unit**	**Notes**
Unit:	HP-FLARE		
Description:	Train 1: High Pressure Flare		
Capture Efficiency	100%		
Destruction Rate Efficiency	98%		
Pilot Flow Rate	190	scf/hr	
Unit:	LP-FLARE		
Description:	Train 1: Low Pressure Flare		
Capture Efficiency	100%		
Destruction Rate Efficiency	98%		
Pilot Flow Rate	65	scf/hr	
Unit:	HP-FLARE-2		
Description:	Train 2: High Pressure Flare		
Capture Efficiency	100%		
Destruction Rate Efficiency	98%		
Pilot Flow Rate	190	scf/hr	
Unit:	AGI-FLARE		
Description:	Train 1: AGI Flare		
Capture Efficiency	100%		
Destruction Rate Efficiency	98%		
Pilot and Purge Flow Rate	750	scf/hr	Pilot and Purge Gas

Combustors			
	Value	**Unit**	**Notes**
Unit:	COMB-1		
Description:	BTEX Combustor		
Capture Efficiency	100%		
Destruction Rate Efficiency	98%		
Pilot Flow Rate	100	scf/hr	
Unit:	COMB-2		
Description:	Tank and Loading Combustor		
Capture Efficiency	100%		
Destruction Rate Efficiency	98%		
Pilot Flow Rate	100	scf/hr	

Vapor Recovery Units			
	Value	**Unit**	**Notes**
Unit:	VRU-1		
Description:	Vapor Recovery Units		
Capture Efficiency	100%		
Rating:	75	hp	Electric

Lea Midstream, Inc - The Dude Processing Plant

Emissions Summary

Uncontrolled Emissions																	
		NO_X		CO		VOC		SO_2		PM_{10}		$PM_{2.5}$		H_2S		Total HAP	
Unit No.	Description/Source	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy
ENG-1	Caterpillar G3516LE Compressor Engine	1.48	6.47	9.01	39.47	2.33	10.22	8.23E-03	0.036	0.11	0.47	0.11	0.47	-	-	1.05	4.61
ENG-2	Caterpillar G3606LE Compressor Engine	1.96	8.57	10.76	47.13	3.58	15.67	8.67E-03	0.038	0.11	0.49	0.11	0.49	-	-	1.19	5.23
ENG-3	Caterpillar G3606LE Compressor Engine	1.96	8.57	10.76	47.13	3.58	15.67	8.67E-03	0.038	0.11	0.49	0.11	0.49	-	-	1.19	5.23
ENG-4	Caterpillar G3606LE Compressor Engine	1.96	8.57	10.76	47.13	3.58	15.67	8.67E-03	0.038	0.11	0.49	0.11	0.49	-	-	1.19	5.23
ENG-5	Caterpillar G3516LE Compressor Engine	1.48	6.47	9.01	39.47	2.33	10.22	8.23E-03	0.036	0.11	0.47	0.11	0.47	-	-	1.05	4.61
ENG-6	Caterpillar G3516LE Compressor Engine	1.48	6.47	9.01	39.47	2.33	10.22	8.23E-03	0.036	0.11	0.47	0.11	0.47	-	-	1.05	4.61
ENG-7	Caterpillar G3606LE Compressor Engine	1.96	8.57	10.76	47.13	3.58	15.67	8.67E-03	0.038	0.11	0.49	0.11	0.49	-	-	1.19	5.23
ENG-8	Waukesha P9394GSI S5 Generator Engine	71.10	311.41	32.52	142.43	0.74	3.22	0.013	0.056	0.32	1.40	0.32	1.40	-	-	0.42	1.85
ENG-9	Waukesha P9394GSI S5 Generator Engine	71.10	311.41	32.52	142.43	0.74	3.22	0.013	0.056	0.32	1.40	0.32	1.40	-	-	0.42	1.85
ENG-10	Waukesha P9394GSI S5 Generator Engine	71.10	311.41	32.52	142.43	0.74	3.22	0.013	0.056	0.32	1.40	0.32	1.40	-	-	0.42	1.85
ENG-11	Waukesha P9394GSI S5 Generator Engine	71.10	311.41	32.52	142.43	0.74	3.22	0.013	0.056	0.32	1.40	0.32	1.40	-	-	0.42	1.85
ENG-12	Waukesha P9394GSI S5 Generator Engine	71.10	311.41	32.52	142.43	0.74	3.22	0.013	0.056	0.32	1.40	0.32	1.40	-	-	0.42	1.85
ENG-13	Waukesha P9394GSI S5 Generator Engine	71.10	311.41	32.52	142.43	0.74	3.22	0.013	0.056	0.32	1.40	0.32	1.40	-	-	0.42	1.85
ENG-14	Waukesha P9394GSI S5 Generator Engine	71.10	311.41	32.52	142.43	0.74	3.22	0.013	0.056	0.32	1.40	0.32	1.40	-	-	0.42	1.85
ENG-15	Waukesha P9394GSI S5 Generator Engine	71.10	311.41	32.52	142.43	0.74	3.22	0.013	0.056	0.32	1.40	0.32	1.40	-	-	0.42	1.85
ENG-16	Waukesha P9394GSI S5 Generator Engine	71.10	311.41	32.52	142.43	0.74	3.22	0.013	0.056	0.32	1.40	0.32	1.40	-	-	0.42	1.85
ENG-17	Waukesha P9394GSI S5 Generator Engine	71.10	311.41	32.52	142.43	0.74	3.22	0.013	0.056	0.32	1.40	0.32	1.40	-	-	0.42	1.85
ENG-18	Waukesha P9394GSI S5 Generator Engine	71.10	311.41	32.52	142.43	0.74	3.22	0.013	0.056	0.32	1.40	0.32	1.40	-	-	0.42	1.85
ENG-19	Waukesha P9394GSI S5 Generator Engine	71.10	311.41	32.52	142.43	0.74	3.22	0.013	0.056	0.32	1.40	0.32	1.40	-	-	0.42	1.85
ENG-20	Caterpillar G3612A4 Compressor Engine	2.48	10.86	22.57	98.86	5.65	24.77	0.018	0.080	0.24	1.04	0.24	1.04	-	-	1.45	6.34
ENG-21	Caterpillar G3612A4 Compressor Engine	2.48	10.86	22.57	98.86	5.65	24.77	0.018	0.080	0.24	1.04	0.24	1.04	-	-	1.45	6.34
ENG-22	Caterpillar G3516LE Compressor Engine	1.48	6.47	9.01	39.47	2.33	10.22	8.23E-03	0.036	0.11	0.47	0.11	0.47	-	-	1.05	4.61
RBL-1	Train 1: TEG Reboiler	0.15	0.64	0.12	0.54	8.09E-03	0.035	1.10E-03	4.83E-03	0.011	0.049	0.011	0.049	-	-	2.77E-03	0.012
HO-1	Train 1: Amine Hot Oil Heater	0.39	1.71	0.48	2.08	0.14	0.62	0.019	0.085	0.20	0.86	0.20	0.86	-	-	0.049	0.21
HO-2	Train 1: Cryo Hot Oil Heater	0.50	2.18	0.42	1.83	0.027	0.12	3.72E-03	0.016	0.038	0.17	0.038	0.17	-	-	9.35E-03	0.041
HO-3	Train 1: Stabilizer Hot Oil Heater	0.34	1.50	0.29	1.26	0.019	0.083	2.57E-03	0.011	0.026	0.11	0.026	0.11	-	-	6.45E-03	0.028
HO-4	Train 2: Hot Oil Heater	1.95	8.53	1.64	7.16	0.11	0.47	0.015	0.064	0.15	0.65	0.15	0.65	-	-	0.037	0.16
HT-1	Train 1: Regeneration Gas Heater	1.03	4.51	0.86	3.79	0.057	0.25	7.71E-03	0.034	0.078	0.34	0.078	0.34	-	-	0.019	0.085
HT-2	Train 1: Sour Water Stripper Heater	0.098	0.43	0.082	0.36	5.39E-03	0.024	7.35E-04	3.22E-03	7.45E-03	0.033	7.45E-03	0.033	-	-	1.84E-03	8.08E-03
DEHY-1	TEG Dehydrator 1	-	-	-	-	215.88	945.56	-	-	-	-	-	-	0.044	0.19	44.66	195.61
AMINE-1	Amine Treating Unit 1	-	-	-	-	31.85	139.51	-	-	-	-	-	-	1,777.16	7,783.98	29.20	127.88
TK-1	Condensate Storage Tank	-	-	-	-	1.38	6.04	-	-	-	-	-	-	2.94E-07	1.29E-06	0.081	0.35
TK-2	Condensate Storage Tank	-	-	-	-	1.38	6.04	-	-	-	-	-	-	2.94E-07	1.29E-06	0.081	0.35
TK-3	Condensate Storage Tank	-	-	-	-	1.38	6.04	-	-	-	-	-	-	2.94E-07	1.29E-06	0.081	0.35
TK-4	Condensate Storage Tank	-	-	-	-	1.38	6.04	-	-	-	-	-	-	2.94E-07	1.29E-06	0.081	0.35
TK-5	Condensate Storage Tank	-	-	-	-	1.38	6.04	-	-	-	-	-	-	2.94E-07	1.29E-06	0.081	0.35
TK-6	Condensate Storage Tank	-	-	-	-	1.38	6.04	-	-	-	-	-	-	2.94E-07	1.29E-06	0.081	0.35
TK-7	Condensate Storage Tank	-	-	-	-	1.38	6.04	-	-	-	-	-	-	2.94E-07	1.29E-06	0.081	0.35
TK-8	Condensate Storage Tank	-	-	-	-	1.38	6.04	-	-	-	-	-	-	2.94E-07	1.29E-06	0.081	0.35
PWTK-1	Produced Water Storage Tank	-	-	-	-	0.65	2.85	-	-	-	-	-	-	6.02E-08	2.64E-07	0.18	0.80
PWTK-2	Produced Water Storage Tank	-	-	-	-	0.65	2.85	-	-	-	-	-	-	6.02E-08	2.64E-07	0.18	0.80
LOAD	Condensate Truck Loading	-	-	-	-	183.51	71.75	-	-	-	-	-	-	3.91E-05	1.53E-07	10.73	4.19
PW-LOAD	Produced Water Truck Loading	-	-	-	-	127.00	3.98	-	-	-	-	-	-	0.20	6.12E-05	35.68	1.12
HP FLARE	Train 1 High Pressure Flare	7.74E-03	0.034	0.035	0.15	4.67E-03	0.020	9.29E-05	4.07E-04	-	-	-	-	-	-	1.78E-07	7.80E-07
LP FLARE	Train 1 Low Pressure Flare	0.011	0.050	0.052	0.23	6.82E-03	0.030	1.36E-04	5.94E-04	-	-	-	-	-	-	2.60E-07	1.14E-06
FLARE-2	Train 2 Flare	5.96E-03	0.026	0.027	0.12	3.59E-03	0.016	7.14E-05	3.13E-04	-	-	-	-	-	-	1.37E-07	6.00E-07
AGI-FLARE	AGI Flare	3.28E-03	0.014	0.015	0.065	1.97E-03	8.65E-03	3.93E-05	1.72E-04	-	-	-	-	-	-	7.53E-08	3.30E-07
COMB-1	Train 1 BTEX Combustor	0.011	0.048	9.24E-03	0.040	6.05E-04	2.65E-03	7.86E-05	3.44E-04	8.36E-04	3.66E-03	8.36E-04	3.66E-03	4.40E-05	1.93E-04	-	-
COMB-2	Train 1 Truck Load Combustor	0.010	0.044	8.40E-03	0.037	5.50E-04	2.41E-03	7.14E-05	3.13E-04	7.60E-04	3.33E-03	7.60E-04	3.33E-03	4.00E-05	1.75E-04	-	-
FUG	Facility-wide fugitive emissions	-	-	-	-	4.73	20.71	-	-	-	-	-	-	0.058	0.25	0.74	3.24
SSM	Startup, Shutdown, and Maintinence	-	-	-	-	31,746.05	240.45	-	-	-	-	-	-	596.62	4.80	1,179.73	7.11
Total:		**876.39**	**3,838.57**	**518.48**	**2,270.94**	**32,365.51**	**1,669.42**	**0.31**	**1.35**	**5.70**	**24.98**	**5.70**	**24.98**	**2,374.08**	**7,789.22**	**1,318.82**	**418.37**

[1]Only represents pilot and purge emissions for flares.

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Emissions Summary

Controlled Emissions[4]																				
		NO_X		CO		VOC		SO_2		PM_{10}		$PM_{2.5}$		H_2S		Total HAP		CO_2	CH_4	N_2O	CO_{2e}
Unit No.[1,2,3]	Description/Source	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	tpy	tpy	tpy	tpy
ENG-1	Caterpillar G3516LE Compressor Engine	1.48	6.47	0.35	1.55	1.51	6.60	8.23E-03	0.036	0.11	0.47	0.11	0.47	-	-	0.40	1.77	5,206.32	0.098	9.81E-03	5,211.66
ENG-2	Caterpillar G3606LE Compressor Engine	1.96	8.57	0.47	2.06	1.58	6.93	8.67E-03	0.038	0.11	0.49	0.11	0.49	-	-	0.49	2.14	5,485.62	0.10	0.010	5,491.26
ENG-3	Caterpillar G3606LE Compressor Engine	1.96	8.57	0.47	2.06	1.58	6.93	8.67E-03	0.038	0.11	0.49	0.11	0.49	-	-	0.49	2.14	5,485.62	0.10	0.010	5,491.26
ENG-4	Caterpillar G3606LE Compressor Engine	1.96	8.57	0.47	2.06	1.58	6.93	8.67E-03	0.038	0.11	0.49	0.11	0.49	-	-	0.49	2.14	5,485.62	0.10	0.010	5,491.26
ENG-5	Caterpillar G3516LE Compressor Engine	1.48	6.47	0.35	1.55	1.51	6.60	8.23E-03	0.036	0.11	0.47	0.11	0.47	-	-	0.40	1.77	5,206.32	0.098	9.81E-03	5,211.66
ENG-6	Caterpillar G3516LE Compressor Engine	1.48	6.47	0.35	1.55	1.51	6.60	8.23E-03	0.036	0.11	0.47	0.11	0.47	-	-	0.40	1.77	5,206.32	0.098	9.81E-03	5,211.66
ENG-7	Caterpillar G3606LE Compressor Engine	1.96	8.57	0.47	2.06	1.58	6.93	8.67E-03	0.038	0.11	0.49	0.11	0.49	-	-	0.49	2.14	5,485.62	0.10	0.010	5,491.26
ENG-8	Waukesha P9394GSI S5 Generator Engine	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	-	-	0.16	0.71	8,052.00	0.15	0.015	8,060.27
ENG-9	Waukesha P9394GSI S5 Generator Engine	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	-	-	0.16	0.71	8,052.00	0.15	0.015	8,060.27
ENG-10	Waukesha P9394GSI S5 Generator Engine	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	-	-	0.16	0.71	8,052.00	0.15	0.015	8,060.27
ENG-11	Waukesha P9394GSI S5 Generator Engine	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	-	-	0.16	0.71	8,052.00	0.15	0.015	8,060.27
ENG-12	Waukesha P9394GSI S5 Generator Engine	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	-	-	0.16	0.71	8,052.00	0.15	0.015	8,060.27
ENG-13	Waukesha P9394GSI S5 Generator Engine	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	-	-	0.16	0.71	8,052.00	0.15	0.015	8,060.27
ENG-14	Waukesha P9394GSI S5 Generator Engine	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	-	-	0.16	0.71	8,052.00	0.15	0.015	8,060.27
ENG-15	Waukesha P9394GSI S5 Generator Engine	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	-	-	0.16	0.71	8,052.00	0.15	0.015	8,060.27
ENG-16	Waukesha P9394GSI S5 Generator Engine	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	-	-	0.16	0.71	8,052.00	0.15	0.015	8,060.27
ENG-17	Waukesha P9394GSI S5 Generator Engine	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	-	-	0.16	0.71	8,052.00	0.15	0.015	8,060.27
ENG-18	Waukesha P9394GSI S5 Generator Engine	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	-	-	0.16	0.71	8,052.00	0.15	0.015	8,060.27
ENG-19	Waukesha P9394GSI S5 Generator Engine	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	-	-	0.16	0.71	8,052.00	0.15	0.015	8,060.27
ENG-20	Caterpillar G3612A4 Compressor Engine	2.47	10.83	2.07	9.05	4.91	21.51	0.018	0.080	0.24	1.04	0.24	1.04	-	-	0.70	3.08	11,570.17	0.22	0.022	11,582.06
ENG-21	Caterpillar G3612A4 Compressor Engine	2.47	10.83	2.07	9.05	4.91	21.51	0.018	0.080	0.24	1.04	0.24	1.04	-	-	0.70	3.08	11,570.17	0.22	0.022	11,582.06
ENG-22	Caterpillar G3516LE Compressor Engine	1.48	6.47	0.35	1.55	1.51	6.60	8.23E-03	0.036	0.11	0.47	0.11	0.47	-	-	0.40	1.77	5,206.32	0.098	9.81E-03	5,211.66
RBL-1	Train 1: TEG Reboiler	0.15	0.64	0.12	0.54	8.09E-03	0.035	1.10E-03	4.83E-03	0.011	0.049	0.011	0.049	-	-	2.77E-03	0.012	697.21	0.013	1.31E-03	697.92
HO-1	Train 1: Amine Hot Oil Heater	0.39	1.71	0.48	2.08	0.14	0.62	0.019	0.085	0.20	0.86	0.20	0.86	-	-	0.049	0.21	12,270.87	0.23	0.023	12,283.47
HO-2	Train 1: Cryo Hot Oil Heater	0.50	2.18	0.42	1.83	0.027	0.12	3.72E-03	0.016	0.038	0.17	0.038	0.17	-	-	9.35E-03	0.041	2,356.56	0.044	4.44E-03	2,358.98
HO-3	Train 1: Stabilizer Hot Oil Heater	0.34	1.50	0.29	1.26	0.019	0.083	2.57E-03	0.011	0.026	0.11	0.026	0.11	-	-	6.45E-03	0.028	1,626.82	0.031	3.07E-03	1,628.49
HO-4	Train 2: Hot Oil Heater	1.95	8.53	1.64	7.16	0.11	0.47	0.015	0.064	0.15	0.65	0.15	0.65	-	-	0.037	0.16	9,231.04	0.17	0.017	9,240.52
HT-1	Train 1: Regeneration Gas Heater	1.03	4.51	0.86	3.79	0.057	0.25	7.71E-03	0.034	0.078	0.34	0.078	0.34	-	-	0.019	0.085	4,880.46	0.092	9.20E-03	4,885.47
HT-2	Train 1: Sour Water Stripper Heater	0.098	0.43	0.082	0.36	5.39E-03	0.024	7.35E-04	3.22E-03	7.45E-03	0.033	7.45E-03	0.033	-	-	1.84E-03	8.08E-03	464.81	8.76E-03	8.76E-04	465.28
DEHY-1	TEG Dehydrator 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AMINE-1	Amine Treating Unit 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-1	Condensate Storage Tank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-2	Condensate Storage Tank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-3	Condensate Storage Tank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-4	Condensate Storage Tank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-5	Condensate Storage Tank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-6	Condensate Storage Tank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-7	Condensate Storage Tank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-8	Condensate Storage Tank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWTK-1	Produced Water Storage Tank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWTK-2	Produced Water Storage Tank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LOAD	Condensate Truck Loading	-	-	-	-	55.05	21.52	-	-	-	-	-	-	1.17E-05	4.59E-08	3.22	1.26	3.46E-08	1.43E-10	-	**3.86E-08**
PW-LOAD	Produced Water Truck Loading	-	-	-	-	38.10	1.20	-	-	-	-	-	-	0.059	1.84E-05	10.71	0.34	3.62E-08	8.64E-03	-	**0.24**
HP FLARE	Train 1 High Pressure Flare	2.42	0.036	11.05	0.16	9.81	0.027	1.34	5.29E-03	-	-	-	-	0.015	5.18E-05	0.28	1.97E-04	0.18	0.46	1.17E-04	**13.20**
LP FLARE	Low Pressure Flare	178.59	2.31	814.14	10.51	502.66	10.34	1,167.80	9.52	-	-	-	-	11.92	1.38E-03	14.74	0.70	123.83	10.51	7.57E-03	**420.23**
FLARE-2	Train 2 Flare	29.48	0.041	134.40	0.19	27.62	0.071	0.11	5.42E-04	-	-	-	-	1.17E-03	2.34E-06	3.58	1.59E-03	1.51	0.43	1.21E-04	**13.46**
AGI-FLARE	AGI Flare	31.34	1.58	142.87	7.21	19.01	0.040	3,278.71	163.94	-	-	-	-	35.54	1.78	0.59	0.030	1,143.62	20.41	5.13E-03	**1,716.43**
FLARE-M[5]	HP FLARE Flaring Malfunctions	2.42	10.00	4.83	10.00	0.53	10.00	-	10.00	-	-	-	-	-	10.00	4.26E-06	10.00	1,551.33	1.50	7.11E-03	1,595.15
	AGI Flare Flaring Malfunctions	31.34		142.86		19.01		3,278.71		-	-	-	-	35.54		0.59					
COMB-1	Train 1 BTEX Combustor	0.099	0.43	0.083	0.37	5.46E-03	8.61	0.057	0.25	7.54E-03	0.033	7.54E-03	0.033	6.21E-04	2.72E-03	0.76	3.33	555.11	0.010	1.05E-03	**555.68**
COMB-2	Train 1 Truck Load Combustor	0.021	0.090	0.017	0.076	6.46	1.57	0.36	7.61E-04	1.57E-03	6.88E-03	1.57E-03	6.88E-03	3.94E-03	1.76E-04	0.95	0.11	110.38	3.25E-03	3.25E-04	**110.56**
FUG	Facility-wide fugitive emissions	-	-	-	-	4.73	20.71	-	-	-	-	-	-	0.058	0.25	0.74	3.24	1.55	19.94	-	**559.75**
SSM	Startup, Shutdown, and Maintinence	-	-	-	-	762.60	33.64	-	-	-	-	-	-	0.032	1.41E-03	20.25	0.89	0.13	63.50	-	**1,778.15**
Total		274.96	159.05	1,117.78	95.13	1,449.71	211.36	4,448.69	185.06	5.71	25.02	5.71	25.02	47.63	12.04	62.88	50.80	197,547.57	120.43	0.39	**201,022.10**
Total w/o Fugitive		**274.96**	**159.05**	**1,117.78**	**95.13**	**1,444.98**	**190.64**	**4,448.69**	**185.06**	**5.71**	**25.02**	**5.71**	**25.02**	**47.57**	**11.78**	**62.14**	**47.55**				
Under PSD Threshold?		**YES**		**YES**		**YES**		**YES**		**YES**		**YES**		**YES**		**YES**					

[1] The amine is controlled by AGI-1, during AGI well downtime, emissions are controlled by FLARE-AGI with a 100% capture and 98% DRE. Emissions are represented under FLARE-AGI.
[2] The dehydrator is controlled by COMB-1 and LP-FLARE with a 100% capture and 98% DRE. Emissions are represented under COMB-1 and LP-FLARE.
[3] Tanks and Loading are controlled by COMB-2 with 100% capture for tanks and 70% capture for loading and 98% DRE. Emissions are represented under COMB-2.
[4] Hourly emissions do not include flaring malfunction (FLARE-M) as they cannot occur at the same time as other flaring emissions. Flaring malfunction emissions are included in the annual emission totals.

Lea Midstream, Inc - The Dude Processing Plant

Emissions Summary- HAPs

Controlled Emissions[4]																			
		Total HAP		Formaldehyde		Hexane		Benzene		Toluene		Ethylbenzene		Xylenes		Acetaldehyde		Acrolein	
Unit No.[1,2,3]	Description/Source	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy
ENG-1	Caterpillar G3516LE Compressor Engine	0.40	1.77	0.24	1.04	0.012	0.051	4.70E-03	0.021	4.36E-03	0.019	4.24E-04	1.86E-03	1.96E-03	8.61E-03	0.089	0.39	0.055	0.24
ENG-2	Caterpillar G3606LE Compressor Engine	0.49	2.14	0.31	1.37	0.012	0.054	4.95E-03	0.022	4.59E-03	0.020	4.47E-04	1.96E-03	2.07E-03	9.07E-03	0.094	0.41	0.058	0.25
ENG-3	Caterpillar G3606LE Compressor Engine	0.49	2.14	0.31	1.37	0.012	0.054	4.95E-03	0.022	4.59E-03	0.020	4.47E-04	1.96E-03	2.07E-03	9.07E-03	0.094	0.41	0.058	0.25
ENG-4	Caterpillar G3606LE Compressor Engine	0.49	2.14	0.31	1.37	0.012	0.054	4.95E-03	0.022	4.59E-03	0.020	4.47E-04	1.96E-03	2.07E-03	9.07E-03	0.094	0.41	0.058	0.25
ENG-5	Caterpillar G3516LE Compressor Engine	0.40	1.77	0.24	1.04	0.012	0.051	4.70E-03	0.021	4.36E-03	0.019	4.24E-04	1.86E-03	1.96E-03	8.61E-03	0.089	0.39	0.055	0.24
ENG-6	Caterpillar G3516LE Compressor Engine	0.40	1.77	0.24	1.04	0.012	0.051	4.70E-03	0.021	4.36E-03	0.019	4.24E-04	1.86E-03	1.96E-03	8.61E-03	0.089	0.39	0.055	0.24
ENG-7	Caterpillar G3606LE Compressor Engine	0.49	2.14	0.31	1.37	0.012	0.054	4.95E-03	0.022	4.59E-03	0.020	4.47E-04	1.96E-03	2.07E-03	9.07E-03	0.094	0.41	0.058	0.25
ENG-8	Waukesha P9394GSI S5 Generator Engine	0.16	0.71	0.016	0.070	0.018	0.080	0.026	0.11	9.22E-03	0.040	4.10E-04	1.79E-03	3.22E-03	0.014	0.046	0.20	0.043	0.19
ENG-9	Waukesha P9394GSI S5 Generator Engine	0.16	0.71	0.016	0.070	0.018	0.080	0.026	0.11	9.22E-03	0.040	4.10E-04	1.79E-03	3.22E-03	0.014	0.046	0.20	0.043	0.19
ENG-10	Waukesha P9394GSI S5 Generator Engine	0.16	0.71	0.016	0.070	0.018	0.080	0.026	0.11	9.22E-03	0.040	4.10E-04	1.79E-03	3.22E-03	0.014	0.046	0.20	0.043	0.19
ENG-11	Waukesha P9394GSI S5 Generator Engine	0.16	0.71	0.016	0.070	0.018	0.080	0.026	0.11	9.22E-03	0.040	4.10E-04	1.79E-03	3.22E-03	0.014	0.046	0.20	0.043	0.19
ENG-12	Waukesha P9394GSI S5 Generator Engine	0.16	0.71	0.016	0.070	0.018	0.080	0.026	0.11	9.22E-03	0.040	4.10E-04	1.79E-03	3.22E-03	0.014	0.046	0.20	0.043	0.19
ENG-13	Waukesha P9394GSI S5 Generator Engine	0.16	0.71	0.016	0.070	0.018	0.080	0.026	0.11	9.22E-03	0.040	4.10E-04	1.79E-03	3.22E-03	0.014	0.046	0.20	0.043	0.19
ENG-14	Waukesha P9394GSI S5 Generator Engine	0.16	0.71	0.016	0.070	0.018	0.080	0.026	0.11	9.22E-03	0.040	4.10E-04	1.79E-03	3.22E-03	0.014	0.046	0.20	0.043	0.19
ENG-15	Waukesha P9394GSI S5 Generator Engine	0.16	0.71	0.016	0.070	0.018	0.080	0.026	0.11	9.22E-03	0.040	4.10E-04	1.79E-03	3.22E-03	0.014	0.046	0.20	0.043	0.19
ENG-16	Waukesha P9394GSI S5 Generator Engine	0.16	0.71	0.016	0.070	0.018	0.080	0.026	0.11	9.22E-03	0.040	4.10E-04	1.79E-03	3.22E-03	0.014	0.046	0.20	0.043	0.19
ENG-17	Waukesha P9394GSI S5 Generator Engine	0.16	0.71	0.016	0.070	0.018	0.080	0.026	0.11	9.22E-03	0.040	4.10E-04	1.79E-03	3.22E-03	0.014	0.046	0.20	0.043	0.19
ENG-18	Waukesha P9394GSI S5 Generator Engine	0.16	0.71	0.016	0.070	0.018	0.080	0.026	0.11	9.22E-03	0.040	4.10E-04	1.79E-03	3.22E-03	0.014	0.046	0.20	0.043	0.19
ENG-19	Waukesha P9394GSI S5 Generator Engine	0.16	0.71	0.016	0.070	0.018	0.080	0.026	0.11	9.22E-03	0.040	4.10E-04	1.79E-03	3.22E-03	0.014	0.046	0.20	0.043	0.19
ENG-20	Caterpillar G3612A4 Compressor Engine	0.70	3.08	0.33	1.45	0.026	0.11	9.42E-04	4.13E-03	9.68E-03	0.042	9.42E-04	4.13E-03	4.37E-03	0.019	0.20	0.87	0.12	0.53
ENG-21	Caterpillar G3612A4 Compressor Engine	0.70	3.08	0.33	1.45	0.026	0.11	9.42E-04	4.13E-03	9.68E-03	0.042	9.42E-04	4.13E-03	4.37E-03	0.019	0.20	0.87	0.12	0.53
ENG-22	Caterpillar G3516LE Compressor Engine	0.40	1.77	0.24	1.04	0.012	0.051	4.70E-03	0.021	4.36E-03	0.019	4.24E-04	1.86E-03	1.96E-03	8.61E-03	0.089	0.39	0.055	0.24
RBL-1	Train 1: TEG Reboiler	2.77E-03	0.012	1.10E-04	4.83E-04	2.65E-03	0.012	3.09E-06	1.35E-05	5.00E-06	2.19E-05	-	-	-	-	-	-	-	-
HO-1	Train 1: Amine Hot Oil Heater	0.049	0.21	1.94E-03	8.50E-03	0.047	0.20	5.44E-05	2.38E-04	8.80E-05	3.85E-04	-	-	-	-	-	-	-	-
HO-2	Train 1: Cryo Hot Oil Heater	9.35E-03	0.041	3.73E-04	1.63E-03	8.95E-03	0.039	1.04E-05	4.57E-05	1.69E-05	7.40E-05	-	-	-	-	-	-	-	-
HO-3	Train 1: Stabilizer Hot Oil Heater	6.45E-03	0.028	2.57E-04	1.13E-03	6.18E-03	0.027	7.21E-06	3.16E-05	1.17E-05	5.11E-05	-	-	-	-	-	-	-	-
HO-4	Train 2: Hot Oil Heater	0.037	0.16	1.46E-03	6.40E-03	0.035	0.15	4.09E-05	1.79E-04	6.62E-05	2.90E-04	-	-	-	-	-	-	-	-
HT-1	Train 1: Regeneration Gas Heater	0.019	0.085	7.72E-04	3.38E-03	0.019	0.081	2.16E-05	9.47E-05	3.50E-05	1.53E-04	-	-	-	-	-	-	-	-
HT-2	Train 1: Sour Water Stripper Heater	1.84E-03	8.08E-03	7.35E-05	3.22E-04	1.76E-03	7.73E-03	2.06E-06	9.02E-06	3.33E-06	1.46E-05	-	-	-	-	-	-	-	-
DEHY-1	TEG Dehydrator 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AMINE-1	Amine Treating Unit 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-1	Condensate Storage Tank	-	-	-	-											-	-	-	-
TK-2	Condensate Storage Tank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-3	Condensate Storage Tank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-4	Condensate Storage Tank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-5	Condensate Storage Tank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-6	Condensate Storage Tank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-7	Condensate Storage Tank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-8	Condensate Storage Tank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWTK-1	Produced Water Storage Tank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWTK-2	Produced Water Storage Tank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LOAD	Condensate Truck Loading	3.22	1.26	-	-	1.47	0.57	1.39	0.54	0.032	0.012	-	-	0.014	5.43E-03	-	-	-	-
PW-LOAD	Produced Water Truck Loading	10.71	0.34	-	-	0.50	0.016	8.37	0.26	1.71	0.054	0.052	1.62E-03	0.078	2.46E-03	-	-	-	-
HP FLARE	Train 1 High Pressure Flare	0.28	1.97E-04	-	-	2.11	1.29E-03	4.58	3.21E-03	1.01	7.02E-04	0.046	3.07E-05	0.047	3.27E-05	-	-	-	-
LP FLARE	Low Pressure Flare	14.74	0.70	-	-	4.62	0.16	7.04	0.39	2.63	0.13	0.24	0.010	0.22	8.71E-03	-	-	-	-
FLARE-2	Train 2 Flare	3.58	1.59E-03	-	-	0.25	5.08E-04	0.38	7.51E-04	0.14	2.83E-04	0.013	2.57E-05	0.012	2.35E-05	-	-	-	-
AGI-FLARE	AGI Flare	0.59	10.03	-	-	7.59E-04	3.83E-05	0.45	0.023	0.12	6.14E-03	7.76E-03	3.88E-04	9.89E-03	4.94E-04	-	-	-	-
FLARE-M	HP FLARE Flaring Malfunctions	4.26E-06	5.00	-	-	4.26E-06	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	-	-	-
	AGI Flare Flaring Malfunctions	0.59		-	-	7.59E-04		0.45		0.12		7.76E-03		9.89E-03		-	-	-	-
COMB-1	Train 1 BTEX Combustor	0.76	3.33	-	-	0.031	0.13	0.58	2.54	0.14	0.62	7.32E-03	0.032	7.72E-03	0.034	-	-	-	-
COMB-2	Train 1 Truck Load Combustor	0.95	0.11	-	-	3.41	0.067	0.66	0.10	0.14	0.023	4.86E-03	1.12E-03	6.25E-03	1.00E-03	-	-	-	-
FUG	Facility-wide fugitive emissions	0.74	3.24	-	-	0.16	0.70	0.29	1.27	0.22	0.94	0.038	0.17	-	-	-	-	-	-
SSM	Startup, Shutdown, and Maintinence	20.25	0.89	-	-	1.35	0.059	0.80	0.035	0.22	9.55E-03	0.22	9.64E-03	0.014	6.13E-04	-	-	-	-
Total		63.47	55.80	3.06	13.38	14.38	4.84	25.35	7.72	6.64	3.53	0.64	1.27	0.48	1.33	1.68	7.37	1.22	5.33

[1] The amine is controlled by AGI-1, during AGI well downtime, emissions are controlled by FLARE-AGI with a 100% capture and 98% DRE. Emissions are represented under FLARE-AGI.
[2] The dehydrator is controlled by COMB-1 and LP-FLARE with a 100% capture and 98% DRE. Emissions are represented under COMB-1 and LP-FLARE.
[3] Tanks and Loading are controlled by COMB-2 with 100% capture for tanks and 70% capture for loading and 98% DRE. Emissions are represented under COMB-2.
[4] Hourly emissions do not include flaring malfunction (FLARE-M) as they cannot occur at the same time as other flaring emissions. Flaring malfunction emissions are included in the annual emission totals.

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Controlled Engine Summary

Unit Name	Description	Horsepower	NO_X		CO		VOC		SO_2		PM_{10}		$PM_{2.5}$		H_2S		Total HAP	
		hp	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy
ENG-1	Train 1 Residue Compressor Engine	1340 hp	1.48	6.47	0.35	1.55	1.51	6.60	8.23E-03	0.036	0.11	0.47	0.11	0.47	--	--	0.40	1.77
ENG-2	NRU Feed Gas Compressor Engine	1775 hp	1.96	8.57	0.47	2.06	1.58	6.93	8.67E-03	0.038	0.11	0.49	0.11	0.49	--	--	0.49	2.14
ENG-3	NRU Feed Gas Compressor Engine	1775 hp	1.96	8.57	0.47	2.06	1.58	6.93	8.67E-03	0.038	0.11	0.49	0.11	0.49	--	--	0.49	2.14
ENG-4	NRU Feed Gas Compressor Engine	1775 hp	1.96	8.57	0.47	2.06	1.58	6.93	8.67E-03	0.038	0.11	0.49	0.11	0.49	--	--	0.49	2.14
ENG-5	Train 1 Residue Compressor Engine	1340 hp	1.48	6.47	0.35	1.55	1.51	6.60	8.23E-03	0.036	0.11	0.47	0.11	0.47	--	--	0.40	1.77
ENG-6	Train 1 Residue Compressor Engine	1340 hp	1.48	6.47	0.35	1.55	1.51	6.60	8.23E-03	0.036	0.11	0.47	0.11	0.47	--	--	0.40	1.77
ENG-7	Train 1 Residue Compressor Engine	1775 hp	1.96	8.57	0.47	2.06	1.58	6.93	8.67E-03	0.038	0.11	0.49	0.11	0.49	--	--	0.49	2.14
ENG-8	Train 1 Generator Engine	2500 hp	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	--	--	0.16	0.71
ENG-9	Train 1 Generator Engine	2500 hp	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	--	--	0.16	0.71
ENG-10	Train 1 Generator Engine	2500 hp	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	--	--	0.16	0.71
ENG-11	Train 1 Generator Engine	2500 hp	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	--	--	0.16	0.71
ENG-12	Train 2 Generator Engine	2500 hp	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	--	--	0.16	0.71
ENG-13	Train 2 Generator Engine	2500 hp	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	--	--	0.16	0.71
ENG-14	Train 2 Generator Engine	2500 hp	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	--	--	0.16	0.71
ENG-15	Train 2 Generator Engine	2500 hp	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	--	--	0.16	0.71
ENG-16	AGI Well Generator Engine	2500 hp	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	--	--	0.16	0.71
ENG-17	AGI Well Generator Engine	2500 hp	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	--	--	0.16	0.71
ENG-18	AGI Well Generator Engine	2500 hp	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	--	--	0.16	0.71
ENG-19	AGI Well Generator Engine	2500 hp	0.82	3.60	0.32	1.42	0.093	0.41	0.013	0.056	0.32	1.40	0.32	1.40	--	--	0.16	0.71
ENG-20	Train 2 Residue Compressor Engine	3750 hp	2.47	10.83	2.07	9.05	4.91	21.51	0.018	0.080	0.24	1.04	0.24	1.04	--	--	0.70	3.08
ENG-21	Train 2 Residue Compressor Engine	3750 hp	2.47	10.83	2.07	9.05	4.91	21.51	0.018	0.080	0.24	1.04	0.24	1.04	--	--	0.70	3.08
ENG-22	Overhead Compressor Engine	1340 hp	2.47	10.83	2.07	9.05	4.91	21.51	0.018	0.080	0.24	1.04	0.24	1.04	--	--	0.70	3.08

Lea Midstream, Inc - The Dude Processing Plant

Caterpillar G3516LE Compressor Engines

Emission Unit:	ENG-1, ENG-5, ENG-6, ENG-22
Source Description:	Caterpillar G3516LE 1340 hp Compressor Engine
Manufacturer:	Caterpillar
Model:	G3516LE
Type:	4SLB

Fuel Consumption

Site horsepower	1340	hp	Manufacturer Rating
Fuel heat value	972.48	Btu/scf	Fuel Gas Analysis
Heat input	11.2	MMBtu/hr	Fuel consumption * Fuel heat value
Fuel consumption	11.5	Mscf/hr	Heat input / fuel heat value
Hours of Operation	8760.0	hrs/yr	
Annual fuel usage	100.9	MMscf/yr	8760 hrs/yr operation
Fuel Consumption	8359	Btu/hp-hr	Manufacturer Spec Sheet @ Max Rating

Emission Calculations

Uncontrolled	**NO_x**	**CO**	**VOC**	**SO_2[2]**	**HCHO**	**PM_{10}[4]**	**$PM_{2.5}$[4]**	**Total HAPs[3]**	**Units**	**Notes**
Emission Factors	0.50	3.05	0.46		0.30				g/hp-hr	Catalyst Guarantee
						9.99E-03	9.99E-03		lb/MMBtu	AP-42 Table 3.2-2
						9.52E-03	9.52E-03		lb/MMBtu	AP-42 Table 3.2-2 (adjusted)
				0.0025					gr/scf	Engineering Estimate
Emissions	**1.48**	**9.01**	**2.33**	**8.23E-03**	**0.89**	**0.11**	**0.11**	**1.05**	lb/hr	
	6.47	**39.47**	**10.22**	**0.04**	**3.88**	**0.47**	**0.47**	**4.61**	tpy	

Controlled	**NO_x**	**CO**	**VOC[1]**	**SO_2[2]**	**HCHO**	**PM_{10}[4]**	**$PM_{2.5}$[4]**	**Total HAPs[3]**	**Units**	**Notes**
Emission Factors	0.50	0.12	0.40		0.08				g/hp-hr	Catalyst Guarantee
	0.00%	96.07%	35.43%		73.33%					% Reduction
						9.99E-03	9.99E-03		lb/MMBtu	AP-42 Table 3.2-2
						9.52E-03	9.52E-03		lb/MMBtu	AP-42 Table 3.2-2 (adjusted)
Emissions	**1.48**	**0.35**	**1.51**	**8.23E-03**	**0.24**	**0.11**	**0.11**	**0.40**	lb/hr	
	6.47	**1.55**	**6.60**	**0.04**	**1.04**	**0.47**	**0.47**	**1.77**	tpy	

Acetaldehyde[5]	**Acrolein[5]**	**Benzene[5]**	**E-Benzene[5]**	**n-Hexane[5]**	**Toluene[5]**	**Xylene[5]**	**Units**	**Notes**
8.36E-03	5.14E-03	4.40E-04	3.97E-05	1.10E-03	4.08E-04	1.84E-04	lb/MMBtu	AP-42 Table 3.2-2
7.97E-03	4.90E-03	4.19E-04	3.79E-05	1.05E-03	3.89E-04	1.75E-04	lb/MMBtu	AP-42 Table 3.2-2 (adjusted)
0.09	**0.05**	**4.70E-03**	**4.24E-04**	**0.01**	**4.36E-03**	**1.96E-03**	lb/hr	
0.39	**0.24**	**0.02**	**1.86E-03**	**0.05**	**0.02**	**8.61E-03**	tpy	

NOTES

[1] VOC emission factor is calculated by adding aldehyde emissions.

[2] SO_2 emissions are based on fuel consumption and fuel sulfur content of 0.25 grains of sulfur per 100 scf

0.25 gr S/100 scf * fuel scf/hr * 1 lb/7000 gr * 64 lb-mol SO_2/ 32 lb-mol S = lb/hr SO_2

[3] HAPs emissions factors are referenced from AP-42 Table 3.2-2 (except formaldehyde: provided in mfg spec sheet).

[4] Assumes PM (Filterable + Condensable) = PM_{10} = $PM_{2.5}$

[5] AP-42 Table 3.2-2 & adjusted for 972.48 Btu/scf

Lea Midstream, Inc - The Dude Processing Plant

Caterpillar G3606 Compressor Engines

Emission Unit:	ENG-2 through ENG-4, ENG-7
Source Description:	Caterpillar G3606 1775 hp Compressor Engine
Manufacturer:	Caterpillar
Model:	G3606LE
Type:	4SLB

Fuel Consumption

Site horsepower	1775	hp	Manufacturer Rating
Fuel heat value	972.48	Btu/scf	Fuel Gas Analysis
Heat input	11.8	MMBtu/hr	Fuel consumption * Fuel heat value
Fuel consumption	12.1	Mscf/hr	Heat input / fuel heat value
Hours of Operation	8760.0	hrs/yr	
Annual fuel usage	106.3	MMscf/yr	8760 hrs/yr operation
Fuel Consumption	6649	Btu/hp-hr	Manufacturer Spec Sheet @ Max Rating

Emission Calculations

Uncontrolled	**NO_x**	**CO**	**VOC**	**SO_2[2]**	**HCHO**	**PM_{10}[4]**	**$PM_{2.5}$[4]**	**Total HAPs[3]**	**Units**	**Notes**
Emission Factors	0.50	2.75	0.63		0.26				g/hp-hr	Catalyst Guarantee
						9.99E-03	9.99E-03		lb/MMBtu	AP-42 Table 3.2-2
						9.52E-03	9.52E-03		lb/MMBtu	AP-42 Table 3.2-2 (adjusted)
				0.0025					gr/scf	Engineering Estimate
Emissions	**1.96**	**10.76**	**3.58**	**8.67E-03**	**1.02**	**0.11**	**0.11**	**1.19**	lb/hr	
	8.57	**47.13**	**15.67**	**0.038**	**4.46**	**0.49**	**0.49**	**5.23**	tpy	

Controlled	**NO_x**	**CO**	**VOC[1]**	**SO_2[2]**	**HCHO**	**PM_{10}[4]**	**$PM_{2.5}$[4]**	**Total HAPs[3]**	**Units**	**Notes**
Emission Factors	0.50	0.12	0.30		0.08				g/hp-hr	Catalyst Guarantee
	0.00%	95.64%	55.80%		69.23%					% Reduction
						9.99E-03	9.99E-03		lb/MMBtu	AP-42 Table 3.2-2
						9.52E-03	9.52E-03		lb/MMBtu	AP-42 Table 3.2-2 (adjusted)
Emissions	**1.96**	**0.47**	**1.58**	**8.67E-03**	**0.31**	**0.11**	**0.11**	**0.49**	lb/hr	
	8.57	**2.06**	**6.93**	**0.038**	**1.37**	**0.49**	**0.49**	**2.14**	tpy	

Acetaldehyde[5]	**Acrolein[5]**	**Benzene[5]**	**E-Benzene[5]**	**n-Hexane[5]**	**Toluene[5]**	**Xylene[5]**	**Units**	**Notes**
8.36E-03	5.14E-03	4.40E-04	3.97E-05	1.10E-03	4.08E-04	1.84E-04	lb/MMBtu	AP-42 Table 3.2-2
7.97E-03	4.90E-03	4.19E-04	3.79E-05	1.05E-03	3.89E-04	1.75E-04	lb/MMBtu	AP-42 Table 3.2-2 (adjusted)
0.094	**0.058**	**4.95E-03**	**4.47E-04**	**0.012**	**4.59E-03**	**2.07E-03**	lb/hr	
0.41	**0.25**	**0.022**	**1.96E-03**	**0.054**	**0.020**	**9.07E-03**	tpy	

NOTES

[1] VOC emission factor is calculated by adding aldehyde emissions.

[2] SO_2 emissions are based on fuel consumption and fuel sulfur content of 0.25 grains of sulfur per 100 scf

0.25 gr S/100 scf * fuel scf/hr * 1 lb/7000 gr * 64 lb-mol SO_2/ 32 lb-mol S = lb/hr SO_2

[3] HAPs emissions factors are referenced from AP-42 Table 3.2-2 (except formaldehyde: provided in mfg spec sheet).

[4] Assumes PM (Filterable + Condensable) = PM_{10} = $PM_{2.5}$

[5] AP-42 Table 3.2-2 & adjusted for 972.48 Btu/scf

Lea Midstream, Inc - The Dude Processing Plant

Waukesha P9394GSI S5 Generator Engines

Emission Unit:	ENG-8 through ENG-19
Source Description:	Waukesha P9394GSI S5 2500 hp Generator Engine
Manufacturer:	Waukesha
Model:	P9394GSI
Type:	4SRB

Fuel Consumption

Site horsepower	2500	hp	Manufacturer Rating
Fuel heat value	972.48	Btu/scf	Fuel Gas Analysis
Heat input	17.3	MMBtu/hr	Fuel consumption * Fuel heat value
Fuel consumption	17.8	Mscf/hr	Heat input / fuel heat value
Hours of Operation	8760.0	hrs/yr	
Annual fuel usage	156.0	MMscf/yr	8760 hrs/yr operation
Fuel Consumption	6929	Btu/hp-hr	Manufacturer Spec Sheet @ Max Rating
Controlled Emissions Safety Factor[6]	25	%	Safety Factor

Emission Calculations

Uncontrolled	NO_x	CO	VOC	SO_2[2]	HCHO	PM_{10}[4]	$PM_{2.5}$[4]	Total HAPs[3]	Units	Notes
Emission Factors	12.90	5.90	0.08		0.05				g/hp-hr	Catalyst Guarantee
						0.019	0.019		lb/MMBtu	AP-42 Table 3.2-3
						0.019	0.019		lb/MMBtu	AP-42 Table 3.2-3 (adjusted)
				0.0025					gr/scf	Engineering Estimate
Emissions	**71.10**	**32.52**	**0.74**	**0.013**	**0.28**	**0.32**	**0.32**	**0.42**	lb/hr	
	311.41	**142.43**	**3.22**	**0.056**	**1.21**	**1.40**	**1.40**	**1.85**	tpy	

Controlled[6]	NO_x	CO	VOC[1]	SO_2[2]	HCHO	PM_{10}[4]	$PM_{2.5}$[4]	Total HAPs[3]	Units	Notes
Emission Factors	0.15	0.06	0.006		0.003				g/hp-hr	Catalyst Guarantee with Safety Factor
	98.84%	99.00%	87.30%		94.21%					% Reduction
						0.019	0.019		lb/MMBtu	AP-42 Table 3.2-3
						0.019	0.019		lb/MMBtu	AP-42 Table 3.2-3 (adjusted)
Emissions	**0.82**	**0.32**	**0.093**	**0.013**	**0.016**	**0.32**	**0.32**	**0.16**	lb/hr	
	3.60	**1.42**	**0.41**	**0.056**	**0.070**	**1.40**	**1.40**	**0.71**	tpy	

Acetaldehyde[5]	Acrolein[5]	Benzene[5]	E-Benzene[5]	n-Hexane[5]	Toluene[5]	Xylene[5]	Units	Notes
2.79E-03	2.63E-03	1.58E-03	2.48E-05	1.10E-03	5.58E-04	1.95E-04	lb/MMBtu	AP-42 Table 3.2-3
2.66E-03	2.51E-03	1.51E-03	2.36E-05	1.05E-03	5.32E-04	1.86E-04	lb/MMBtu	AP-42 Table 3.2-3 (adjusted)
0.046	**0.043**	**0.026**	**4.10E-04**	**0.018**	**9.22E-03**	**3.22E-03**	lb/hr	
0.20	**0.19**	**0.11**	**1.79E-03**	**0.080**	**0.040**	**0.014**	tpy	

NOTES

[1] VOC emission factor is calculated by adding aldehyde emissions.

[2] SO_2 emissions are based on fuel consumption and fuel sulfur content of 0.25 grains of sulfur per 100 scf

0.25 gr S/100 scf * fuel scf/hr * 1 lb/7000 gr * 64 lb-mol SO_2/ 32 lb-mol S = lb/hr SO_2

[3] HAPs emissions factors are referenced from AP-42 Table 3.2-3 (except formaldehyde: provided in mfg spec sheet).

[4] Assumes PM (Filterable + Condensable) = PM_{10} = $PM_{2.5}$

[5] AP-42 Table 3.2-3 & adjusted for 972.48 Btu/scf

[6] Safety factor applied to the manufacturer catalyst guarantee to account for potential variation in operating conditions.

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Caterpillar G3612A4 Compressor Engine

Emission Unit:	ENG-20 & ENG-21
Source Description:	Caterpillar G3612A4 Compressor Engine
Manufacturer:	Caterpillar
Model:	G3612A4
Type:	4SLB

Fuel Consumption

Site horsepower	3750	hp	Manufacturer Rating
Fuel heat value	972.48	Btu/scf	Fuel Gas Analysis
Heat input	24.9	MMBtu/hr	Fuel consumption * Fuel heat value
Fuel consumption	25.6	Mscf/hr	Heat input / fuel heat value
Hours of Operation	8760.0	hrs/yr	
Annual fuel usage	224.2	MMscf/yr	8760 hrs/yr operation
Fuel Consumption	6638	Btu/hp-hr	Manufacturer Spec Sheet @ Max Rating

Emission Calculations

Uncontrolled	NO_x	CO	VOC	SO_2[2]	HCHO	PM_{10}[4]	$PM_{2.5}$[4]	Total HAPs[3]	Units	Notes
Emission Factors	0.30	2.73	0.53		0.13				g/hp-hr	Catalyst Guarantee
						9.99E-03	9.99E-03		lb/MMBtu	AP-42 Table 3.2-2
						9.52E-03	9.52E-03		lb/MMBtu	AP-42 Table 3.2-2 (adjusted)
				0.0025					gr/scf	Engineering Estimate
Emissions	**2.48**	**22.57**	**5.65**	**0.018**	**1.07**	**0.24**	**0.24**	**1.45**	lb/hr	
	10.86	**98.86**	**24.77**	**0.080**	**4.71**	**1.04**	**1.04**	**6.34**	tpy	

Controlled	NO_x	CO	VOC[1]	SO_2[2]	HCHO	PM_{10}[4]	$PM_{2.5}$[4]	Total HAPs[3]	Units	Notes
Emission Factors	0.30	0.25	0.53		0.04				g/hp-hr	Catalyst Guarantee
	0.33%	90.84%	0.00%		69.23%					% Reduction
						9.99E-03	9.99E-03		lb/MMBtu	AP-42 Table 3.2-2
						9.52E-03	9.52E-03		lb/MMBtu	AP-42 Table 3.2-2 (adjusted)
Emissions	**2.47**	**2.07**	**4.91**	**0.018**	**0.33**	**0.24**	**0.24**	**0.70**	lb/hr	
	10.83	**9.05**	**21.51**	**0.080**	**1.45**	**1.04**	**1.04**	**3.08**	tpy	

Acetaldehyde[5]	Acrolein[5]	Benzene[5]	E-Benzene[5]	n-Hexane[5]	Toluene[5]	Xylene[5]	Units	Notes
8.36E-03	5.14E-03	4.40E-04	3.97E-05	1.10E-03	4.08E-04	1.84E-04	lb/MMBtu	AP-42 Table 3.2-2
7.97E-03	4.90E-03	4.19E-04	3.79E-05	1.05E-03	3.89E-04	1.75E-04	lb/MMBtu	AP-42 Table 3.2-2 (adjusted)
0.20	**0.12**	**0.010**	**9.42E-04**	**0.026**	**9.68E-03**	**4.37E-03**	lb/hr	
0.87	**0.53**	**0.046**	**4.13E-03**	**0.11**	**0.042**	**0.019**	tpy	

NOTES

[1] VOC emission factor is calculated by adding aldehyde emissions.

[2] SO_2 emissions are based on fuel consumption and fuel sulfur content of 0.25 grains of sulfur per 100 scf

0.25 gr S/100 scf * fuel scf/hr * 1 lb/7000 gr * 64 lb-mol SO_2/ 32 lb-mol S = lb/hr SO_2

[3] HAPs emissions factors are referenced from AP-42 Table 3.2-2 (except formaldehyde: provided in mfg spec sheet).

[4] Assumes PM (Filterable + Condensable) = PM_{10} = $PM_{2.5}$

[5] AP-42 Table 3.2-2 & adjusted for 972.48 Btu/scf

Lea Midstream, Inc - The Dude Processing Plant

Heater & Reboiler Summary

Unit Name	Description	Heat Input	NO_X		CO		VOC		SO_2		PM_{10}		$PM_{2.5}$		H_2S		Total HAP	
		MMBtu/hr	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy
RBL-1	TEG Reboiler	1.5	0.15	0.64	0.12	0.54	8.09E-03	0.035	1.10E-03	4.83E-03	0.011	0.049	0.011	0.049	--	--	2.77E-03	0.012
HO-1	Amine Hot Oil Heater	26.4	0.39	1.71	0.48	2.08	0.14	0.62	0.019	0.085	0.20	0.86	0.20	0.86	--	--	0.049	0.21
HO-2	Cryo Hot Oil Heater	5.07	0.50	2.18	0.42	1.83	0.027	0.12	3.72E-03	0.016	0.038	0.17	0.038	0.17	--	--	9.35E-03	0.041
HO-3	Stabilier Hot Oil Heater	3.5	0.34	1.50	0.29	1.26	0.019	0.083	2.57E-03	0.011	0.026	0.11	0.026	0.11	--	--	6.45E-03	0.028
HO-4	Train 2 Hot Oil Heater	19.86	1.95	8.53	1.64	7.16	0.11	0.47	0.015	0.064	0.15	0.65	0.15	0.65	--	--	0.037	0.16
HT-1	Regen Gas Heater	10.5	1.03	4.51	0.86	3.79	0.057	0.25	7.71E-03	0.034	0.078	0.34	0.078	0.34	-	-	0.019	0.085
HT-2	Sour Water Stripper	1.0	0.098	0.43	0.082	0.36	5.39E-03	0.024	7.35E-04	3.22E-03	7.45E-03	0.033	7.45E-03	0.033	--	--	1.84E-03	8.08E-03

Lea Midstream, Inc - The Dude Processing Plant

Train 1: TEG Reboiler

Unit:	RBL-1	
Heat Input:	1.5	MMBTU/hr
Fuel Heat Value:	972.48	BTU/scf
Fuel Sulfur Content:	0.25	gr/100 scf
Operating Hours:	8,760	hours/yr
Fuel Usage:	1542.45	scf/hr
Fuel Usage:	0.002	MMscf/hr

Criteria Pollutant Emission Rates per Unit

	NO_x	CO	VOC	SO_2[1]	H_2S	PM^2	Units	Notes
Emission Factors	100	84	5.5	-	-	7.6	lb/MMscf	AP-42 Table 1.4-1 & 2
	95.34	80.09	5.24	-	-	7.25	lb/MMscf	Adjusted EF, per footnote a in Tables 1.4-1 and 1.4-2
	-	-	-	0.25	-	-	gr S / 100 scf	Engineering Estimate
	-	-	-	-	0.0	-	gr H_2S / 100 scf	Fuel Gas Analysis
Emissions	0.15	0.12	8.09E-03	1.10E-03	-	0.011	lb/hr[3]	
	0.64	0.54	0.035	4.83E-03	-	0.049	tons/year[4]	

HAP Emission Rates per Unit

	n-Hexane	Benzene	Toluene	HCHO	Total HAPs[5]	Units	Notes
Emission Factors	1.80	2.10E-03	3.40E-03	7.50E-02	-	lb/MMscf	AP-42 Table 1.4-3
	1.72	2.00E-03	3.24E-03	7.15E-02	-	lb/MMscf	Adjusted EF, per footnote a in Table 1.4-3
Emissions	2.65E-03	3.09E-06	5.00E-06	1.10E-04	2.77E-03	lb/hr[3]	
	0.012	1.35E-05	2.19E-05	4.83E-04	0.012	tons/year[4]	

Notes:

[1] SO_2 emissions based on fuel sulfur (0.25 gr/100 scf)

[2] Assumes $PM_{10} = PM_{2.5}$

[3] lb/hr emissions calculated using the following methods:

Criteria and HAPs lb/hr = EF (lb/MMscf) * Rating (MMBtu/hr) / Heat value (Btu/scf)

SO_2 (lb/hr) = [Sulfur Content (gr S / 100 scf) * SO2 to Sulfur Molar Ratio (64/32) + H_2S Content (gr H_2S / 100 scf) * DRE (%) * SO2 to H_2S Molar Ratio (64/34)] / (7000 g/lb) * Fuel Consumption (scf/hr)

H_2S (lb/hr) = H_2S Content (gr H_2S / 100 scf) / (7000 g/lb) * Fuel Consumption (scf/hr) * (1 - DRE (%))

[4] For all pollutant calculations, tons/year = lb/hr * Operating hours * 1ton/2000lb

[5] Total HAP emissions are the sum of all individual HAPs calculated.

Lea Midstream, Inc - The Dude Processing Plant

Train 1: Amine Hot Oil Heater

Unit:	HO-1	
Heat Input:	26.40	MMBTU/hr
Fuel Heat Value:	972	BTU/scf
Operating Hours:	8,760	hours/yr
Fuel Usage:	27147.20	scf/hr
Fuel Usage:	0.027	MMscf/hr

Criteria Pollutant Emission Rates per Unit

	NO_x[6]	CO[6]	VOC	SO_2[1]	H_2S	PM[2]	Units	Notes
Emission Factors	25	50	-	-	-	-	ppmv @ 3% O_2	Manufacturer specification
	46	28	-	-	-	-	lb/lb-mol	molecular weight
	-	-	5.5	-	-	7.60	lb/MMscf	AP-42 Table 1.4-1 & 2
	-	-	5.2	-	-	7.25	lb/MMscf	Adjusted EF, per footnote a in Tables 1.4-1 and 1.4-2
	-	-	-	0.25	-	-	gr S / 100 scf	Engineering Estimate
	-	-	-	-	0.00	-	gr H_2S / 100 scf	Fuel Gas Analysis
Emissions	0.39	0.48	0.14	0.019	-	0.20	lb/hr[3]	lb/ MMscf * hourly fuel usage
	1.71	2.08	0.62	0.085	-	0.86	tons/year[4]	lb/ MMscf * annual fuel usage / 2000 lb/ton

Speciated HAP Emission Rates

	n-Hexane	Benzene	Toluene	HCHO	Total HAPs[5]	Units	Notes
Emission Factors	1.80E+00	2.10E-03	3.40E-03	7.50E-02	-	lb/MMscf	AP-42 Table 1.4-3
	1.72E+00	2.00E-03	3.24E-03	7.15E-02	-	lb/MMscf	Adjusted EF, per footnote a in Table 1.4-3
Emissions	0.047	5.44E-05	8.80E-05	1.94E-03	0.049	lb/hr[3]	
	0.20	2.38E-04	3.85E-04	8.50E-03	0.21	tons/year[4]	

Notes:

[1] SO_2 emissions based on fuel sulfur (0.25 gr/100 scf)

[2] Assumes $PM_{10} = PM_{2.5}$

[3] lb/hr emissions calculated using the following methods:

Criteria and HAPs lb/hr = EF (lb/MMscf) * Rating (MMBtu/hr) / Heat value (Btu/scf)

SO_2 (lb/hr) = [Sulfur Content (gr S / 100 scf) * SO2 to Sulfur Molar Ratio (64/32) + H_2S Content (gr H_2S / 100 scf) * DRE (%) * SO2 to H_2S Molar Ratio (64/34)] / (7000 g/lb) * Fuel Consumption (scf/hr)

H_2S (lb/hr) = H_2S Content (gr H_2S / 100 scf) / (7000 g/lb) * Fuel Consumption (scf/hr) * (1 - DRE (%))

[4] For all pollutant calculations, tons/year = lb/hr * Operating hours * 1ton/2000lb

[5] Total HAP emissions are the sum of all individual HAPs calculated.

[6] PV= nRT = n = PV/RT

P=	1.00	ATM					
Gas Constant, R=	1.31	(atm*ft3)/(lb-mole*K)					
T=	624.00	°F =	328.889	°C =	602.0389	K	

Greenhouse Emissions

	CO_2	CH_4	N_2O	CO_{2e}	Units	Notes
Emission Factors	1	28	265	-	-	GWP
	53.0600	1.00E-03	0.0001	-	kg/MMBtu	40 CFR 98 Subpart C, Table C-1 & C-2
Total Emissions	1,400.78	0.026	2.64E-03	1,402.22	kg/hr	kg/ MMBtu * hourly natural gas heat input
	12,270.87	0.23	0.023	12,283.47	mton/yr	kg/ MMBtu * annual natural gas heat input

Lea Midstream, Inc - The Dude Processing Plant

Train 1: Cryo Hot Oil Heater

Unit:	HO-2	
Heat Input:	5.07	MMBTU/hr
Fuel Heat Value:	972	BTU/scf
Operating Hours:	8,760	hours/yr
Fuel Usage:	5,213.50	scf/hr
Fuel Usage:	0.005	MMscf/hr

Criteria Pollutant Emission Rates per Unit

	NO_x	CO	VOC	SO_2[1]	H_2S	PM^2	Units	Notes
Emission Factors	100	84	5.5	-	-	7.60	lb/MMscf	AP-42 Table 1.4-1 & 2
	95.3	80.1	5.2	-	-	7.25	lb/MMscf	Adjusted EF, per footnote a in Tables 1.4-1 and 1.4-2
	-	-	-	0.25	-	-	gr S / 100 scf	Engineering Estimate
	-	-	-	-	0.00	-	gr H_2S / 100 scf	Fuel Gas Analysis
Emissions	0.50	0.42	0.027	3.72E-03	-	0.038	lb/hr[3]	lb/ MMscf * hourly fuel usage
	2.18	1.83	0.12	0.016	-	0.17	tons/year[4]	lb/ MMscf * annual fuel usage / 2000 lb/ton

Speciated HAP Emission Rates

	n-Hexane	Benzene	Toluene	HCHO	Total HAPs[5]	Units	Notes
Emission Factors	1.80E+00	2.10E-03	3.40E-03	7.50E-02	-	lb/MMscf	AP-42 Table 1.4-3
	1.72E+00	2.00E-03	3.24E-03	7.15E-02	-	lb/MMscf	Adjusted EF, per footnote a in Table 1.4-3
Emissions	8.95E-03	1.04E-05	1.69E-05	3.73E-04	9.35E-03	lb/hr[3]	
	0.039	4.57E-05	7.40E-05	1.63E-03	0.041	tons/year[4]	

Notes:

[1] SO_2 emissions based on fuel sulfur (0.25 gr/100 scf)

[2] Assumes $PM_{10} = PM_{2.5}$

[3] lb/hr emissions calculated using the following methods:

Criteria and HAPs lb/hr = EF (lb/MMscf) * Rating (MMBtu/hr) / Heat value (Btu/scf)

SO_2 (lb/hr) = [Sulfur Content (gr S / 100 scf) * SO2 to Sulfur Molar Ratio (64/32) + H_2S Content (gr H_2S / 100 scf) * DRE (%) * SO2 to H_2S Molar Ratio (64/34)] / (7000 g/lb) * Fuel Consumption (scf/hr)

H_2S (lb/hr) = H_2S Content (gr H_2S / 100 scf) / (7000 g/lb) * Fuel Consumption (scf/hr) * (1 - DRE (%))

[4] For all pollutant calculations, tons/year = lb/hr * Operating hours * 1ton/2000lb

[5] Total HAP emissions are the sum of all individual HAPs calculated.

Lea Midstream, Inc - The Dude Processing Plant

Train 1: Stabilizer Hot Oil Heater

Unit:	HO-3	
Heat Input:	3.5	MMBTU/hr
Fuel Heat Value:	972.48	BTU/scf
Fuel Sulfur Content:	0.25	gr/100 scf
Operating Hours:	8,760	hours/yr
Fuel Usage:	3599.06	scf/hr
Fuel Usage:	0.004	MMscf/hr

Criteria Pollutant Emission Rates per Unit

	NO_x	CO	VOC	SO_2[1]	H_2S	PM[2]	Units	Notes
Emission Factors	100	84	5.5	-	-	7.6	lb/MMscf	AP-42 Table 1.4-1 & 2
	95.34	80.09	5.24	-	-	7.25	lb/MMscf	Adjusted EF, per footnote a in Tables 1.4-1 and 1.4-2
	-	-	-	0.25	-	-	gr S / 100 scf	Engineering Estimate
	-	-	-	-	0.00	-	gr H_2S / 100 scf	Fuel Gas Analysis
Emissions	0.34	0.29	0.019	2.57E-03	-	0.026	lb/hr[3]	
	1.50	1.26	0.083	0.011	-	0.11	tons/year[4]	

HAP Emission Rates per Unit

	n-Hexane	Benzene	Toluene	HCHO	Total HAPs[5]	Units	Notes
Emission Factors	1.8E+00	2.1E-03	3.4E-03	7.5E-02	-	lb/MMscf	AP-42 Table 1.4-3
	1.72E+00	2.00E-03	3.24E-03	7.15E-02	-	lb/MMscf	Adjusted EF, per footnote a in Table 1.4-3
Emissions	6.18E-03	7.21E-06	1.17E-05	2.57E-04	6.45E-03	lb/hr[3]	
	0.027	3.16E-05	5.11E-05	1.13E-03	0.028	tons/year[4]	

Notes:

[1] SO_2 emissions based on fuel sulfur (0.25 gr/100 scf)

[2] Assumes $PM_{10} = PM_{2.5}$

[3] lb/hr emissions calculated using the following methods:

Criteria and HAPs lb/hr = EF (lb/MMscf) * Rating (MMBtu/hr) / Heat value (Btu/scf)

SO_2 (lb/hr) = [Sulfur Content (gr S / 100 scf) * SO2 to Sulfur Molar Ratio (64/32) + H_2S Content (gr H_2S / 100 scf) * DRE (%) * SO2 to H_2S Molar Ratio (64/34)] / (7000 g/lb) * Fuel Consumption (scf/hr)

H_2S (lb/hr) = H_2S Content (gr H_2S / 100 scf) / (7000 g/lb) * Fuel Consumption (scf/hr) * (1 - DRE (%))

[4] For all pollutant calculations, tons/year = lb/hr * Operating hours * 1ton/2000lb

[5] Total HAP emissions are the sum of all individual HAPs calculated.

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Train 2: Hot Oil Heater

Unit:	HO-4	
Heat Input:	19.86	MMBTU/hr
Fuel Heat Value:	972	BTU/scf
Operating Hours:	8,760	hours/yr
Fuel Usage:	20,422.10	scf/hr
Fuel Usage:	0.020	MMscf/hr

Criteria Pollutant Emission Rates per Unit

	NO_x	CO	VOC	SO_2[1]	H_2S	PM^2	Units	Notes
Emission Factors	100	84	5.5	-	-	7.60	lb/MMscf	AP-42 Table 1.4-1 & 2
	95.3	80.1	5.2	-	-	7.25	lb/MMscf	Adjusted EF, per footnote a in Tables 1.4-1 and 1.4-2
	-	-	-	0.25	-	-	gr S / 100 scf	Engineering Estimate
	-	-	-	-	0	-	gr H_2S / 100 scf	Fuel Gas Analysis
Emissions	1.95	1.64	0.11	0.015	-	0.15	lb/hr[3]	lb/ MMscf * hourly fuel usage
	8.53	7.16	0.47	0.064	-	0.65	tons/year[4]	lb/ MMscf * annual fuel usage / 2000 lb/ton

Speciated HAP Emission Rates

	n-Hexane	Benzene	Toluene	HCHO	Total HAPs[5]	Units	Notes
Emission Factors	1.80E+00	2.10E-03	3.40E-03	7.50E-02	-	lb/MMscf	AP-42 Table 1.4-3
	1.72E+00	2.00E-03	3.24E-03	7.15E-02	-	lb/MMscf	Adjusted EF, per footnote a in Table 1.4-3
Emissions	0.035	4.09E-05	6.62E-05	1.46E-03	0.037	lb/hr[3]	
	0.15	1.79E-04	2.90E-04	6.40E-03	0.16	tons/year[4]	

Notes:

[1] SO_2 emissions based on fuel sulfur (0.25 gr/100 scf)

[2] Assumes $PM_{10} = PM_{2.5}$

[3] lb/hr emissions calculated using the following methods:

Criteria and HAPs lb/hr = EF (lb/MMscf) * Rating (MMBtu/hr) / Heat value (Btu/scf)

SO_2 (lb/hr) = [Sulfur Content (gr S / 100 scf) * SO2 to Sulfur Molar Ratio (64/32) + H_2S Content (gr H_2S / 100 scf) * DRE (%) * SO2 to H_2S Molar Ratio (64/34)] / (7000 g/lb) * Fuel Consumption (scf/hr)

H_2S (lb/hr) = H_2S Content (gr H_2S / 100 scf) / (7000 g/lb) * Fuel Consumption (scf/hr) * (1 - DRE (%))

[4] For all pollutant calculations, tons/year = lb/hr * Operating hours * 1ton/2000lb

[5] Total HAP emissions are the sum of all individual HAPs calculated.

Lea Midstream, Inc - The Dude Processing Plant

Train 1: Regeneration Gas Heater

Unit:	HT-1	
Heat Input:	10.50	MMBTU/hr
Fuel Heat Value:	972	BTU/scf
Operating Hours:	8,760	hours/yr
Fuel Usage:	10797.18	scf/hr
Fuel Usage:	0.011	MMscf/hr

Criteria Pollutant Emission Rates per Unit

	NO_x	CO	VOC	SO_2[1]	H_2S	PM^2	Units	Notes
Emission Factors	100	84	5.5	-	-	7.60	lb/MMscf	AP-42 Table 1.4-1 & 2
	95.3	80.1	5.2	-	-	7.25	lb/MMscf	Adjusted EF, per footnote a in Tables 1.4-1 and 1.4-2
	-	-	-	0.25	-	-	gr S / 100 scf	Engineering Estimate
	-	-	-	-	0	-	gr H_2S / 100 scf	Fuel Gas Analysis
Emissions	1.03	0.86	0.057	7.71E-03	-	0.078	lb/hr[3]	lb/ MMscf * hourly fuel usage
	4.51	3.79	0.25	0.034	-	0.34	tons/year[4]	lb/ MMscf * annual fuel usage / 2000 lb/ton

Speciated HAP Emission Rates

	n-Hexane	Benzene	Toluene	HCHO	Total HAPs[5]	Units	Notes
Emission Factors	1.80	2.10E-03	3.40E-03	0.075	-	lb/MMscf	AP-42 Table 1.4-3
	1.72	2.00E-03	3.24E-03	0.072	-	lb/MMscf	Adjusted EF, per footnote a in Table 1.4-3
Emissions	0.019	2.16E-05	3.50E-05	7.72E-04	0.019	lb/hr[3]	
	0.081	9.47E-05	1.53E-04	3.38E-03	0.085	tons/year[4]	

Notes:

[1] SO_2 emissions based on fuel sulfur (0.25 gr/100 scf)

[2] Assumes $PM_{10} = PM_{2.5}$

[3] lb/hr emissions calculated using the following methods:
Criteria and HAPs lb/hr = EF (lb/MMscf) * Rating (MMBtu/hr) / Heat value (Btu/scf)
SO_2 (lb/hr) = [Sulfur Content (gr S / 100 scf) * SO2 to Sulfur Molar Ratio (64/32) + H_2S Content (gr H_2S / 100 scf) * DRE (%) * SO2 to H_2S Molar Ratio (64/34)] / (7000 g/lb) * Fuel Consumption (scf/hr)
H_2S (lb/hr) = H_2S Content (gr H_2S / 100 scf) / (7000 g/lb) * Fuel Consumption (scf/hr) * (1 - DRE (%))

[4] For all pollutant calculations, tons/year = lb/hr * Operating hours * 1ton/2000lb

[5] Total HAP emissions are the sum of all individual HAPs calculated.

Lea Midstream, Inc - The Dude Processing Plant

Train 1: Sour Water Stripper Heater

Unit:	HT-2	
Heat Input:	1	MMBTU/hr
Fuel Heat Value:	972.48	BTU/scf
Fuel Sulfur Content:	0.25	gr/100 scf
Operating Hours:	8,760	hours/yr
Fuel Usage:	1028.30	scf/hr
Fuel Usage:	0.001	MMscf/hr

Criteria Pollutant Emission Rates per Unit

	NO_x	CO	VOC	SO_2[1]	H_2S	PM^2	Units	Notes
Emission Factors	100	84	5.5	-	-	7.6	lb/MMscf	AP-42 Table 1.4-1 & 2
	95.34	80.09	5.24	-	-	7.25	lb/MMscf	Adjusted EF, per footnote a in Tables 1.4-1 and 1.4-2
	-	-	-	0.25	-	-	gr S / 100 scf	Engineering Estimate
	-	-	-	-	0.00	-	gr H_2S / 100 scf	Fuel Gas Analysis
Emissions	0.098	0.082	5.39E-03	7.35E-04	-	7.45E-03	lb/hr[3]	
	0.43	0.36	0.024	3.22E-03	-	0.033	tons/year[4]	

HAP Emission Rates per Unit

	n-Hexane	Benzene	Toluene	HCHO	Total HAPs[5]	Units	Notes
Emission Factors	1.8E+00	2.1E-03	3.4E-03	7.5E-02	-	lb/MMscf	AP-42 Table 1.4-3
	1.72E+00	2.00E-03	3.24E-03	7.15E-02	-	lb/MMscf	Adjusted EF, per footnote a in Table 1.4-3
Emissions	1.76E-03	2.06E-06	3.33E-06	7.35E-05	1.84E-03	lb/hr[3]	
	7.73E-03	9.02E-06	1.46E-05	3.22E-04	8.08E-03	tons/year[4]	

Notes:

[1] SO_2 emissions based on fuel sulfur (0.25 gr/100 scf)

[2] Assumes $PM_{10} = PM_{2.5}$

[3] lb/hr emissions calculated using the following methods:

Criteria and HAPs lb/hr = EF (lb/MMscf) * Rating (MMBtu/hr) / Heat value (Btu/scf)

SO_2 (lb/hr) = [Sulfur Content (gr S / 100 scf) * SO2 to Sulfur Molar Ratio (64/32) + H_2S Content (gr H_2S / 100 scf) * DRE (%) * SO2 to H_2S Molar Ratio (64/34)] / (7000 g/lb) * Fuel Consumption (scf/hr)

H_2S (lb/hr) = H_2S Content (gr H_2S / 100 scf) / (7000 g/lb) * Fuel Consumption (scf/hr) * (1 - DRE (%))

[4] For all pollutant calculations, tons/year = lb/hr * Operating hours * 1ton/2000lb

[5] Total HAP emissions are the sum of all individual HAPs calculated.

Lea Midstream, Inc - The Dude Processing Plant

Train 1: TEG Dehydrator

Emission Unit: DEHY-1
Source Description: TEG Dehydrator 1 w/ Condenser
Operating Hours: 8,760 hrs/yr
Throughput: 116 MMSCFD

Uncontrolled [1]	VOC		H_2S		Total HAP		Hexane		Benzene		Toluene		Ethylbenzene		Xylene	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Uncontrolled Flash Tank Overheads[2]	117.67	515.38	0.015	0.067	6.65	29.11	1.40	6.11	3.85	16.87	1.23	5.37	0.094	0.41	0.080	0.35
Uncontrolled Condenser Overheads[3]	98.21	430.18	0.029	0.13	38.01	166.49	1.53	6.71	28.99	127.00	7.10	31.09	0.27	1.19	0.39	1.69
Uncontrolled Emissions Per Unit	**215.88**	**945.56**	**0.044**	**0.19**	**44.66**	**195.61**	**2.93**	**12.82**	**32.85**	**143.86**	**8.33**	**36.47**	**0.37**	**1.60**	**0.47**	**2.04**

Controlled [2,3]	VOC		H_2S		Total HAP		Hexane		Benzene		Toluene		Ethylbenzene		Xylene	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Controlled Flash Tank Overheads[2]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Controlled Condenser Overheads[3]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Controlled Emissions Per Unit	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

[1] Emissions estimated using BR&E ProMax.

[2] Flash Tank overheads are sent to the LP flare (LP-FLARE) for destruction with 100% capture efficiency and 98% DRE. Emissions are represented at that unit.

[3] BTEX non-condensable overheads are sent to the BTEX Combustor (COMB-1) for combustion with a 100% capture efficiency and a 98% DRE. Emissions are represented at that unit.

Lea Midstream, Inc - The Dude Processing Plant

Train 1: Amine Sweetner

Emission Unit: Amine-1
Source Description: Amine Treating Unit 1
Operating Hours: 8,760 hrs/yr
Throughput: 120 MMSCFD

Uncontrolled [1]	**VOC**		**H_2S**		**Total HAP**		**Hexane**		**Benzene**		**Toluene**		**Ethylbenzene**		**Xylene**	
	lb/hr	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**
Uncontrolled Flash Tank Overheads[2]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uncontrolled Condenser Overheads	31.85	139.51	1,777.16	7,783.98	29.20	127.88	2.88E-03	0.013	22.56	98.81	6.14	26.89	0.39	1.70	0.49	2.17
Uncontrolled Emissions Per Unit	**31.85**	**139.51**	**1,777.16**	**7,783.98**	**29.20**	**127.88**	**2.88E-03**	**0.013**	**22.56**	**98.81**	**6.14**	**26.89**	**0.39**	**1.70**	**0.49**	**2.17**

Controlled [3]	**VOC**		**H_2S**		**Total HAP**		**Hexane**		**Benzene**		**Toluene**		**Ethylbenzene**		**Xylene**	
	lb/hr	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**
Controlled Flash Tank Overheads[3]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Controlled Condenser Overheads	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Controlled Emissions Per Unit	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

[1] Emissions estimated using BR&E ProMax.

[2] Flash Tank Gas overheads are injected back to the fuel line and are not a source of emissions.

[3] Acid Gas overheads are controlled by AGI-1. During AGI-1 downtime, acid gas is sent to the AGI Flare (AGI-FLARE) for combustion with a 100% capture efficiency and a 98% DRE. Emissions are represented at that unit.

Lea Midstream, Inc - The Dude Processing Plant

Train 1: Condensate Storage Tanks

Emission unit number(s): TK-1 through TK-8
Source description: 400 bbl Condensate Tanks

Annual Operating Hours: 8,760
Number of Tanks: 8
Capacity of Tanks: 400 bbl
Hourly Throughout: 32.13 bbl/hr
Daily Throughput: 771.24 bbl/d
Annual Throughput: 281,501.74 bbl/yr

Condensate Storage Tank Emissions[1,2]

Component	Uncontrolled Emissions			
	Flash (lb/hr)	Working and Breathing (lb/hr)	Total per Tank (lb/hr)	Total Emissions Per Tank (tpy)
N2	-	1.92E-11	2.40E-12	1.05E-11
CO2	-	1.77E-08	2.22E-09	9.71E-09
H2S	-	2.35E-06	2.94E-07	1.29E-06
C1	-	7.35E-11	9.19E-12	4.02E-11
C2	-	2.24E-05	2.80E-06	1.23E-05
C3	-	0.040	4.97E-03	0.022
iC4	-	0.70	0.088	0.38
C4	-	3.92	0.49	2.15
iC5	-	2.35	0.29	1.29
C5	-	1.97	0.25	1.08
C6	-	0.29	0.037	0.16
nC7	-	0.059	7.33E-03	0.032
Octane	-	0.019	2.32E-03	0.010
Water	-	4.55E-13	5.68E-14	2.49E-13
EG	-	-	-	-
TEG	-	-	-	-
DEA	-	-	-	-
MDEA	-	-	-	-
PZ	-	-	-	-
2,2-Dimethylpropane	-	-	-	-
Cyclopentane	-	0.20	0.025	0.11
2-Methylpentane	-	0.36	0.045	0.20
3-Methylpentane	-	0.19	0.024	0.11
Methylcyclopentane	-	0.21	0.026	0.11
Benzene	-	0.28	0.035	0.15
Cyclohexane	-	0.22	0.027	0.12
2-Methylhexane	-	0.023	2.84E-03	0.012
3-Methylhexane	-	0.037	4.65E-03	0.020
Methylcyclohexane	-	0.084	0.011	0.046
2,5-Xylenol	-	-	-	-
Toluene	-	0.065	8.14E-03	0.036
2-Methylheptane	-	6.34E-03	7.92E-04	3.47E-03
Ethylcyclohexane	-	3.08E-03	3.85E-04	1.69E-03
Ethylbenzene	-	3.94E-03	4.92E-04	2.16E-03
o-Xylene	-	2.78E-03	3.48E-04	1.52E-03
Nonane	-	1.78E-03	2.22E-04	9.73E-04
Decane	-	5.90E-05	7.37E-06	3.23E-05
VOC	**-**	**11.04**	**1.38**	**6.04**
Total HAPS	**-**	**0.65**	**0.081**	**0.35**
Total H_2S	**-**	**2.35E-06**	**2.94E-07**	**1.29E-06**

[1] Uncontrolled emissions are calculated using BR&E ProMax.

[2] Emissions are sent to the VRU with a 100% capture efficiency. During VRU Downtime emissions are sent to the Loading Combustor (COMB-2) with a 100% capture efficiency and 98% DRE. Controlled emissions are represented at COMB-2.

Lea Midstream, Inc - The Dude Processing Plant

Train 1: Produced Water Storage Tanks

Emission unit number(s): PWTK-1 through PWTK-2
Source description: 400 bbl Produced Water Tanks

Annual Operating Hours:	8,760	
Number of Tanks:	2	
Capacity of Tanks:	400	bbl
Hourly Throughout:	2.58	bbl/hr
Daily Throughput:	61.89	bbl/d
Annual Throughput:	22,591.27	bbl/yr

Produced Water Storage Tank Emissions[1,2]

Component	Uncontrolled Emissions			
	Flash (lb/hr)	Working and Breathing (lb/hr)	Total per Tank (lb/hr)	Total Emissions Per Tank (tpy)
N2	-	2.00E-05	1.00E-05	4.38E-05
CO2	-	3.94E-08	1.97E-08	8.63E-08
H2S	-	1.20E-07	6.02E-08	2.64E-07
C1	-	9.41E-03	4.70E-03	0.021
C2	-	0.13	0.067	0.29
C3	-	0.36	0.18	0.79
iC4	-	0.058	0.029	0.13
C4	-	0.22	0.11	0.47
iC5	-	0.068	0.034	0.15
C5	-	0.068	0.034	0.15
C6	-	0.017	8.49E-03	0.037
nC7	-	3.38E-03	1.69E-03	7.40E-03
Octane	-	1.05E-03	5.27E-04	2.31E-03
Water	-	0.031	0.016	0.068
EG	-	2.61E-12	1.30E-12	5.71E-12
TEG	-	1.07E-11	5.34E-12	2.34E-11
DEA	-	-	-	-
MDEA	-	1.15E-08	5.76E-09	2.52E-08
PZ	-	7.30E-07	3.65E-07	1.60E-06
2,2-Dimethylpropane	-	-	-	-
Cyclopentane	-	0.036	0.018	0.079
2-Methylpentane	-	0.019	9.25E-03	0.041
3-Methylpentane	-	0.012	6.24E-03	0.027
Methylcyclopentane	-	0.039	0.019	0.085
Benzene	-	0.29	0.14	0.63
Cyclohexane	-	0.040	0.020	0.088
2-Methylhexane	-	1.20E-03	6.02E-04	2.64E-03
3-Methylhexane	-	2.23E-03	1.12E-03	4.89E-03
Methylcyclohexane	-	0.010	5.17E-03	0.023
2,5-Xylenol	-	1.66E-09	8.31E-10	3.64E-09
Toluene	-	0.058	0.029	0.13
2-Methylheptane	-	3.14E-04	1.57E-04	6.88E-04
Ethylcyclohexane	-	3.42E-04	1.71E-04	7.49E-04
Ethylbenzene	-	1.76E-03	8.82E-04	3.86E-03
o-Xylene	-	2.68E-03	1.34E-03	5.86E-03
Nonane	-	1.17E-04	5.84E-05	2.56E-04
Decane	-	3.36E-06	1.68E-06	7.36E-06
VOC	**-**	**1.30**	**0.65**	**2.85**
Total HAPS	**-**	**0.37**	**0.18**	**0.80**
Total H_2S	**-**	**1.20E-07**	**6.02E-08**	**2.64E-07**

[1] Uncontrolled emissions are calculated using BR&E ProMax.

[2] Emissions are sent to the VRU with a 100% capture efficiency. During VRU Downtime emissions are sent to the Loading

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Train 1: Truck Loading (Condensate Tanks)

Equation[1]:

$$L_L = 12.46 * SPM$$

Variables[1]:

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])

																LOAD		
Unit	**Material Loaded [2]**	**Loading Method**	**S**	**P_{max} [6] (psia)**	**M [6] (lb/lbmol)**	**T_{max} [4] (°R)**	**L_L (lbs/1000 gal)**	**Hourly Throughput [5] (gal/hr)**	**VOC Wt %**	**HAP Wt %**	**H_2S Wt %[3]**	**Capture Efficiency**	**VOC Vapor Loading Losses (lb/hr)**	**HAP Vapor Loading Losses (lb/hr)**	**H_2S Vapor Loading Losses (lb/hr)**	**Hourly VOC Emissions (lb/hr)**	**Hourly HAP Emissions (lb/hr)**	**Hourly H_2S Emissions [3] (lb/hr)**
LOAD	Condensate	Submerged	0.6	12.88	67.02	531.75	12.14	15,120	100.00%	5.85%	0.00%	70.00%	183.51	10.73	3.91E-05	183.51	10.73	3.91E-05
												Uncontrolled Total	183.51	10.73	3.91E-05	**183.51**	**10.73**	**3.91E-05**
												Controlled Total	55.05	3.22	1.17E-05	55.05	3.22	1.17E-05

																LOAD		
Unit	**Material Loaded [2]**	**Loading Method**	**S**	**P_{avg} [7] (psia)**	**M [7] (lb/lbmol)**	**T_{avg} [4] (°R)**	**L_L (lbs/1000 gal)**	**Annual Throughput [7] (gal/yr)**	**VOC Wt %**	**HAP Wt %**	**H_2S Wt %[3]**	**Capture Efficiency**	**VOC Vapor Loading Losses (tpy)**	**HAP Vapor Loading Losses (tpy)**	**H_2S Vapor Loading Losses (tpy)**	**Annual VOC Emissions (tpy)**	**Annual HAP Emissions (tpy)**	**Annual H_2S Emissions [3] (tpy)**
LOAD	Condensate	Submerged	0.6	12.88	67.02	531.75	12.14	11,823,073	100.00%	5.85%	0.00%	70.00%	71.75	4.19	1.53E-05	71.75	4.19	1.53E-07
												Uncontrolled Total	71.75	4.19	1.53E-05	**71.75**	**4.19**	**1.53E-07**
												Controlled Total	21.52	1.26	4.59E-06	21.52	1.26	4.59E-08

[1] Loading loss equation and variables are from AP-42, Section 5.2, Transportation and Marketing of Petroleum Liquids.
[2] Material loaded is 100% Condensate.
[3] H_2S content is conservatively assumed.
[4] The average temperature is 71.75° F.
[5] The maximum hourly throughput is based on the assumption that two trucks with a 180 bbl capacity can be loaded in an hour.
[6] TVP and MW pulled from Max Hourly promax
[7] TVP, MW, and annual throughput pulled from Annual Average promax

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Train 1: Truck Loading (Produced Water Tanks)

Equation[1]:

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

Variables[1]:

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])

																PW-LOAD		
Unit	**Material Loaded [2]**	**Loading Method**	**S**	**P_{max} [6] (psia)**	**M [6] (lb/lbmol)**	**T_{max} [4] (°R)**	**L_L (lbs/1000 gal)**	**Hourly Throughput [5] (gal/hr)**	**VOC Wt %**	**HAP Wt %**	**H_2S Wt %[3]**	**Capture Efficiency**	**VOC Vapor Loading Losses (lb/hr)**	**HAP Vapor Loading Losses (lb/hr)**	**H_2S Vapor Loading Losses (lb/hr)**	**Hourly VOC Emissions (lb/hr)**	**Hourly HAP Emissions (lb/hr)**	**Hourly H_2S Emissions [3] (lb/hr)**
PW-LOAD	Produced Water	Submerged	0.6	12.88	52.57	531.75	9.52	15,120	88.23%	24.79%	0.14%	70%	127.00	35.68	0.20	127.00	35.68	0.20
												Uncontrolled Total	127.00	35.68	0.20	**127.00**	**35.68**	**0.20**
												Controlled Total	38.10	10.71	0.059	38.10	10.71	0.059

																PW-LOAD		
Unit	**Material Loaded [2]**	**Loading Method**	**S**	**P_{avg} [7] (psia)**	**M [7] (lb/lbmol)**	**T_{avg} [4] (°R)**	**L_L (lbs/1000 gal)**	**Annual Throughput [7] (gal/yr)**	**VOC Wt %**	**HAP Wt %**	**H_2S Wt %[3]**	**Capture Efficiency**	**VOC Vapor Loading Losses (tpy)**	**HAP Vapor Loading Losses (tpy)**	**H_2S Vapor Loading Losses (tpy)**	**Annual VOC Emissions (tpy)**	**Annual HAP Emissions (tpy)**	**Annual H_2S Emissions [3] (tpy)**
PW-LOAD	Produced Water	Submerged	0.6	12.88	52.57	531.75	9.52	948,833	88.23%	24.79%	0.14%	70%	3.98	1.12	6.12E-03	3.98	1.12	6.12E-05
												Uncontrolled Total	3.98	1.12	6.12E-03	**3.98**	**1.12**	**6.12E-05**
												Controlled Total	1.20	0.34	1.84E-03	1.20	0.34	1.84E-05

[1] Loading loss equation and variables are from AP-42, Section 5.2, Transportation and Marketing of Petroleum Liquids.
[2] Material loaded is 100% produced water.
[3] H_2S content is conservatively assumed.
[4] The average temperature is 71.75° F.
[5] The maximum hourly throughput is based on the assumption that two trucks with a 180 bbl capacity can be loaded in an hour.
[6] TVP and MW pulled from Max Hourly promax
[7] TVP, MW, and annual throughput pulled from Annual Average promax

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Train 1: High Pressure Emergency Flare

Emission Unit: HP FLARE
Source Description: Dual-tip High Pressure and Low Pressure Flare

Flare Information	
Unit(s):	HP-FLARE
Unit Count:	1
Annual Operating Hours:	8,760
Combustion Efficiency (%):	98%

Pilot Parameters				
Activity	**Parameters**	**Hourly Value**	**Unit**	**Notes:**
High Pressure Pilot + Purge	Hourly Volume Flow Rate	130.00	scf/hr	Manufacturer specification
	Natural Gas Heat Value	876.10	Btu/scf	Inlet Gas Analysis
	Annual Volume Flow Rate	1.14	MMscf/yr	
	Hourly Heat Rate	0.11	MMBtu/hr	
	Annual Heat Rate	997.71	MMBtu/yr	

SSM Input Information						
SSM Activity	**Parameters**	**Hourly**	**Unit**	**Annual**	**Unit**	**Notes:**
Total SSM	Volume Flow Rate	30294.75	scf/hr	0.06	MMscf/yr	Total flow rate during events
	Weighted Heating Value	1172.92	Btu/scf	1156.57	Btu/scf	Max hourly and Annual Average
	Heat Rate	35.53	MMBtu/hr	64.81	MMBtu/yr	
	VOC	490.26	lb/hr VOC	0.34	tpy VOC	SSM Summary
	HAP	14.12	lb/hr HAPs	9.79E-03	tpy HAPs	SSM Summary
	H_2S	0.73	lb H_2S	2.59E-03	tpy H_2S	SSM Summary
VRU Blowdowns	Volume Flow Rate	260.00	scf/hr	6.24E-03	MMscf/yr	Total flow rate for all units
	Heating Value	1137.34	Btu/scf	1137.34	Btu/scf	Max hourly and Annual Average
	Heat Rate	0.30	MMBtu/hr	7.10	MMBtu/yr	
	VOC	4.90	lb/hr VOC	0.06	tpy VOC	SSM Summary
	HAP	0.14	lb/hr HAPs	1.72E-03	tpy HAPs	SSM Summary
	H_2S	0.12	lb H_2S	1.40E-03	tpy H_2S	SSM Summary
Dehy Blowdowns	Volume Flow Rate	23447.56	scf/hr	0.02	MMscf/yr	Total flow rate for all units
	Heating Value	1183.31	Btu/scf	1183.31	Btu/scf	Max hourly and Annual Average
	Heat Rate	27.75	MMBtu/hr	27.75	MMBtu/yr	
	VOC	460.53	lb/hr VOC	0.23	tpy VOC	SSM Summary
	HAP	13.26	lb/hr HAPs	6.63E-03	tpy HAPs	SSM Summary
	H_2S	0.02	lb H_2S	9.76E-06	tpy H_2S	SSM Summary
Filter Blowdowns	Volume Flow Rate	6587.19	scf/hr	0.03	MMscf/yr	Total flow rate for all units
	Heating Value	1137.34	Btu/scf	1137.34	Btu/scf	Max hourly and Annual Average
	Heat Rate	7.49	MMBtu/hr	29.97	MMBtu/yr	
	VOC	24.82	lb/hr VOC	0.05	tpy VOC	SSM Summary
	HAP	0.72	lb/hr HAPs	1.45E-03	tpy HAPs	SSM Summary
	H_2S	0.59	lb H_2S	1.18E-03	tpy H_2S	SSM Summary

Flare Emission Calculation

Description	NO_X[1]	CO[1]	VOC	SO_2[1]	H_2S[1]	HAPs	Units	Notes
Emission Factors	0.068	0.31	-	-	-	-	lb/MMBTU	AP-42 Ch 13.5.1 Table 13.5-1 & Table 13.5-2
	-	-	0.23	-	-	8.90E-06	lb/hr	Fuel Gas Analysis
Fuel Sulfur Content	-	-	-	0.25	-	-	gr S/100scf	Fuel sulfur content (gr/100scf)
	-	-	-	0.0004	-	-	lb S/ Mscf	gr S/100 scf * (1 lb/7000 gr) * (1000scf/Mscf)
HP Pilot Emissions	7.74E-03	0.035	4.67E-03	9.29E-05	-	1.78E-07	lb/hr	EF * LPF Heat Rate (MMBtu/hr)
	0.034	0.15	0.020	4.07E-04	-	7.80E-07	tpy	EF * LPF Heat Rate (Mmbtu/yr) / 2000 (lb/ton)
High Pressure Flare SSM Emissions	2.42	11.02	9.81	1.34	0.015	0.28	lb/hr	EF * HPF Heat Rate (MMBtu/hr)
	2.20E-03	0.010	6.77E-03	4.88E-03	5.18E-05	1.96E-04	tpy	EF * HPF Heat Rate (MMBtu/yr) / 2000 (lb/ton)
Total High Pressure Flare Emissions	2.42	11.05	9.81	1.34	0.015	0.28	lb/hr	
	0.036	0.16	0.027	5.29E-03	5.18E-05	1.97E-04	tpy	

Notes:

[1] Flare NO_X and CO emission factors: AP-42 Chapter 13.5. SO_2: Mass balance assuming 98% combustion of H_2S and 98% conversion of combusted H_2S to SO_2:
Pilot Gas SO_2 Emissions (lb/hr) = [(Pilot Gas Flow (Mscf/hr) * Fuel Gas Sulfur Content (lb S/Mscf)*(64 lb/lbmol SO_2 / 32 lb/lbmol S)) + (Pilot Gas Flow (Mscf/yr) * Fuel Gas H_2S Content (lb H_2S/Mscf)*(64 lb/lbmol SO_2 /32 lb/lbmol H_2S)*(DRE))]
Pilot Gas H_2S Emissions (lb/hr) = [Pilot Gas Flow Rate (Mscf/yr) * Fuel Gas H_2S Content (lb H_2S/Mscf) * (1 - DRE)]
Process SO_2 Emissions (lb/hr) = [H_2S Mass Flow Rate (lb/hr) * DRE * (64 lb/lbmol SO_2 / 32 lb/lbmol H_2S)]
Process SO_2 Emissions (tpy) = [H_2S Mass Flow Rate (tpy) * DRE * (64 lb/lbmol SO_2 / 32 lb/lbmol H_2S)]

[2] VOC and HAP emissions estimated based on event stream routed to HP FLARE and 98% efficiency. H_2S emissions estimated based on event stream routed to HP FLARE and 100% conversion to SO_2.

Lea Midstream, Inc - The Dude Processing Plant
HP Flare Malfunction Calculations

Emission Unit: HP-FLARE
Source Description: NRU Membrane Waste Gas
Destruction Efficiency: 98%

Gas Volume:[1]

Max Hourly Flared Gas (MSCF/hr):	17.6
Max Daily Flared Gas (MMSCFD):	0.42

Component	Mol Wt (lb/lb-mol) [2]	Component Net Heating Value (BTU/scf) [2]	NRU Membrane Residue (mol%)
Helium	4.003	0	0.00%
Nitrogen	28.013	0	3.61%
Carbon Dioxide	44.010	0	0.00%
Oxygen and Argon	31.999	0	0.00%
H2S	34.081	587	0.00%
Methane	16.043	909	80.70%
Ethane	30.069	1,619	14.41%
Propane	44.096	2,315	1.24%
i-Butane	58.122	3,000	0.02%
n-Butane	58.122	3,011	0.02%
i-Pentane	72.149	3,699	0.00%
n-Pentane	72.149	3,707	0.00%
benzene	78.112	3,591	0.00%
cyclohexane	84.160	4,180	0.00%
methylcyclopentane	84.160	4,198	0.00%
n-hexane	86.175	4,404	0.00%
Other Hexanes	86.175	4,404	0.00%
n-heptane	100.202	5,100	0.00%
toluene	92.138	4,273	0.00%
ethylbenzene	106.165	4,971	0.00%
m-xylene+p-xylene	106.165	4,905	0.00%
n-octane	114.229	5,796	0.00%
o-xylene	106.165	4,958	0.00%
n-nonane	128.255	6,493	0.00%
n-decane	142.282	7,190	0.00%
n-undecane	156.308	7,886	0.00%
n-dodecane	170.335	8,583	0.00%
n-tridecane	184.361	9,279	0.00%
TOTAL =	**18.86**	**997.13**	**100.00%**

Stream Emission Calculation:

Components	Hourly Emissions (pph)[3]	Hourly MMBTU Rate [4] MMBTU/hr
Helium	0.00	0.00
Nitrogen	46.85	0.00
Carbon Dioxide	0.01	0.00
Oxygen and Argon	0.00	0.00
H2S	0.00	0.00E+00
Methane	600.14	12.91
Ethane	200.83	4.10
Propane	25.31	0.50
i-Butane	0.45	0.01
n-Butane	0.66	0.01
i-Pentane	0.02	0.00
n-Pentane	0.01	0.00
benzene	0.00	0.00
cyclohexane	0.00	0.00
methylcyclopentane	0.00	0.00
n-hexane	0.00	0.00
Other Hexanes	0.00	0.00
n-heptane	0.00	0.00
toluene	0.00	0.00
ethylbenzene	0.00	0.00
m-xylene+p-xylene	0.00	0.00
n-octane	0.00	0.00
o-xylene	0.00	0.00
n-nonane	0.00	0.00
n-decane	0.00	0.00
n-undecane	0.00	0.00
n-dodecane	0.00	0.00
n-tridecane	0.00	0.00
Total BTU Values =		**17.54**

Malfunction Flaring Summary	
	pph
Total =	874.28
Total VOC =	26.45
Total HAP =	2.13E-04
Total H_2S =	--

Controlled Flaring Stream[5]	
	pph
VOC =	0.53
HAP =	4.26E-06
H_2S =	--

Notes:
(1) Conservatively estimated hourly volume determined from historical site data.
(2) Component Molecular Weights from the following source: BR&E Promax
Component Net Heating Values from the following source: BR&E Promax
(3) Hourly and Annual Event gas emissions calculated as follows:
Hourly Emissions (lb/hr) = Hourly Gas Volume (scf/hr) * Component Mol Wt (lb/lb-mol) * Component Mole% / 379.4 ft^3/lb mol
Annual Emissions (tpy) = Annual Gas Volume (scf/yr) * Component Mol Wt (lb/lb-mol) * Component Mole% / 379.4 ft^3/lb mol / 2000 lb/ton
(4) Component BTU/hr = [Component Hourly Emissions (pph) * Component Net Heating Value (BTU/scf) * 379.4 ft^3/lb-mol] / Component Mol Wt (lb/lb-mol)
Component BTU/yr = [Component Annual Emissions (tpy) * 2000 lb/ton * Component Net Heating Value (BTU/scf) * 379.4 ft^3/lb-mol] / Component Mol Wt (lb/lb-mol)
Total Net BTU/event = Sum of all Individual Component BTU/event
(5) VOC, HAP and H_2S emissions estimated based on event stream routed to flare and 98% efficiency.

Gas Flaring Emissions Calculations

Unit ID	Pollutant	Emission Factors (lb/MMBTU)[1]	Emissions lb/hr
HP-FLARE	NO_X	0.138	2.42
	CO	0.2755	4.83
	VOC	Mass Balance [2]	0.53
	HAP	Mass Balance [2]	<0.01
	H_2S	Mass Balance [2]	0.00
	SO_2	Stoichiometric[1]	0.00

Flare Stream: 17.54 Max Net Hourly MMBTU Value (MMBTU/hr)

Notes:
(1) Flare NO_X and CO emission factors: TNRCC RG-109 (high Btu; other). SO_2: Mass balance assuming 98% combustion of H_2S and 100% conversion of combusted H_2S to SO_2:
Pilot Gas SO_2 Emissions (lb/hr) = [(Pilot Gas Flow (Mscf/hr) * Fuel Gas Sulfur Content (lb S/Mscf)*(64 lb/lbmol SO_2 / 32 lb/lbmol S)) + (Pilot Gas Flow (Mscf/yr) * Fuel Gas H_2S Content (lb H_2S/Mscf)*(64
(2) VOC, HAP and H_2S emissions estimated based on event stream routed to flare and 98% efficiency.

Lea Midstream, Inc - The Dude Processing Plant

Train 1: Low Pressure Process Flare

Emission Unit: LP FLARE

Source Description: Train 1- Low Pressure Process Flare

Flare Information	
Unit(s):	LP-FLARE
Unit Count:	1
Annual Operating Hours:	8,760
Combustion Efficiency (%):	98%

Pilot Parameters				
Activity	**Parameters**	**Value**	**Unit**	**Notes:**
Low Pressure Pilot & Purge	Hourly Volume Flow Rate	190.00	scf/hr	Manufacturer specification
	Natural Gas Heat Value	876.10	Btu/scf	Inlet Gas Analysis
	Annual Volume Flow Rate	1.66	MMscf/yr	
	Hourly Heat Rate	0.17	MMBtu/hr	
	Annual Heat Rate	1458.19	MMBtu/yr	

Process Gas Input Information							
Activity	**Parameters**	**Hourly**	**Unit**	**Annual**	**Unit**	**Notes:**	
TEG Flash Gas	Hourly Volume Flow Rate	3113.81	scf/hr	27.28	MMscf/yr	Total flow rate to Flare	
	Max Hourly Heating Value	1541.20	Btu/scf	1541.20	Btu/scf	Net Heating Value from Flare Promax	
	Hourly Heat Rate	4.80	MMBtu/hr	42039.22	MMBtu/yr		
	H_2S mol%	0.55%	-			Dehy ProMax, TEG Flash Gas	
	VOC	117.67	lb/hr VOC	515.38	tpy VOC	Dehy ProMax, TEG Flash Gas	
	HAP	6.65	lb/hr HAPs	29.11	tpy HAPs	Dehy ProMax, TEG Flash Gas	
	H_2S	0.015	lb H_2S	0.067	tpy H_2S	Dehy ProMax, TEG Flash Gas	
Total SSM	Volume Flow Rate	2304763.56	scf/hr	21.37	MMscf/yr	Total flow rate during events	
	Weighted Heating Value	1137.34	Btu/scf	1137.34	Btu/scf	Max hourly and Annual Average	
	Heat Rate	2621.30	MMBtu/hr	24300.87	MMBtu/yr		
	VOC	25015.09	lb/hr VOC	201.17	tpy VOC	SSM Summary	
	HAP	730.46	lb/hr HAPs	5.87	tpy HAPs	SSM Summary	
	H_2S	595.80	lb H_2S	4.79	tpy H_2S	SSM Summary	
Compressor Blowdowns	Volume Flow Rate	2680.23	scf/hr	0.06	MMscf/yr	Total flow rate during events	
	Heating Value	1137.34	Btu/scf	1137.34	Btu/scf	Max hourly and Annual Average	
	Heat Rate	3.05	MMBtu/hr	73.16	MMBtu/yr		
	VOC	40.40	lb/hr VOC	0.48	tpy VOC	Compressor Blowdown Summary	
	HAP	1.18	lb/hr HAPs	0.01	tpy HAPs	Compressor Blowdown Summary	
	H_2S	0.96	lb H_2S	0.01	tpy H_2S	Compressor Blowdown Summary	
PSVs	Volume Flow Rate	1302083.33	scf/hr	1.30	MMscf/yr	Total flow rate during events	
	Heating Value	1137.34	Btu/scf	1137.34	Btu/scf	Max hourly and Annual Average	
	Heat Rate	1480.91	MMBtu/hr	1480.91	MMBtu/yr		
	VOC	6133.27	lb/hr VOC	12.27	tpy VOC	SSM Summary	
	HAP	179.10	lb/hr HAPs	0.36	tpy HAPs	SSM Summary	
	H_2S	146.08	lb H_2S	0.29	tpy H_2S	SSM Summary	
Pigging	Volume Flow Rate	1000000.00	scf/hr	20.00	MMscf/yr	Total flow rate during events	
	Heating Value	1137.34	Btu/scf	1137.34	Btu/scf	Max hourly and Annual Average	
	Heat Rate	1137.34	MMBtu/hr	22746.80	MMBtu/yr		
	VOC	18841.41	lb/hr VOC	188.41	tpy VOC	SSM Summary	
	HAP	550.19	lb/hr HAPs	5.50	tpy HAPs	SSM Summary	
	H_2S	448.76	lb H_2S	4.49	tpy H_2S	SSM Summary	
Malfunction Residue Flaring	Hourly Volume Flow Rate	23079.60	scf/hr	-	MMscf/yr	Total flow rate to Flare	
	Max Hourly Heating Value	1186.13	Btu/scf	1186.13	Btu/scf	Net Heating Value from Flare Promax	
	Hourly Heat Rate	27.38	MMBtu/hr	-	MMBtu/yr		
	H_2S mol%	0.00073%	-			Dehy ProMax, TEG Dry Gas	
	VOC	25015.00	lb/hr VOC	109565.70	tpy VOC	Dehy ProMax, TEG Dry Gas	
	HAP	664.37	lb/hr HAPs	2909.94	tpy HAPs	Dehy ProMax, TEG Dry Gas	
	H_2S	1.05E+00	lb H_2S	4.60E+00	tpy H_2S	Dehy ProMax, TEG Dry Gas	

Flare Emission Calculation

Description	NO_X[1]	CO[1]	VOC	SO_2[1]	H_2S[1]	HAPs	Units	Notes
Emission Factors	0.068	0.31	-	-	-	-	lb/MMBTU	AP-42 Ch 13.5.1 Table 13.5-1 & Table 13.5-2
	-	-	0.34	-	-	1.30E-05	lb/hr	Fuel Gas Analysis
Fuel Sulfur Content	-	-	-	0.25	-	-	gr S/100scf	Fuel sulfur content (gr/100scf)
	-	-	-	0.0004	-	-	lb S/ Mscf	gr S/100 scf * (1 lb/7000 gr) * (1000scf/Mscf)
Pilot Emissions	0.011	0.052	6.82E-03	1.36E-04	-	2.60E-07	lb/hr	EF * Pilot Heat Rate (MMBtu/hr)
	0.050	0.23	0.030	5.94E-04	-	1.14E-06	tpy	EF * Pilot Heat Rate (Mmbtu/yr) / 2000 (lb/ton)
Process Emissions	0.33	1.49	2.35	0.030	3.05E-04	0.13	lb/hr	EF * LPF Heat Rate (MMBtu/hr)
	1.43	6.52	10.31	0.13	1.34E-03	0.58	tpy	EF * LPF Heat Rate (Mmbtu/yr) / 2000 (lb/ton)
SSM Emissions	178.25	812.60	500.30	1,167.77	11.92	14.61	lb/hr	EF * LPF Heat Rate (MMBtu/hr)
	0.83	3.77	2.01E-03	9.39	4.79E-05	0.12	tpy	EF * LPF Heat Rate (Mmbtu/yr) / 2000 (lb/ton)
Total Flare Emissions	178.59	814.14	502.66	1,167.80	11.92	14.74	lb/hr	Pilot Emissions + Process Emissions + SSM Emissions
	2.31	10.51	10.34	9.52	1.38E-03	0.70	tpy	Pilot Emissions + Process Emissions + SSM Emissions

Notes:

[1] Flare NO_X and CO emission factors: AP-42 Chapter 13.5. SO_2: Mass balance assuming 98% combustion of H_2S and 100% conversion of combusted H_2S to SO_2:

Pilot Gas SO_2 Emissions (lb/hr) = [(Pilot Gas Flow (Mscf/hr) * Fuel Gas Sulfur Content (lb S/Mscf)*(64 lb/lbmol SO_2 / 32 lb/lbmol S)) + (Pilot Gas Flow (Mscf/yr) * Fuel Gas H_2S Content (lb H_2S/Mscf)*(64 lb/lbmol SO_2 /32 lb/lbmol H_2S)*(DRE))]

Pilot Gas H_2S Emissions (lb/hr) = [Pilot Gas Flow Rate (Mscf/yr) * Fuel Gas H_2S Content (lb H_2S/Mscf) * (1 - DRE)]

Process SO_2 Emissions (lb/hr) = [H_2S Mass Flow Rate (lb/hr) * DRE * (64 lb/lbmol SO_2 / 32 lb/lbmol H_2S)]

Process SO_2 Emissions (tpy) = [H_2S Mass Flow Rate (tpy) * DRE * (64 lb/lbmol SO_2 / 32 lb/lbmol H_2S)]

[2] VOC and HAP emissions estimated based on event stream routed to LP FLARE and 98% efficiency. H_2S emissions estimated based on event stream routed to LP FLARE and 100% conversion to SO_2.

Lea Midstream, Inc - The Dude Processing Plant

Train 2: SSM Flare

Emission Unit: FLARE-2
Source Description: Train 2 Flare

Flare Information	
Unit(s):	FLARE-2
Unit Count:	1
Annual Operating Hours:	8,760
Combustion Efficiency (%):	98%

Pilot Parameters				
Activity	**Parameters**	**Value**	**Unit**	**Notes:**
Pilot	Hourly Volume Flow Rate	100.00	scf/hr	Manufacturer specification
	Natural Gas Heat Value	876.10	Btu/scf	Inlet Gas Analysis
	Annual Volume Flow Rate	0.88	MMscf/yr	
	Hourly Heat Rate	0.09	MMBtu/hr	
	Annual Heat Rate	767.47	MMBtu/yr	

SSM Input Information						
Activity	**Parameters**	**Hourly**	**Unit**	**Annual**	**Unit**	**Notes:**
Total SSM	Hourly Volume Flow Rate	281250.00	scf/hr	0.28	MMscf/yr	Total flow rate during events
	Max Hourly Heating Value	1541.20	Btu/scf	1541.20	Btu/scf	Max hourly and Annual Average
	Hourly Heat Rate	433.46	MMBtu/hr	433.46	MMBtu/yr	
	VOC	1381.01	lb/hr VOC	2.76	tpy VOC	
	HAP	179.10	lb/hr HAPs	0.080	tpy HAPs	
	H_2S	0.059	lb H_2S	1.17E-04	tpy H_2S	
PSVs	Volume Flow Rate	281250.00	scf/hr	0.28	MMscf/yr	Total flow rate during events
	Heating Value	1183.31	Btu/scf	1183.31	Btu/scf	Max hourly and Annual Average
	Heat Rate	332.81	MMBtu/hr	332.81	MMBtu/yr	
	VOC	1381.01	lb/hr VOC	2.76	tpy VOC	SSM Summary
	HAP	179.10	lb/hr HAPs	0.08	tpy HAPs	SSM Summary
	H_2S	0.06	lb H_2S	1.17E-04	tpy H_2S	SSM Summary

Flare Emission Calculation

Description	NO_X[1]	CO[1]	VOC	SO_2[1]	H_2S[1]	HAPs	Units	Notes
Emission Factors	0.068	0.31	-	-	-	-	lb/MMBTU	AP-42 Ch 13.5.1 Table 13.5-1 & Table 13.5-2
	-	-	0.18	-	-	6.85E-06	lb/hr	Fuel Gas Analysis
Fuel Sulfur Content	-	-	-	0.25	-	-	gr S/100scf	Fuel sulfur content (gr/100scf)
	-	-	-	0.0004	-	-	lb S/ Mscf	gr S/100 scf * (1 lb/7000 gr) * (1000scf/Mscf)
Pilot Emissions	5.96E-03	0.027	3.59E-03	7.14E-05	-	1.37E-07	lb/hr	EF * Pilot Heat Rate (MMBtu/hr)
	0.026	0.12	0.016	3.13E-04	-	6.00E-07	tpy	EF * Pilot Heat Rate (Mmbtu/yr) / 2000 (lb/ton)
SSM Emissions	29.48	134.37	27.62	0.11	1.17E-03	3.58	lb/hr	EF * LPF Heat Rate (MMBtu/hr)
	0.015	0.067	0.055	2.29E-04	2.34E-06	1.59E-03	tpy	EF * LPF Heat Rate (Mmbtu/yr) / 2000 (lb/ton)
Total Flare Emissions	29.48	134.40	27.62	0.11	1.17E-03	3.58	lb/hr	Pilot Emissions + LPF Emissions
	0.041	0.19	0.071	5.42E-04	2.34E-06	1.59E-03	tpy	Pilot Emissions + LPF Emissions

Notes:

[1] Flare NO_X and CO emission factors: AP-42 Chapter 13.5. SO_2: Mass balance assuming 98% combustion of H_2S and 100% conversion of combusted H_2S to SO_2:
Pilot Gas SO_2 Emissions (lb/hr) = [(Pilot Gas Flow (Mscf/hr) * Fuel Gas Sulfur Content (lb S/Mscf)*(64 lb/lbmol SO_2 / 32 lb/lbmol S)) + (Pilot Gas Flow (Mscf/yr) * Fuel Gas H_2S Content (lb H_2S/Mscf)*(64 lb/lbmol SO_2 /32 lb/lbmol H_2S)*(DRE))]
Pilot Gas H_2S Emissions (lb/hr) = [Pilot Gas Flow Rate (Mscf/yr) * Fuel Gas H_2S Content (lb H_2S/Mscf) * (1 - DRE)]
Process SO_2 Emissions (lb/hr) = [H_2S Mass Flow Rate (lb/hr) * DRE * (64 lb/lbmol SO_2 / 32 lb/lbmol H_2S)]
Process SO_2 Emissions (tpy) = [H_2S Mass Flow Rate (tpy) * DRE * (64 lb/lbmol SO_2 / 32 lb/lbmol H_2S)]

[2] VOC and HAP emissions estimated based on event stream routed to FLARE-1 and 98% efficiency. H_2S emissions estimated based on event stream routed to FLARE-2 and 100% conversion to SO_2.

Lea Midstream, Inc - The Dude Processing Plant

AGI Flare

Emission Unit: AGI-FLARE
Source Description: AGI Flare

Flare Information	
Unit(s):	AGI-FLARE
Unit Count:	1
Annual Operating Hours:	8,760
AGI Downtime Hours:	100
Combustion Efficiency (%):	98%

Pilot Parameters				
Activity	**Parameters**	**Value**	**Unit**	**Notes:**
Pilot & Purge Gas	Hourly Volume Flow Rate	55.00	scf/hr	Manufacturer specification
	Natural Gas Heat Value	876.10	Btu/scf	Inlet Gas Analysis
	Annual Volume Flow Rate	0.48	MMscf/yr	
	Hourly Heat Rate	0.05	MMBtu/hr	
	Annual Heat Rate	422.11	MMBtu/yr	

3,278.71						
Activity	**Parameters**	**Hourly**	**Unit**	**Annual**	**Unit**	**Notes:**
Amine Acid Gas	Volume Flow Rate	233,993.33	scf/hr	23.40	MMscf/yr	Total flow rate to Flare
	Heating Value	53.02	Btu/scf	53.02	Btu/scf	Net Heating Value from Amine Promax
	Heat Rate	12.41	MMBtu/hr	1240.70	MMBtu/yr	
	H_2S mol%	8.48%	-			Amine ProMax, Acid Gas
	VOC	31.85	lb/hr VOC	1.59	tpy VOC	Amine ProMax, Acid Gas
	HAP	29.58	lb/hr HAPs	1.48	tpy HAPs	Amine ProMax, Acid Gas
	H_2S	1777.16	lb H_2S	88.86	tpy H_2S	Amine ProMax, Acid Gas
Assist Gas	Volume Flow Rate	511840.0	scf/hr	51.18	MMscf/yr	Worst case hourly and annual assist gas requirement
	Assist Gas Heat Value	876	Btu/scf	876	Btu/scf	Net Gas Heat Value
	Heat Rate	448.43	MMBtu/hr	44,842.52	MMBtu/yr	
Acid and Assist Gas	Total Flare Stream Heat Value	617.88	Btu/scf	617.88	Btu/scf	Minimum net heating value for nonassisted flare combustion

Flare Emission Calculation

Description	NO_X[1]	CO[1]	VOC	SO_2[1]	H_2S[1]	HAPs	Units	Notes
Emission Factors	0.068	0.31	-	-	-	-	lb/MMBTU	AP-42 Ch 13.5.1 Table 13.5-1 & Table 13.5-2
	-	-	918.54	-	-	0.04	lb/hr	Fuel Gas Analysis
Fuel Sulfur Content	-	-	-	0.25	-	-	gr S/100scf	Fuel sulfur content (gr/100scf)
	-	-	-	0.0004	-	-	lb S/ Mscf	gr S/100 scf * (1 lb/7000 gr) * (1000scf/Mscf)
Pilot Emissions	3.28E-03	0.015	1.97E-03	3.93E-05	-	7.53E-08	lb/hr	EF * Pilot Heat Rate (MMBtu/hr)
	0.014	0.065	8.65E-03	1.72E-04	-	3.30E-07	tpy	EF * Pilot Heat Rate (Mmbtu/yr) / 2000 (lb/ton)
Assist Gas Emissions	30.49	139.01	18.37	0.37	-	7.01E-04	lb/hr	EF * Assist Gas Heat Rate (MMBtu/hr)
	1.52	6.95	9.18E-07	0.018	-	3.50E-05	tpy	EF * Assist Gas Heat Rate (MMBtu/yr) / 2000 (lb/ton)
Acid Gas Emissions	0.84	3.85	0.64	3,278.35	35.54	0.59	lb/hr	EF * Acid Gas Heat Rate (MMBtu/hr)
	0.042	0.19	0.032	163.92	1.78	0.030	tpy	EF * Acid Gas Heat Rate (Mmbtu/yr) / 2000 (lb/ton)
Malfunction Flaring	31.34	142.86	19.01	3,278.71	35.54	0.59	lb/hr	Acid Gas + Assist Gas Hourly Emissions
	10.00	10.00	10.00	10.00	10.00	10.00	tpy	Malfunction Flaring Limit
AGI Flare Emissions[3]	31.34	142.87	19.01	3,278.71	35.54	0.59	lb/hr	Pilot + Acid Gas + Assist Gas
	11.58	17.21	10.04	173.94	11.78	10.03	tpy	Pilot + Acid Gas + Assist Gas + Malfunction Flaring

Notes:

[1] Flare NO_X and CO emission factors: AP-42 Chapter 13.5. SO_2: Mass balance assuming 98% combustion of H_2S and 100% conversion of combusted H_2S to SO_2:
Pilot Gas SO_2 Emissions (lb/hr) = [(Pilot Gas Flow (Mscf/hr) * Fuel Gas Sulfur Content (lb S/Mscf)*(64 lb/lbmol SO_2 / 32 lb/lbmol S)) + (Pilot Gas Flow (Mscf/yr) * Fuel Gas H_2S Content (lb H_2S/Mscf)*(64 lb/lbmol SO_2 /32 lb/lbmol H_2S)*(DRE))]
Pilot Gas H_2S Emissions (lb/hr) = [Pilot Gas Flow Rate (Mscf/yr) * Fuel Gas H_2S Content (lb H_2S/Mscf) * (1 - DRE)]
Process SO_2 Emissions (lb/hr) = [H_2S Mass Flow Rate (lb/hr) * DRE * (64 lb/lbmol SO_2 / 32 lb/lbmol H_2S)]
Process SO_2 Emissions (tpy) = [H_2S Mass Flow Rate (tpy) * DRE * (64 lb/lbmol SO_2 / 32 lb/lbmol H_2S)]

[2] VOC and HAP emissions estimated based on event stream routed to AGI-FLARE and 98% efficiency. H_2S emissions estimated based on event stream routed to AGI-FLARE and 100% combustion conversion to SO_2.

[3] Hourly Malfunction flaring will not occur at the same time as Acid Gas and Assist Gas Flaring. Annual AGI Flare Emissions is the sum of all annual emissions routed to and combusted at AGI-FLARE.

Lea Midstream, Inc - The Dude Processing Plant

Train 1: BTEX Combustor

Emission Unit:	COMB-1
Source Description:	BTEX Combustor
Number of Units:	1
Hours of Operation:	8760 hr/yr
Control Efficiency:	98% DRE
Capture Efficiency:	100%

Pilot Parameters	Value	Unit	Notes
Pilot	100.00	scf/hr	Engineering estimation (assumed)
	10%		Safety factor
	110.00	scf/hr	Pilot flow with safety factor
	1.10E-04	MMscf/hr	
Pipeline Gas Heating value	972.48	Btu/scf	Facility specification
Heat Input	0.11	MMBtu/hr	
	0.96	MMscf/yr	
Total Flow Rate	23,812.89	SCF/D	
Heating Rate + Pilot	2.39	MMBtu/hr	

VOC Heat Input and Flow Rate Calculation

Process Parameters	Hourly	Unit	Annual	Unit	Notes
DEHY-1 VOC Emissions	98.21	lb/hr	430.18	tpy	Condenser overhead emissions (ProMax DEHY Pstreams)
DEHY-1 HAP Emissions	38.01	lb/hr	166.49	tpy	Condenser overhead emissions (ProMax DEHY Pstreams)
DEHY-1 H_2S Emissions	0.029	lb/hr	0.13	tpy	Condenser overhead emissions (ProMax DEHY Pstreams)
Average combusted gas heating value	2,586.24	Btu/scf	2,586.24	Btu/scf	ProMax DEHY Pstreams
Total combusted Gas flow rate	882.20	scf/hr	7.73	MMscf/yr	Total flow from all streams to flare
Total combusted gas heating rate	2.28	MMBtu/hr	19,986.73	MMBtu/yr	Calculated based on heating value and steady-state flow
Combusted Gas Flow Rate with Safety	0%	%	0%	%	Safety factor
Factor	882.20	scf/hr	7.73	MMscf/yr	Flow with safety factor
	2.28	MMBtu/hr	19,986.73	MMBtu/yr	

Emission Rates									
	NO_X	CO	VOC[1]	SO_2[2]	H_2S[4]	PM[1,4]	HAPs[1]	Units	Notes
Emission Factors	100.0	84.0	5.5			7.60		lb/MMscf	NO_X, CO, and VOC: AP 42 Chapter 1, Table
								Kg/MMBtu	40 CFR 98 Subpart C Table C-01 & C-02
				0.00036	0.00040			lb S/Mscf or lb H_2S/Mscf	
				0.25				gr S / 100 scf	Assumed, NMED
			430.18		0.13		166.49	tpy	
Pilot Emissions	0.011	9.24E-03	6.05E-04	7.86E-05	4.40E-05	8.36E-04	-	lb/hr	
	0.048	0.040	2.65E-03	3.44E-04	1.93E-04	3.66E-03	-	tpy	
Process Emissions	0.088	0.074	4.85E-03	0.057	5.77E-04	6.70E-03	0.76	lb/hr	
	0.39	0.32	8.60	0.25	2.53E-03	0.029	3.33	tpy	
Total Emissions	**0.099**	**0.083**	**5.46E-03**	**0.057**	**6.21E-04**	**7.54E-03**	**0.76**	lb/hr	
	0.43	**0.37**	**8.61**	**0.25**	**2.72E-03**	**0.033**	**3.33**	tpy	

[1] Dehydrator still vents overheads (DEHY-1) are controlled by COMB-1 with 100% capture efficiency and 98% DRE.

[2] Fuel sulfur content is assumed to be 0.25 gr/100 scf or 0.00036 lb S/Mscf

0.25 gr S/100 scf * fuel consumption (Mscf/hr) * 64 lb SO_2/32 lb S * 1/7000 (lb/gr) * 1000 (scf/ Mscf)= lb SO_2/hr

[3] N_2O, CH_4, and CO_2 tpy Emission Rate= EF* Fuel Usage * Fuel Heat Value * 2.20462 lb/1 kg * 1 ton/2000 lb

[4] H_2S pilot emissions based on 0.25 g H2S/100 scf, or 0.0004 lb H2S/Mscf in fuel

0.0004 lb H2S/Mscf fuel * fuel consumption (Mscf/hr) = lb H2S/hr

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

Lea Midstream, Inc - The Dude Processing Plant

Train 1: Tank and Loading Combustor

Emission Unit:	COMB-2	
Source Description:	Tank and Loading Combustor	
Number of Units:	1	
Hours of Operation	8760	hrs
Control Efficiency:	98%	DRE
Capture Efficiency:	100%	
VRU Downtime	5%	

Pilot Parameters	Value	Unit	Notes
Pilot	100.00	scf/hr	Engineering estimation (assumed)
	0%		Safety factor
	100.00	scf/hr	Pilot flow with safety factor
	1.00E-04	MMscf/hr	
Pipeline Gas Heating value	972.48	Btu/scf	Facility specification
Heat Input	0.097	MMBtu/hr	
	0.88	MMscf/yr	
Total Flare Flow Rate	4,958.22	SCF/D	
Heating Rate + Pilot	0.47	MMBtu/hr	

VOC Heat Input and Flow Rate Calculation Per Unit

Process Parameters	Hourly	Unit	Annual	Unit	Notes
Condensate Tank VOC Emissions	11.04	lb/hr	2.42	tpy	Tanks ProMax
Produced Water Tank VOC Emissions	1.30	lb/hr	0.080	tpy	Tanks ProMax
Condensate Loading VOC Emissions	183.51	lb/hr	71.75	tpy	Tanks ProMax
Produced Water Loading VOC Emissions	127.00	lb/hr	3.98	tpy	Tanks ProMax
Total VOC Emissions	322.84	lb/hr	78.23	tpy	
Condensate Tank HAP Emissions	0.65	lb/hr	0.14	tpy	Tanks ProMax
Produced Water Tank HAP Emissions	0.37	lb/hr	0.080	tpy	Tanks ProMax
Condensate Loading HAP Emissions	10.73	lb/hr	4.19	tpy	Tanks ProMax
Produced Water Loading HAP Emissions	35.68	lb/hr	1.12	tpy	Tanks ProMax
Total HAP Emissions	47.42	lb/hr	5.54	tpy	
Condensate Tank H_2S Emissions	2.35E-06	lb/hr	5.15E-07	tpy	Tanks ProMax
Produced Water Tank H_2S Emissions	1.20E-07	lb/hr	2.64E-08	tpy	Tanks ProMax
Condensate Loading H_2S Emissions	3.91E-05	lb/hr	1.53E-07	tpy	Tanks ProMax
Produced Water Loading H_2S Emissions	0.20	lb/hr	6.12E-05	tpy	Tanks ProMax
Total H_2S Emissions	0.20	lb/hr	6.19E-05	tpy	
Condensate Tank heating value	3,698.00	Btu/scf	3,698.00	Btu/scf	Tanks ProMax
Produced Water Tank heating value	2,791.73	Btu/scf	2,791.73	Btu/scf	Tanks ProMax
Condensate Loading heating value	3,698.00	Btu/scf	3,698.00	Btu/scf	Tanks ProMax
Produced Water Loading heating value	2,791.73	Btu/scf	2,791.73	Btu/scf	Tanks ProMax
Condensate Tank flow rate	62.69	scf/hr	0.027	MMscf/yr	Tanks ProMax
Produced Water Tank flow rate	10.69	scf/hr	4.68E-03	MMscf/yr	Tanks ProMax
Condensate Loading flow rate	25.75	scf/hr	0.011	MMscf/yr	Tanks ProMax
Produced Water Loading flow rate	7.47	scf/hr	3.27E-03	MMscf/yr	Tanks ProMax
Average combusted gas heating value	3,543.63	Btu/scf	3,543.63	Btu/scf	Weighted average heating value from all streams
Total combusted Gas flow rate	106.59	scf/hr	0.047	MMscf/yr	Total flow from all streams to flare
Total combusted gas heating rate	0.38	MMBtu/hr	165.44	MMBtu/yr	Calculated based on heating value and steady-state flow
Combusted Gas Flow Rate with Safety	0%	%	0%	%	Safety factor
Factor	106.59	scf/hr	0.047	MMscf/yr	Flow with safety factor
	0.38	MMBtu/hr	165.44	MMBtu/hr	

	Emission Rates								
	NO_X	CO	VOC[1]	SO_2[2]	H_2S[4]	PM[1,4]	HAPs[1]	Units	Notes
Emission Factors	100.0	84.0	5.5			7.60		lb/MMscf	NO_X, CO, and VOC: AP 42 Chapter 1, Table
								Kg/MMBtu	40 CFR 98 Subpart C Table C-01 & C-02
				0.00036	0.00040			lb S/Mscf or lb H_2S/Mscf	
				0.25				gr S / 100 scf	Assumed, NMED
Pilot Emissions	0.010	8.40E-03	5.50E-04	7.14E-05	4.00E-05	7.60E-04	-	lb/hr	
	0.044	0.037	2.41E-03	3.13E-04	1.75E-04	3.33E-03	-	tpy	
Process Emissions	0.011	8.95E-03	6.46	0.36	3.90E-03	8.10E-04	0.95	lb/hr	
	0.047	0.039	1.56	4.48E-04	1.24E-06	3.55E-03	0.11	tpy	
Total Emissions	**0.021**	**0.017**	**6.46**	**0.36**	**3.94E-03**	**1.57E-03**	**0.95**	lb/hr	
	0.090	**0.076**	**1.57**	**7.61E-04**	**1.76E-04**	**6.88E-03**	**0.11**	tpy	

[1] Flash, working and breathing emissions from the Condensate Tanks (TK-1 to TK-8) and Produced Water Tanks (PWTK-1 to PWTK-2) as well as Loading Emissions (LOAD and PW-LOAD) are controlled by COMB-2 with 100% capture efficiency and 98% DRE.

[2] Fuel sulfur content is assumed to be 0.25 gr/100 scf or 0.00036 lb S/Mscf

0.25 gr S/100 scf * fuel consumption (Mscf/hr) * 64 lb SO_2/32 lb S * 1/7000 (lb/gr) * 1000 (scf/ Mscf)= lb SO_2/hr

[3] N_2O, CH_4, and CO_2 tpy Emission Rate= EF* Fuel Usage * Fuel Heat Value * 2.20462 lb/1 kg * 1 ton/2000 lb

[4] H_2S pilot emissions based on 0.25 g H2S/100 scf, or 0.0004 lb H2S/Mscf in fuel

0.0004 lb H2S/Mscf fuel * fuel consumption (Mscf/hr) = lb H2S/hr

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

Lea Midstream, Inc - The Dude Processing Plant

Fugitives

Unit: FUG-1
Annual Operating Hours: 8,760
Safety Factor: 50%

Facility-wide Fugitive Emissions Per Piece of Equipment

Subcomponent		Emission Factor[1] (lb/hr/comp)	VOC Content[2] (wt%)	H_2S Content[2] (wt%)	HAP Content[2] (wt%)	Benzene Content[2] (wt%)	n-Hexane Content[2] (wt%)	Toluene Content[2] (wt%)	Ethylbenzene Content[2] (wt%)	CO_2 Content[2] (wt%)	CH_4 Content[2] (wt%)	Subcomponent Counts[3]
Valves	Gas	9.92E-03	24.31%	0.5791%	0.71%	0.338%	0.22%	0.13%	0.011%	3.559%	45.680%	584
	Light Oil	5.51E-03	100.00%	0.00%	26.36%	9.50%	6.17%	7.73%	1.47%	0.0000%	0.0000%	267
	Water/Oil	2.16E-04	18.39%	0.00%	15.13%	7.85%	0.19%	5.50%	0.85%	0.0005%	0.0000%	267
Flanges	Gas	8.60E-04	24.31%	0.5791%	0.71%	0.338%	0.22%	0.13%	0.011%	3.559%	45.680%	584
	Light Oil	2.43E-04	100.00%	0.0000%	26.36%	9.50%	6.17%	7.73%	1.47%	0.00%	0.00%	267
	Water/Oil	6.39E-06	18.39%	0.0002%	15.13%	7.85%	0.19%	5.50%	0.85%	0.00%	0.00%	267
Connectors	Gas	4.41E-04	24.31%	0.5791%	0.71%	0.338%	0.22%	0.13%	0.011%	3.559%	45.680%	3597
	Light Oil	4.63E-04	100.00%	0.0000%	26.36%	9.50%	6.17%	7.73%	1.47%	0.00%	0.00%	651
	Water/Oil	2.43E-04	18.39%	0.0002%	15.13%	7.85%	0.19%	5.50%	0.85%	0.00%	0.00%	651
Other	Gas	1.94E-02	24.31%	0.5791%	0.71%	0.338%	0.22%	0.13%	0.011%	3.559%	45.680%	78
	Light Oil	1.65E-02	100.00%	0.0000%	26.36%	9.50%	6.17%	7.73%	1.47%	0.00%	0.00%	12
	ENG-1, ENG-5 & ENG	3.09E-02	18.39%	0.0002%	15.13%	7.85%	0.19%	5.50%	0.85%	0.00%	0.00%	12
Pump Seals	Gas	5.29E-03	24.31%	0.5791%	0.71%	0.338%	0.22%	0.13%	0.011%	3.559%	45.680%	0
	Light Oil	2.87E-02	100.00%	0.0000%	26.36%	9.50%	6.17%	7.73%	1.47%	0.00%	0.00%	3
	Water/Oil	5.29E-05	18.39%	0.0002%	15.13%	7.85%	0.19%	5.50%	0.85%	0.00%	0.00%	3
Open Ended Lines	Gas	4.41E-03	24.31%	0.5791%	0.71%	0.338%	0.22%	0.13%	0.011%	3.559%	45.680%	129
	Light Oil	3.09E-03	100.00%	0.0000004002%	26.36%	9.50%	6.17%	7.73%	1.47%	0.00%	0.00%	24
	Water/Oil	5.51E-04	18.39%	0.00015244%	15.13%	7.85%	0.19%	5.50%	0.85%	0.00%	0.00%	24
	Hourly Emission Rate (lb/hr)[4]		**4.73**	**5.77E-02**	**0.74**	**0.289**	**0.16**	**0.22**	**0.038**	**0.35**	**4.551**	
	Annual Emission Rate (tpy)[5]		**20.71**	**2.53E-01**	**3.24**	**1.27**	**0.70**	**0.94**	**0.17**	**1.55**	**19.94**	

[1] Emission factors from Table 2-4 of EPA Protocol for Equipment Leak Emission Estimates, 1995.
[2] Weight percent of gas and liquid components from gas and liquid streams generated in a ProMax simulation of this facility.
[3] Component counts are based on estimated design.
[4] Hourly Emissions [lb/hr] = Emissions Factor [lb/hr/component] * Weight Content of Chemical Component [%] * Subcomponent Count.
[5] Annual Emissions [ton/yr] = Hourly Emissions [lb/hr] * Operating Hours [hr/yr] * 1/2000 [ton/lb].

Total Fugitive Emissions

	VOC	H_2S	HAP	Benzene	n-Hexane	Toluene	Ethylbenzene	Units
Fugitive Emissions	4.73	5.77E-02	0.74	0.289	0.159	0.215	0.038	lb/hr
	20.71	2.53E-01	3.24	1.27	0.70	0.94	0.17	tpy
Total:	**4.73**	**5.77E-02**	**0.74**	**0.289**	**0.159**	**0.215**	**0.038**	**lb/hr**
	20.71	**2.53E-01**	**3.24**	**1.268**	**0.70**	**0.94**	**0.169**	**tpy**

Lea Midstream, Inc - The Dude Processing Plant

Emission Calculation Inputs

Compressor Blowdowns			
Input Data	**Value**	**Units**	
Volume of gas per blowdown	2680	scf/event	Provided by Lea Midstream
Actual Pressure	100	psia	Vented Pressure
Temperature:	200	°F	
Unit Volume Degassed:	500	acf	Conservative Assumption
Number of G3615LE Compressors (inlet)	1	Units	
Number of Blowdowns per unit per year	24	events/yr	
Duration of Event	1	hr/event	
Volume of gas per blowdown	5360	scf/event	Provided by Lea Midstream
Actual Pressure	200	psia	Vented Pressure
Temperature:	200	°F	
Unit Volume Degassed:	500	acf	Conservative Assumption
Number of G3615LE Compressors (residue)	3	Units	
Number of Blowdowns per unit per year	24	events/yr	
Duration of Event	1	hr/event	
Volume of gas per blowdown	5360	scf/event	Conservative Assumption
Actual Pressure	200	psia	Vented Pressure
Temperature:	200	°F	
Unit Volume Degassed:	500	acf	Conservative Assumption
Number of G3606 Compressors	4	Units	
Number of Blowdowns per unit per year	120	events/yr	
Duration of Event	1	hr/event	
Volume of gas per blowdown	5528	scf/event	Conservative Assumption
Actual Pressure	200	psia	Vented Pressure
Temperature:	180	°F	
Unit Volume Degassed:	500	acf	Conservative Assumption
Number of G612A4 Compressors	2	Units	
Number of Blowdowns per unit per year	120	events/yr	
Duration of Event	1	hr/event	
Safety Factor	25%		

VRU Blowdowns		
Input Data	**Value**	**Units**
Volume of gas per blowdown	260	scf/event
Number of VRUs	1	Units
Number of Blowdowns per unit per year	24	events/yr
Duration of Event	1	hr/event

Dehy Blowdowns			
Input Data	**Value**	**Units**	
Volume of gas per blowdown	23448	scf/event	
Actual Pressure	1,000.00	psia	
Temperature:	80	°F	
Unit Volume Degassed:	358	acf	270" S/S x 54"
Number of Dehys	1	Units	
Number of Blowdowns per unit per year	1	events/yr	
Duration of Event	1	hr/event	

Filter Coalescer Blowdowns			
Input Data	**Value**	**Units**	
Volume of gas per blowdown	1647	scf/event	
Actual Pressure	1,000.00	psia	
Temperature:	80	°F	
Unit Volume Degassed:	25	acf	24" x 8' S/S
Number of Filter Coalescers	4	Units	
Number of Blowdowns per unit per year	4	events/yr	
Duration of Event	1	hr/event	

Condensate Tank Maintenance		
Input Data	**Value**	**Units**
Number of tanks	8	Units
Molecular Weight of Vapors	67.54	lb/lb-mol
Duration of tank purging/degassing	1	hr/event
Actual Pressure	12.30	psia
Temperature:	72	°F
Unit Volume Degassed:	2,246	acf
Volume of gas released during degassing event	1838	scf/event
Tank Height	20	ft
Tank Diameter	15	ft
Number of tank purging/degassing events per tank per year	4	event/yr per tank

Water Tank Maintenance		
Input Data	**Value**	**Units**
Number of tanks	2	Units
Molecular Weight of Vapors	52.57	lb/lb-mol
Duration of tank purging/degassing	1	hr/event
Actual Pressure	12.30	psia
Temperature:	72	°F
Unit Volume Degassed:	2,246	acf
Volume of gas released during degassing event	1838	scf/event
Tank Height	20	ft
Tank Diameter	15	ft
Number of tank purging/degassing events per tank per year	4	event/yr per tank

Pigging		
Input Data	**Value**	**Units**
Volume of gas per event	1000000	scf/event
Annual Hours	20	hr/year
Annual Events	20	events/yr
Duration of Event	1	hr/event

PSV Blowdowns - Plant 1		
Input Data	**Value**	**Units**
Volume of gas per blowdown	1302083	scf/event
Number of events per hour	1	event/hour
Number of Blowdowns per unit per year	1	events/yr
Duration of Event	0.25	hr/event

PSV Blowdowns - Plant 2		
Input Data	**Value**	**Units**
Volume of gas per blowdown	281250	scf/event
Number of events per hour	1	event/hour
Number of Blowdowns per unit per year	1	events/yr
Duration of Event	0.25	hr/event

Lea Midstream, Inc - The Dude Processing Plant

SSM Summary

	Uncontrolled Summary																	
Description	**NO_x**		**CO**		**VOC**		**PM**		**PM_{10}**		**$PM_{2.5}$**		**SO_2**		**H_2S**		**Total HAPs**	
	(lb/hr)	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**
Compressor Blowdowns	--	--	--	--	803.00	34.12	--	--	--	--	--	--	--	--	0.99	0.013	21.43	0.91
VRU Blowdowns	--	--	--	--	4.90	0.059	--	--	--	--	--	--	--	--	0.12	1.40E-03	0.14	1.72E-03
Dehy Blowdowns	--	--	--	--	460.53	0.23	--	--	--	--	--	--	--	--	0.020	9.76E-06	13.26	6.63E-03
Filter Coalescer Blowdowns	--	--	--	--	24.82	0.050	--	--	--	--	--	--	--	--	0.59	1.18E-03	0.72	1.45E-03
Condensate Tank Maintenance	--	--	--	--	3,487.71	2.07	--	--	--	--	--	--	--	--	7.44E-04	4.41E-07	203.90	0.12
Produced Water Tank Maintenance	--	--	--	--	609.38	0.47	--	--	--	--	--	--	--	--	5.64E-05	4.36E-08	171.23	0.13
Pigging	--	--	--	--	18,841.41	188.41	--	--	--	--	--	--	--	--	448.76	4.49	550.19	5.50
Train 1: Pressure Safety Valve Blowdowns	--	--	--	--	6,133.27	12.27	--	--	--	--	--	--	--	--	146.08	0.29	179.10	0.36
Train 2: Pressure Safety Valve Blowdowns	--	--	--	--	1,381.01	2.76	--	--	--	--	--	--	--	--	0.059	1.17E-04	39.75	0.080
TOTAL	**--**	**--**	**--**	**--**	**31,746.05**	**240.45**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**596.62**	**4.80**	**1,179.73**	**7.11**

	Controlled Summary																	
ENG-1, ENG-5 & ENG-6, ENG-22	**NO_x**		**CO**		**VOC**		**PM**		**PM_{10}**		**$PM_{2.5}$**		**SO_2**		**H_2S**		**Total HAPs**	
	(lb/hr)	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**
Compressor Blowdowns	--	--	-		762.60	33.64	--	--	--	--	--	--	--	--	0.99	0.013	21.43	0.91
VRU Blowdowns	--	--	-	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dehy Blowdowns	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Filter Coalescer Blowdowns	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Condensate Tank Maintenance	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Produced Water Tank Maintenance	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pigging	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Train 1: Pressure Safety Valve Blowdowns	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Train 2: Pressure Safety Valve Blowdowns	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	**--**	**--**	**--**	**--**	**762.60**	**33.64**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**0.032**	**1.41E-03**	**20.25**	**0.89**

	Controlled HAP Summary									
Description	**Hexane**		**Benzene**		**Toluene**		**Ethylbenzene**		**Xylenes**	
	(lb/hr)	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**	**(lb/hr)**	**(tpy)**
Compressor Blowdowns	1.35	0.059	0.80	0.035	0.22	9.55E-03	0.22	9.64E-03	0.014	6.13E-04
VRU Blowdowns	--	--	-	--	--	--	--	--	--	--
Dehy Blowdowns	--	--	--	--	--	--	--	--	--	--
Filter Coalescer Blowdowns	--	--	--	--	--	--	--	--	--	--
Condensate Tank Maintenance	--	--	--	--	--	--	--	--	--	--
Produced Water Tank Maintenance	--	--	--	--	--	--	--	--	--	--
Pigging	--	--	--	--	--	--	--	--	--	--
Train 1: Pressure Safety Valve Blowdowns	--	--	--	--	--	--	--	--	--	--
Train 2: Pressure Safety Valve Blowdowns	--	--	--	--	--	--	--	--	--	--
TOTAL	**1.35**	**0.059**	**0.80**	**0.035**	**0.22**	**9.55E-03**	**0.22**	**9.64E-03**	**0.014**	**6.13E-04**

Lea Midstream, Inc - The Dude Processing Plant

Compressor Blowdowns

Hours per event: 1

Compressor	Number of Compressors	Volume per Compressor Event (scf/event)	Annual events per Compressor	Annual Release (scf/yr)	Hourly Volume (scf/hr)	Molecular Weight (lb/lb-mol)
G3615LE - inlet	1	2,680	24	64,325	2,680	24
G3615LE - residue	3	5,360	24	385,953	16,081	23
G3606	4	5,360	120	2,573,019	21,442	23
G3612A4	2	5,528	120	1,326,734	11,056	23

Uncontrolled Emissions	VOC		H_2S		Total HAP	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
G3615LE - inlet	40.40	0.48	0.96	0.012	1.18	0.014
G3615LE - residue	252.45	3.03	0.011	1.27E-04	6.70	0.080
G3606	336.59	20.20	0.014	8.48E-04	8.94	0.54
G3612A4	173.56	10.41	7.29E-03	4.37E-04	4.61	0.28
TOTAL	803.00	34.12	0.99	0.013	21.43	0.91

Controlled Emissions	VOC		H_2S		Total HAP	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
G3615LE - inlet	-	-	-	-	-	-
G3615LE - residue	252.45	3.03	0.011	1.27E-04	6.70	0.080
G3606	336.59	20.20	0.014	8.48E-04	8.94	0.54
G3612A4	173.56	10.41	7.29E-03	4.37E-04	4.61	0.28
TOTAL	762.60	33.64	0.032	1.41E-03	20.25	0.89

Lea Midstream, Inc - The Dude Processing Plant

G3615LE Blowdowns

Basis of Calculation:
Emissions from blowdowns are calculated based on a mass balance as follows:

Maximum Uncontrolled Hourly Emissions (lb/hr) = [Volume of blowdown (scf/event/unit)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# units blowndown simultaneously (units)] / [event duration (hr/event)] / [379.5 (scf/lb-mol)]

Maximum Uncontrolled Annual Emissions (tpy) = [Volume of blowdown (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# units blowndown at site (units)] x [frequency of events (events/yr/unit)] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)]

Compressor Blowdown Emissions

Estimated Gas Vented per BlowDown Event [1] =	2,680	scf/event
Units at Site =	1	units
Units Blowndown Simultaneously =	1	units
Assumed Blowdown Duration =	1	hrs/event
Unit Blowdowns in One Year =	24	events/yr
Molecular Weight of Stream =	24	lb/lb-mol
Safety Factor=	25%	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)
N2	3.56E+00	7.39E+00	8.87E-02
CO2	7.48E+00	1.24E+01	1.49E-01
H2S	5.79E-01	9.62E-01	1.15E-02
C1	4.57E+01	7.59E+01	9.11E-01
C2	1.83E+01	3.05E+01	3.65E-01
C3	1.38E+01	2.29E+01	2.75E-01
iC4	1.93E+00	3.22E+00	3.86E-02
C4	4.42E+00	7.34E+00	8.81E-02
iC5	1.19E+00	1.98E+00	2.37E-02
C5	1.05E+00	1.74E+00	2.09E-02
C6	2.23E-01	3.71E-01	4.45E-03
nC7	7.54E-02	1.25E-01	1.50E-03
Octane	4.33E-02	7.19E-02	8.63E-04
Water	6.58E-02	1.09E-01	1.31E-03
EG	0.00E+00	0.00E+00	0.00E+00
TEG	0.00E+00	0.00E+00	0.00E+00
DEA	0.00E+00	0.00E+00	0.00E+00
MDEA	0.00E+00	0.00E+00	0.00E+00
PZ	0.00E+00	0.00E+00	0.00E+00
2,2-Dimethylpropane	0.00E+00	0.00E+00	0.00E+00
Cyclopentane	1.26E-01	2.10E-01	2.52E-03
2-Methylpentane	2.45E-01	4.06E-01	4.88E-03
3-Methylpentane	1.40E-01	2.32E-01	2.78E-03
Methylcyclopentane	1.73E-01	2.87E-01	3.45E-03
Benzene	3.38E-01	5.62E-01	6.75E-03
Cyclohexane	2.12E-01	3.52E-01	4.23E-03
2-Methylhexane	2.56E-02	4.26E-02	5.11E-04
3-Methylhexane	4.17E-02	6.92E-02	8.31E-04
Methylcyclohexane	1.02E-01	1.70E-01	2.04E-03
2,5-Xylenol	0.00E+00	0.00E+00	0.00E+00
Toluene	1.27E-01	2.10E-01	2.52E-03
2-Methylheptane	1.14E-02	1.90E-02	2.28E-04
Ethylcyclohexane	7.05E-03	1.17E-02	1.41E-04
Ethylbenzene	1.15E-02	1.90E-02	2.28E-04
o-Xylene	1.05E-02	1.74E-02	2.09E-04
Nonane	7.04E-03	1.17E-02	1.40E-04
Decane	4.50E-04	7.48E-04	8.98E-06
Total VOC	**24.31**	**40.40**	**0.48**
H_2S	**0.58**	**0.96**	**0.012**
Total HAP	**0.71**	**1.18**	**0.014**

[1] This is a representative estimate of the amount of gas vented per blow down event.

Lea Midstream, Inc - The Dude Processing Plant

G3615LE Blowdowns

Basis of Calculation:
Emissions from blowdowns are calculated based on a mass balance as follows:

Maximum Uncontrolled Hourly Emissions (lb/hr) = [Volume of blowdown (scf/event/unit)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# units blowndown simultaneously (units)] / [event duration (hr/event)] / [379.5 (scf/lb-mol)]

Maximum Uncontrolled Annual Emissions (tpy) = [Volume of blowdown (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# units blowndown at site (units)] x [frequency of events (events/yr/unit)] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)]

Compressor Blowdown Emissions

Estimated Gas Vented per BlowDown Event [1] =	5,360	scf/event
Units at Site =	3	units
Units Blowndown Simultaneously =	3	units
Assumed Blowdown Duration =	1	hrs/event
Unit Blowdowns in One Year =	72	events/yr
Molecular Weight of Stream =	23	lb/lb-mol
Safety Factor=	25%	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)
N2	3.88E+00	4.64E+01	5.57E-01
CO2	1.04E-01	9.98E-01	1.20E-02
H2S	1.11E-03	1.06E-02	1.27E-04
C1	4.97E+01	4.77E+02	5.72E+00
C2	1.99E+01	1.91E+02	2.29E+00
C3	1.50E+01	1.44E+02	1.73E+00
iC4	2.10E+00	2.02E+01	2.42E-01
C4	4.80E+00	4.60E+01	5.52E-01
iC5	1.29E+00	1.24E+01	1.49E-01
C5	1.14E+00	1.09E+01	1.31E-01
C6	2.41E-01	2.31E+00	2.78E-02
nC7	8.15E-02	7.81E-01	9.37E-03
Octane	4.66E-02	4.47E-01	5.36E-03
Water	3.80E-02	3.65E-01	4.38E-03
EG	3.41E-08	3.27E-07	3.92E-09
TEG	2.36E-03	2.26E-02	2.72E-04
DEA	0.00E+00	0.00E+00	0.00E+00
MDEA	3.19E-04	3.06E-03	3.67E-05
PZ	2.18E-03	2.09E-02	2.51E-04
2,2-Dimethylpropane	0.00E+00	0.00E+00	0.00E+00
Cyclopentane	1.35E-01	1.29E+00	1.55E-02
2-Methylpentane	2.65E-01	2.54E+00	3.05E-02
3-Methylpentane	1.51E-01	1.45E+00	1.74E-02
Methylcyclopentane	1.85E-01	1.77E+00	2.13E-02
Benzene	3.24E-01	3.11E+00	3.73E-02
Cyclohexane	2.26E-01	2.17E+00	2.60E-02
2-Methylhexane	2.77E-02	2.66E-01	3.19E-03
3-Methylhexane	4.50E-02	4.31E-01	5.18E-03
Methylcyclohexane	1.09E-01	1.05E+00	1.25E-02
2,5-Xylenol	4.46E-08	4.28E-07	5.13E-09
Toluene	1.16E-01	1.11E+00	1.33E-02
2-Methylheptane	1.23E-02	1.18E-01	1.42E-03
Ethylcyclohexane	7.47E-03	7.17E-02	8.60E-04
Ethylbenzene	9.89E-03	9.48E-02	1.14E-03
o-Xylene	8.47E-03	8.12E-02	9.75E-04
Nonane	7.55E-03	7.24E-02	8.68E-04
Decane	4.80E-04	4.60E-03	5.52E-05
Total VOC	**26.33**	**252.45**	**3.03**
H_2S	**1.11E-03**	**0.01**	**1.27E-04**
Total HAP	**0.70**	**6.70**	**0.08**

[1] This is a representative estimate of the amount of gas vented per blow down event.

Lea Midstream, Inc - The Dude Processing Plant

G3606 Blowdowns

Basis of Calculation:
Emissions from blowdowns are calculated based on a mass balance as follows:

Maximum Uncontrolled Hourly Emissions (lb/hr) = [Volume of blowdown (scf/event/unit)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# units blowndown simultaneously (units)] / [event duration (hr/event)] / [379.5 (scf/lb-mol)]

Maximum Uncontrolled Annual Emissions (tpy) = [Volume of blowdown (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# units blowndown at site (units)] x [frequency of events (events/yr/unit)] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)]

Compressor Blowdown Emissions

Estimated Gas Vented per BlowDown Event [1] =	5,360	scf/event
Units at Site =	4	units
Units Blowndown Simultaneously =	4	units
Assumed Blowdown Duration =	1	hrs/event
Unit Blowdowns in One Year =	480	events/yr
Molecular Weight of Stream =	23	lb/lb-mol
Safety Factor=	25%	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)
N2	3.88E+00	6.19E+01	3.72E+00
CO2	1.04E-01	1.33E+00	7.98E-02
H2S	1.11E-03	1.41E-02	8.48E-04
C1	4.97E+01	6.35E+02	3.81E+01
C2	1.99E+01	2.55E+02	1.53E+01
C3	1.50E+01	1.92E+02	1.15E+01
iC4	2.10E+00	2.69E+01	1.61E+00
C4	4.80E+00	6.14E+01	3.68E+00
iC5	1.29E+00	1.65E+01	9.91E-01
C5	1.14E+00	1.46E+01	8.73E-01
C6	2.41E-01	3.08E+00	1.85E-01
nC7	8.15E-02	1.04E+00	6.25E-02
Octane	4.66E-02	5.95E-01	3.57E-02
Water	3.80E-02	4.86E-01	2.92E-02
EG	3.41E-08	4.36E-07	2.62E-08
TEG	2.36E-03	3.02E-02	1.81E-03
DEA	0.00E+00	0.00E+00	0.00E+00
MDEA	3.19E-04	4.08E-03	2.45E-04
PZ	2.18E-03	2.79E-02	1.67E-03
2,2-Dimethylpropane	0.00E+00	0.00E+00	0.00E+00
Cyclopentane	1.35E-01	1.73E+00	1.04E-01
2-Methylpentane	2.65E-01	3.39E+00	2.03E-01
3-Methylpentane	1.51E-01	1.93E+00	1.16E-01
Methylcyclopentane	1.85E-01	2.36E+00	1.42E-01
Benzene	3.24E-01	4.14E+00	2.49E-01
Cyclohexane	2.26E-01	2.89E+00	1.74E-01
2-Methylhexane	2.77E-02	3.55E-01	2.13E-02
3-Methylhexane	4.50E-02	5.75E-01	3.45E-02
Methylcyclohexane	1.09E-01	1.39E+00	8.36E-02
2,5-Xylenol	4.46E-08	5.70E-07	3.42E-08
Toluene	1.16E-01	1.48E+00	8.87E-02
2-Methylheptane	1.23E-02	1.58E-01	9.46E-03
Ethylcyclohexane	7.47E-03	9.55E-02	5.73E-03
Ethylbenzene	9.89E-03	1.26E-01	7.58E-03
o-Xylene	8.47E-03	1.08E-01	6.50E-03
Nonane	7.55E-03	9.65E-02	5.79E-03
Decane	4.80E-04	6.13E-03	3.68E-04
Total VOC	**26.33**	**336.59**	**20.20**
H_2S	**1.11E-03**	**0.01**	**8.48E-04**
Total HAP	**0.70**	**8.94**	**0.54**

[1] This is a representative estimate of the amount of gas vented per blow down event.

Lea Midstream, Inc - The Dude Processing Plant

G3612A4 Blowdowns

Basis of Calculation:
Emissions from blowdowns are calculated based on a mass balance as follows:

Maximum Uncontrolled Hourly Emissions (lb/hr) = [Volume of blowdown (scf/event/unit)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# units blowndown simultaneously (units)] / [event duration (hr/event)] / [379.5 (scf/lb-mol)]

Maximum Uncontrolled Annual Emissions (tpy) = [Volume of blowdown (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# units blowndown at site (units)] x [frequency of events (events/yr/unit)] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)]

Compressor Blowdown Emissions

Estimated Gas Vented per BlowDown Event [1] =	5,528	scf/event
Units at Site =	2	units
Units Blowndown Simultaneously =	2	units
Assumed Blowdown Duration =	1	hrs/event
Unit Blowdowns in One Year =	240	events/yr
Molecular Weight of Stream =	23	lb/lb-mol
Safety Factor=	25%	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)
N2	3.88E+00	3.19E+01	1.92E+00
CO2	1.04E-01	6.86E-01	4.12E-02
H2S	1.11E-03	7.29E-03	4.37E-04
C1	4.97E+01	3.28E+02	1.97E+01
C2	1.99E+01	1.31E+02	7.88E+00
C3	1.50E+01	9.89E+01	5.93E+00
iC4	2.10E+00	1.39E+01	8.32E-01
C4	4.80E+00	3.16E+01	1.90E+00
iC5	1.29E+00	8.52E+00	5.11E-01
C5	1.14E+00	7.51E+00	4.50E-01
C6	2.41E-01	1.59E+00	9.54E-02
nC7	8.15E-02	5.37E-01	3.22E-02
Octane	4.66E-02	3.07E-01	1.84E-02
Water	3.80E-02	2.51E-01	1.50E-02
EG	3.41E-08	2.25E-07	1.35E-08
TEG	2.36E-03	1.56E-02	9.34E-04
DEA	0.00E+00	0.00E+00	0.00E+00
MDEA	3.19E-04	2.10E-03	1.26E-04
PZ	2.18E-03	1.44E-02	8.62E-04
2,2-Dimethylpropane	0.00E+00	0.00E+00	0.00E+00
Cyclopentane	1.35E-01	8.90E-01	5.34E-02
2-Methylpentane	2.65E-01	1.75E+00	1.05E-01
3-Methylpentane	1.51E-01	9.96E-01	5.98E-02
Methylcyclopentane	1.85E-01	1.22E+00	7.31E-02
Benzene	3.24E-01	2.14E+00	1.28E-01
Cyclohexane	2.26E-01	1.49E+00	8.95E-02
2-Methylhexane	2.77E-02	1.83E-01	1.10E-02
3-Methylhexane	4.50E-02	2.97E-01	1.78E-02
Methylcyclohexane	1.09E-01	7.19E-01	4.31E-02
2,5-Xylenol	4.46E-08	2.94E-07	1.76E-08
Toluene	1.16E-01	7.62E-01	4.57E-02
2-Methylheptane	1.23E-02	8.13E-02	4.88E-03
Ethylcyclohexane	7.47E-03	4.93E-02	2.96E-03
Ethylbenzene	9.89E-03	6.52E-02	3.91E-03
o-Xylene	8.47E-03	5.59E-02	3.35E-03
Nonane	7.55E-03	4.97E-02	2.98E-03
Decane	4.80E-04	3.16E-03	1.90E-04
Total VOC	**26.33**	**173.56**	**10.41**
H_2S	**1.11E-03**	**7.29E-03**	**4.37E-04**
Total HAP	**0.70**	**4.61**	**0.28**

Lea Midstream, Inc - The Dude Processing Plant

Filter Blowdowns

Basis of Calculation:
Emissions from blowdowns are calculated based on a mass balance as follows:

Maximum Uncontrolled Hourly Emissions (lb/hr) = [Volume of blowdown (scf/event/unit)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# units blowndown simultaneously (units)] / [event duration (hr/event)] / [379.5 (scf/lb-mol)]

Maximum Uncontrolled Annual Emissions (tpy) = [Volume of blowdown (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# units blowndown at site (units)] x [frequency of events (events/yr/unit)] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)]

Filter BlowDown Emissions

Estimated Gas Vented per BlowDown Event [1] =	1,647	scf/event
Units at Site =	4	units
Units Blowndown Simultaneously =	1	units
Assumed BlowDown Duration =	1	hrs/event
Unit BlowDowns in One Year =	4	events/yr
Molecular Weight of Stream =	24	lb/lb-mol
Control Type =	Flare	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)
N2	3.56E+00	3.63E+00	7.27E-03
CO2	7.48E+00	7.63E+00	1.53E-02
H2S	5.79E-01	5.91E-01	1.18E-03
C1	4.57E+01	4.66E+01	9.33E-02
C2	1.83E+01	1.87E+01	3.74E-02
C3	1.38E+01	1.41E+01	2.82E-02
iC4	1.93E+00	1.98E+00	3.95E-03
C4	4.42E+00	4.51E+00	9.03E-03
iC5	1.19E+00	1.22E+00	2.43E-03
C5	1.05E+00	1.07E+00	2.14E-03
C6	2.23E-01	2.28E-01	4.55E-04
nC7	7.54E-02	7.70E-02	1.54E-04
Octane	4.33E-02	4.42E-02	8.83E-05
Water	6.58E-02	6.72E-02	1.34E-04
EG	0.00E+00	0.00E+00	0.00E+00
TEG	0.00E+00	0.00E+00	0.00E+00
DEA	0.00E+00	0.00E+00	0.00E+00
MDEA	0.00E+00	0.00E+00	0.00E+00
PZ	0.00E+00	0.00E+00	0.00E+00
2,2-Dimethylpropane	0.00E+00	0.00E+00	0.00E+00
Cyclopentane	1.26E-01	1.29E-01	2.58E-04
2-Methylpentane	2.45E-01	2.50E-01	4.99E-04
3-Methylpentane	1.40E-01	1.43E-01	2.85E-04
Methylcyclopentane	1.73E-01	1.76E-01	3.53E-04
Benzene	3.38E-01	3.46E-01	6.91E-04
Cyclohexane	2.12E-01	2.16E-01	4.33E-04
2-Methylhexane	2.56E-02	2.62E-02	5.24E-05
3-Methylhexane	4.17E-02	4.25E-02	8.51E-05
Methylcyclohexane	1.02E-01	1.04E-01	2.08E-04
2,5-Xylenol	0.00E+00	0.00E+00	0.00E+00
Toluene	1.27E-01	1.29E-01	2.58E-04
2-Methylheptane	1.14E-02	1.17E-02	2.33E-05
Ethylcyclohexane	7.05E-03	7.20E-03	1.44E-05
Ethylbenzene	1.15E-02	1.17E-02	2.34E-05
o-Xylene	1.05E-02	1.07E-02	2.14E-05
Nonane	7.04E-03	7.19E-03	1.44E-05
Decane	4.50E-04	4.60E-04	9.19E-07
Total VOC	**24.31**	**24.82**	**0.05**
H_2S	**0.58**	**0.591**	**1.18E-03**
Total HAP	**0.71**	**0.725**	**1.45E-03**

Lea Midstream, Inc - The Dude Processing Plant

VRU Blowdowns

Basis of Calculation:
Emissions from blowdown operations are calculated based on a mass balance as follows:

Maximum Uncontrolled Hourly Emissions for each Unit (lb/hr) = [Volume of gas in pipe (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] * [events per hour (event/hr) / [379.5 (scf/lb-mol)]

Maximum Uncontrolled Annual Emissions for each Unit (tpy) = [Volume of gas in pipe (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [frequency of events (events/yr)] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)]

VRU Emissions

Pipeline Volume Vented =	260.00	scf/event
Assumed BlowDown Duration =	1	hrs/event
Unit BlowDowns in One Year =	24	events/yr
Molecular Weight of Stream =	24	lb/lb-mol
Control Type =	Flare	
Safety Factor=	25%	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)
N2	3.5588	0.72	8.60E-03
CO2	7.4776	1.51	0.02
H2S	0.5791	0.12	1.40E-03
C1	45.6802	9.20	0.11
C2	18.3263	3.69	0.04
C3	13.7979	2.78	0.03
iC4	1.9349	0.39	4.68E-03
C4	4.4200	0.89	0.01
iC5	1.1904	0.24	2.88E-03
C5	1.0498	0.21	2.54E-03
C6	0.2230	0.04	5.39E-04
nC7	0.0754	0.02	1.82E-04
Octane	0.0433	8.72E-03	1.05E-04
Water	0.0658	0.01	1.59E-04
EG	0.0000	-	-
TEG	0.0000	-	-
DEA	0.0000	-	-
MDEA	0.0000	-	-
PZ	0.0000	-	-
2,2-Dimethylpropane	0.0000	-	-
Cyclopentane	0.1262	0.03	3.05E-04
2-Methylpentane	0.2445	0.05	5.91E-04
3-Methylpentane	0.1397	0.03	3.38E-04
Methylcyclopentane	0.1729	0.03	4.18E-04
Benzene	0.3385	0.07	8.18E-04
Cyclohexane	0.2120	0.04	5.13E-04
2-Methylhexane	0.0256	5.17E-03	6.20E-05
3-Methylhexane	0.0417	8.40E-03	1.01E-04
Methylcyclohexane	0.1021	0.02	2.47E-04
2,5-Xylenol	0.0000	-	-
Toluene	0.1265	0.03	3.06E-04
2-Methylheptane	0.0114	2.30E-03	2.76E-05
Ethylcyclohexane	0.0071	1.42E-03	1.705E-05
Ethylbenzene	0.0115	2.31E-03	2.770E-05
o-Xylene	0.0105	2.11E-03	2.54E-05
Nonane	0.0070	1.418E-03	1.70E-05
Decane	0.0005	9.07E-05	1.088E-06
Total VOC	**24.31**	**4.90**	**0.06**
H_2S	**0.58**	**0.12**	**1.40E-03**
Total HAP	**0.71**	**0.14**	**1.72E-03**

[1] This is a representative estimate of the amount of gas vented per blowdown event.

Lea Midstream, Inc - The Dude Processing Plant

Dehy Blowdowns

Basis of Calculation:
Emissions from blowdown operations are calculated based on a mass balance as follows:

Maximum Uncontrolled Hourly Emissions for each Unit (lb/hr) = [Volume of gas in pipe (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] * [events per hour (event/hr) / [379.5 (scf/lb-mol)]

Maximum Uncontrolled Annual Emissions for each Unit (tpy) = [Volume of gas in pipe (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [frequency of events (events/yr)] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)]

Dehy Emissions

Pipeline Volume Vented =	23,447.56	scf/event
Assumed BlowDown Duration =	1	hrs/event
Unit BlowDowns in One Year =	1	events/yr
Molecular Weight of Stream =	23	lb/lb-mol
Control Type =	Flare	
Safety Factor=	25%	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)
N2	3.8595	67.44	0.03
CO2	0.1040	1.82	9.09E-04
H2S	0.0011	0.02	9.76E-06
C1	49.5214	865.38	0.43
C2	19.8671	347.18	0.17
C3	14.9620	261.46	0.13
iC4	2.0986	36.67	0.02
C4	4.7933	83.76	0.04
iC5	1.2912	22.56	0.01
C5	1.1386	19.90	9.95E-03
C6	0.2419	4.23	2.11E-03
nC7	0.0818	1.43	7.15E-04
Octane	0.0469	0.82	4.10E-04
Water	0.2888	5.05	2.52E-03
EG	0.0000	2.03E-06	1.02E-09
TEG	0.0000	3.61E-07	1.81E-10
DEA	0.0000	-	-
MDEA	0.0014	0.02	1.19E-05
PZ	0.0027	0.05	2.35E-05
2,2-Dimethylpropane	0.0000	-	-
Cyclopentane	0.1368	2.39	1.20E-03
2-Methylpentane	0.2653	4.64	2.32E-03
3-Methylpentane	0.1515	2.65	1.32E-03
Methylcyclopentane	0.1875	3.28	1.64E-03
Benzene	0.3584	6.26	3.13E-03
Cyclohexane	0.2299	4.02	2.01E-03
2-Methylhexane	0.0278	0.49	2.43E-04
3-Methylhexane	0.0452	0.79	3.95E-04
Methylcyclohexane	0.1107	1.94	9.68E-04
2,5-Xylenol	0.0000	-	-
Toluene	0.1349	2.36	1.18E-03
2-Methylheptane	0.0124	0.22	1.08E-04
Ethylcyclohexane	0.0076	0.13	6.683E-05
Ethylbenzene	0.0123	0.21	1.073E-04
o-Xylene	0.0112	0.20	9.78E-05
Nonane	0.0076	0.133	6.67E-05
Decane	0.0005	8.53E-03	4.267E-06
Total VOC	**26.35**	**460.53**	**0.23**
H_2S	**1.12E-03**	**0.02**	**9.76E-06**
Total HAP	**0.76**	**13.26**	**6.63E-03**

[1] This is a representative estimate of the amount of gas vented per blowdown event.

Lea Midstream, Inc - The Dude Processing Plant

Condensate Tank Degassing

Basis of Calculation:
Emissions from tank degassing are calculated based on a mass balance as follows:

Maximum Uncontrolled Hourly Emissions (lb/hr) = [Volume of gas vented (scf/event/unit)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# tank degassing activities occurring simultaneously (units)] / [event duration (hr/event)] / [379.5 (scf/lb-mol)] + Clingage volume (scf/event) x Liquid density (lb/scf) / event duration (hr/event) x [# tank degassing activities occurring simultaneously (units)]

Maximum Uncontrolled Annual Emissions (tpy) = [Volume of gas vented (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# tanks at site (units)] x [frequency of events (events/yr/unit)] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)] + Clingage volume (scf/event) x Liquid density (lb/scf) / Frequency of event (events/yr/unit) / 2,000 (lb/ton) x [# tanks at site (units)]

Tank Degassing Emissions - Non-Forced Ventilation

Estimated Gas Vented per Degassing Event =	1,838	scf/event
Number of Tanks =	8	units
Tank Degassing Events Occurring Simultaneously =	8	units
Assumed Degassing Event Duration =	1	hrs/event
Tank Degassing Events in One Year =	4	events/yr
Molecular Weight of Stream =	67.54	lb/lb-mol
Is Forced Ventilation used?	No	
Control Type =	VRU	
Safety Factor	25%	

Clingage-to-vessel Volume		
Clingage volume [1] =	0.35	scf
Clingage thickness [2] =	0.0004	ft
Diameter =	12	ft
Height =	20	ft
Liquid Density [1] =	62.40	lb/scf

[1] The roof of the tank is not included in the clingage volume since no liquid will reach the roof. Liquid density for water is used as a surrogate since the density of each condensate sample is not available and will vary over time.

[2] Clingage thickness per TCEQ Maintenance, Startup and Shutdown (MSS) Guidance Document for terminals and chemical plants. http://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/mss/mss-guidance.pdf

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)
Total VOC	**99.9998%**	**3487.71**	**2.07**
Total HAP	**5.85%**	**203.90**	**0.12**
Total H2S	**0.00002%**	**7.44E-04**	**4.41E-07**
Total Hexane	**2.67%**	**92.96**	**0.055**
Total Benzene	**2.53%**	**88.24**	**0.052**
Total Toluene	**0.59%**	**20.57**	**0.012**
Total Ethylbenzene	**0.04%**	**1.24**	**7.38E-04**
Total Xylenes	**0.03%**	**0.88**	**5.22E-04**

Lea Midstream, Inc - The Dude Processing Plant

Produced Water Tank Degassing

Basis of Calculation:
Emissions from tank degassing are calculated based on a mass balance as follows:

Maximum Uncontrolled Hourly Emissions (lb/hr) = [Volume of gas vented (scf/event/unit)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# tank degassing activities occurring simultaneously (units)] / [event duration (hr/event)] / [379.5 (scf/lb-mol)] + Clingage volume (scf/event) x Liquid density (lb/scf) / event duration (hr/event) x [# tank degassing activities occurring simultaneously (units)]

Maximum Uncontrolled Annual Emissions (tpy) = [Volume of gas vented (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [# tanks at site (units)] x [frequency of events (events/yr/unit)] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)] + Clingage volume (scf/event) x Liquid density (lb/scf) / Frequency of event (events/yr/unit) / 2,000 (lb/ton) x [# tanks at site (units)]

Tank Degassing Emissions - Non-Forced Ventilation

Estimated Gas Vented per Degassing Event =	1,838	scf/event
Number of Tanks =	2	units
Tank Degassing Events Occurring Simultaneously =	2	units
Assumed Degassing Event Duration =	1	hrs/event
Tank Degassing Events in One Year =	8	events/yr
Molecular Weight of Stream =	52.57	lb/lb-mol
Is Forced Ventilation used?	No	
Control Type =	VRU	
Safety Factor	25%	

Clingage-to-vessel Volume		
Clingage volume [1] =	0.35	scf
Clingage thickness [2] =	0.0004	ft
Diameter =	12	ft
Height =	20	ft
Liquid Density [1] =	62.40	lb/scf

[1] The roof of the tank is not included in the clingage volume since no liquid will reach the roof. Liquid density for water is used as a surrogate since the density of each condensate sample is not available and will vary over time.

[2] Clingage thickness per TCEQ Maintenance, Startup and Shutdown (MSS) Guidance Document for terminals and chemical plants. http://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/mss/mss-guidance.pdf

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)
Total VOC	**88.23%**	**609.38**	**0.47**
Total HAP	**24.79%**	**171.23**	**0.13**
Total H2S	**0.00001%**	**5.64E-05**	**4.36E-08**
Total Hexane	**1.15%**	**7.94**	**6.15E-03**
Total Benzene	**19.38%**	**133.86**	**0.104**
Total Toluene	**3.96%**	**27.35**	**0.02**
Total Ethylbenzene	**0.12%**	**0.83**	**6.39E-04**
Total Xylenes	**0.18%**	**1.25**	**9.70E-04**

Lea Midstream, Inc - The Dude Processing Plant

Pigging

Basis of Calculation:
Emissions from pigging operations are calculated based on a mass balance as follows:

Maximum Uncontrolled Hourly Emissions for each Unit (lb/hr) = [Volume of gas in pipe (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] * [events per hour (event/hr) / [379.5 (scf/lb-mol)]

Maximum Uncontrolled Annual Emissions for each Unit (tpy) = [Volume of gas in pipe (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [frequency of events (events/yr)] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)]

Pigging Emissions

Pipeline Volume Vented =	1,000,000.00	scf/event
Assumed BlowDown Duration =	1	hrs/event
Unit BlowDowns in One Year =	20	events/yr
Molecular Weight of Stream =	24	lb/lb-mol
Control Type =	Flare	
Safety Factor=	25%	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)
N2	3.5588	2757.96	27.58
CO2	7.4776	5794.94	57.95
H2S	0.5791	448.76	4.49
C1	45.6802	35401.01	354.01
C2	18.3263	14202.46	142.02
C3	13.7979	10693.00	106.93
iC4	1.9349	1499.53	15.00
C4	4.4200	3425.36	34.25
iC5	1.1904	922.50	9.23
C5	1.0498	813.56	8.14
C6	0.2230	172.80	1.73
nC7	0.0754	58.46	0.58
Octane	0.0433	33.53	0.34
Water	0.0658	50.99	0.51
EG	0.0000	-	-
TEG	0.0000	-	-
DEA	0.0000	-	-
MDEA	0.0000	-	-
PZ	0.0000	-	-
2,2-Dimethylpropane	0.0000	-	-
Cyclopentane	0.1262	97.81	0.98
2-Methylpentane	0.2445	189.51	1.90
3-Methylpentane	0.1397	108.24	1.08
Methylcyclopentane	0.1729	133.97	1.34
Benzene	0.3385	262.31	2.62
Cyclohexane	0.2120	164.33	1.64
2-Methylhexane	0.0256	19.87	0.20
3-Methylhexane	0.0417	32.30	0.32
Methylcyclohexane	0.1021	79.13	0.79
2,5-Xylenol	0.0000	-	-
Toluene	0.1265	98.06	0.98
2-Methylheptane	0.0114	8.86	0.09
Ethylcyclohexane	0.0071	5.47	0.055
Ethylbenzene	0.0115	8.88	0.089
o-Xylene	0.0105	8.13	0.08
Nonane	0.0070	5.456	0.05
Decane	0.0005	0.35	3.489E-03
Total VOC	**24.31**	**18841.41**	**188.41**
H_2S	**0.58**	**448.76**	**4.49**
Total HAP	**0.71**	**550.19**	**5.50**

[1] This is a representative estimate of the amount of gas vented per blowdown event.

Lea Midstream, Inc - The Dude Processing Plant

Train 2: Pressure Safety Valve Blowdowns

Basis of Calculation:
Emissions from pigging operations are calculated based on a mass balance as follows:

Maximum Uncontrolled Hourly Emissions for each Unit (lb/hr) = [Volume of gas in pipe (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] * [events per hour (event/hr) / [379.5 (scf/lb-mol)]

Maximum Uncontrolled Annual Emissions for each Unit (tpy) = [Volume of gas in pipe (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [frequency of events (events/yr)] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)]

Pressure Safety Valve Blowdowns

Pipeline Volume Vented =	1,302,083	scf/event
Number of Events per Hour =	1.00	event/hr
Assumed BlowDown Duration =	0.25	hrs/event
Unit BlowDowns in One Year =	1	events/yr
Molecular Weight of Stream =	24	lb/lb-mol
Control Type =	Flare	
Safety Factor=	25%	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)
N2	3.5588	897.77	1.80
CO2	7.4776	1886.37	3.77
H2S	0.5791	146.08	0.29
C1	45.6802	11523.77	23.05
C2	18.3263	4623.20	9.25
C3	13.7979	3480.79	6.96
iC4	1.9349	488.13	0.98
C4	4.4200	1115.03	2.23
iC5	1.1904	300.29	0.60
C5	1.0498	264.83	0.53
C6	0.2230	56.25	0.11
nC7	0.0754	19.03	0.04
Octane	0.0433	10.91	0.02
Water	0.0658	16.60	0.03
EG	0.0000	-	-
TEG	0.0000	-	-
DEA	0.0000	-	-
MDEA	0.0000	-	-
PZ	0.0000	-	-
2,2-Dimethylpropane	0.0000	-	-
Cyclopentane	0.1262	31.84	0.06
2-Methylpentane	0.2445	61.69	0.12
3-Methylpentane	0.1397	35.23	0.07
Methylcyclopentane	0.1729	43.61	0.09
Benzene	0.3385	85.39	0.17
Cyclohexane	0.2120	53.49	0.11
2-Methylhexane	0.0256	6.47	0.01
3-Methylhexane	0.0417	10.51	0.02
Methylcyclohexane	0.1021	25.76	0.05
2,5-Xylenol	0.0000	-	-
Toluene	0.1265	31.92	0.06
2-Methylheptane	0.0114	2.88	5.77E-03
Ethylcyclohexane	0.0071	1.78	3.558E-03
Ethylbenzene	0.0115	2.89	5.780E-03
o-Xylene	0.0105	2.65	5.29E-03
Nonane	0.0070	1.776	3.55E-03
Decane	0.0005	0.11	2.271E-04
Total VOC	**24.31**	**6133.27**	**12.27**
H_2S	**0.58**	**146.08**	**0.29**
Total HAP	**0.71**	**179.10**	**0.36**

[1] This is a representative estimate of the amount of gas vented per blowdown event.

Lea Midstream, Inc - The Dude Processing Plant

Train 2: Pressure Safety Valve Blowdowns

Basis of Calculation:
Emissions from pigging operations are calculated based on a mass balance as follows:

Maximum Uncontrolled Hourly Emissions for each Unit (lb/hr) = [Volume of gas in pipe (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] * [events per hour (event/hr) / [379.5 (scf/lb-mol)]

Maximum Uncontrolled Annual Emissions for each Unit (tpy) = [Volume of gas in pipe (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [frequency of events (events/yr)] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)]

Pressure Safety Valve Blowdowns

Pipeline Volume Vented =	281,250	scf/event
Number of Events per Hour =	1	event/hr
Assumed BlowDown Duration =	0.25	hrs/event
Unit BlowDowns in One Year =	1	events/yr
Molecular Weight of Stream =	23	lb/lb-mol
Control Type =	Flare	
Safety Factor=	25%	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)
N2	3.8595	202.24	0.40
CO2	0.1040	5.45	0.01
H2S	0.0011	0.06	1.17E-04
C1	49.5214	2595.04	5.19
C2	19.8671	1041.08	2.08
C3	14.9620	784.05	1.57
iC4	2.0986	109.97	0.22
C4	4.7933	251.18	0.50
iC5	1.2912	67.66	0.14
C5	1.1386	59.67	0.12
C6	0.2419	12.67	0.03
nC7	0.0818	4.29	8.58E-03
Octane	0.0469	2.46	4.92E-03
Water	0.2888	15.14	0.03
EG	0.0000	6.10E-06	1.22E-08
TEG	0.0000	1.08E-06	2.17E-09
DEA	0.0000	-	-
MDEA	0.0014	0.07	1.43E-04
PZ	0.0027	0.14	2.82E-04
2,2-Dimethylpropane	0.0000	-	-
Cyclopentane	0.1368	7.17	0.01
2-Methylpentane	0.2653	13.90	0.03
3-Methylpentane	0.1515	7.94	0.02
Methylcyclopentane	0.1875	9.82	0.02
Benzene	0.3584	18.78	0.04
Cyclohexane	0.2299	12.05	0.02
2-Methylhexane	0.0278	1.46	2.92E-03
3-Methylhexane	0.0452	2.37	4.74E-03
Methylcyclohexane	0.1107	5.80	0.01
2,5-Xylenol	0.0000	-	-
Toluene	0.1349	7.07	0.01
2-Methylheptane	0.0124	0.65	1.30E-03
Ethylcyclohexane	0.0076	0.40	8.017E-04
Ethylbenzene	0.0123	0.64	1.286E-03
o-Xylene	0.0112	0.59	1.17E-03
Nonane	0.0076	0.400	8.00E-04
Decane	0.0005	0.03	5.118E-05
Total VOC	**26.35**	**1381.01**	**2.76**
H_2S	**1.12E-03**	**0.059**	**1.17E-04**
Total HAP	**0.76**	**39.75**	**0.080**

[1] This is a representative estimate of the amount of gas vented per blowdown event.

Lea Midstream, Inc - The Dude Processing Plant

Haul Road [Exempt 20.2.72.202.B(5)]

Unit: HAUL

Control Equipment: N/A

Input Data

	Empty vehicle weight[1]	16	tons
	Load weight[2]	31.5	tons
	Loaded vehicle[3]	47.5	tons
Filter Blowdowns	Mean vehicle weight[4]	31.8	tons
	Daily Oil and water Throughput	833.1	bbls
	Vehicle frequency	0.19	trips/hour
	Round-trip distance	0.30	mile/trip
	Round-trip distance	506.82	miles/yr
	Operating hours	8760	hours/yr
	Surface silt content[5]	4.8	%
	Annual wet days[6]	70	days/yr
	Vehicle miles traveled[7]	0.06	mile/hr
	Control percentage	0%	nominal, base course chemical treatment

Emission Factors and Constants

Parameter	PM_{10}	$PM_{2.5}$
k, lb/VMT[8]	1.5	0.15
a, lb/VMT[8]	0.90	0.90
b, lb/VMT[8]	0.45	0.45
Hourly EF, lb/VMT[9]	1.90	0.19
Annual EF, lb/VMT[10]	1.54	0.15

Uncontrolled Emissions

PM_{10}	$PM_{2.5}$	
0.110	0.011	lb/hr[11]
0.389	0.0389	ton/yr[12]

Controlled Emissions

PM_{10}	$PM_{2.5}$	
0.1	0.01	lb/hr[13]
3.89E-01	3.89E-02	ton/yr[13]

Notes

[1] Empty vehicle weight includes driver and occupants and full fuel load.
[2] Cargo, transported materials, etc. (8.3434 lb/gal RVP5 *7560 gal truck/ 2000lb/ton)
[3] Loaded vehicle weight = Empty + Load Size
[4] Mean Vehicle weight = (Loaded Weight + Empty Weight) / 2
[5] AP-42 Table 13.2.2-1, Sand and gravel processing
[6] AP-42 Figure 13.2.2-1
[7] VMT/hr = Vehicle Miles Traveled per hour = Trips per hour * Segment Length
[8] Table 13.2.2-2, Industrial Roads
[9] AP-42 13.2.2, Equation 1a
[10] AP-42 13.2.2, Equation 2
[11] lb/hr = Hourly EF (lb/VMT) * VMT (mile/hr)
[12] ton/yr = Annual EF (lb/VMT) * Truck/day * Mile/truck * 365day/yr * 1ton/2000lb
[13] Uncontrolled emissions * (1 - Control%)

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.

Amine Treating Unit (Unit IDs: AMINE-1):

- Inlet gas analysis (dated June 6, 2023)
- BR&E ProMax report

Hot Oil Heaters (Unit IDs: HO-1 to HO-4):

- Manufacturer specification sheet
- AP-42 Section 1.4 (July 1998) - Tables 1.4-1, 1.4-2, & 1.4-3
- 40 CFR 98 Subpart A Table A-1
- 40 CFR 98 Subpart C Tables C-1 & C-2

Heaters (Unit IDs: HT-1 and HT-2):

- Manufacturer specification sheet
- AP-42 Section 1.4 (July 1998) - Tables 1.4-1, 1.4-2, & 1.4-3
- 40 CFR 98 Subpart A Table A-1
- 40 CFR 98 Subpart C Tables C-1 & C-2

TEG Dehydrator (Unit ID: DEHY-1):

- Inlet gas analysis (dated June 6, 2023)
- BR&E ProMax report

Dehydrator Reboiler (Unit ID: RBL-1):

- AP-42 Section 1.4 (July 1998) - Tables 1.4-1, 1.4-2, & 1.4-3
- 40 CFR 98 Subpart A Table A-1
- 40 CFR 98 Subpart C Tables C-1 & C-2

Condensate Storage Tanks (Unit IDs: TK-1 through TK-8):

- Inlet gas analysis (dated June 6, 2023)
- BR&E ProMax report

Condensate Truck Loading (Unit ID: LOAD):

- Inlet gas analysis (dated June 6, 2023)

- BR&E ProMax report

Produced Water Storage Tanks (Unit IDs: PWTK-1 and PWTK-2):

- Inlet gas analysis (dated June 6, 2023)
- BR&E ProMax report

Produced Water Truck Loading (Unit ID: PW LOAD):

- Inlet gas analysis (dated June 6, 2023)
- BR&E ProMax report

Flares (Unit IDs: LP FLARE, HP FLARE, FLARE-2, and AGI-FLARE):

- Manufacturer specification sheet
- BR&E ProMax report
- AP-42 Section 13.5 (February 2018) - Tables 13.5-1 & 13.5-2
- 40 CFR 98 Subpart A Table A-1
- 40 CFR 98 Subpart C Tables C-1 & C-2

Combustors (Unit IDs: COMB-1 and COMB-2):

- Manufacturer specification sheet
- BR&E ProMax report
- AP-42 Section 1.4 (July 1998) - Tables 1.4-1 & 1.4-2
- 40 CFR 98 Subpart A Table A-1
- 40 CFR 98 Subpart C Tables C-1 & C-2

Fugitive Emissions (Unit ID: FUG-1):

- Inlet gas analysis
- Derived condensate composition from BR&E ProMax
- EPA Protocol for Equipment Leak Emission Estimates Table 2-4

Unpaved Haul Roads (Unit ID: HAUL) (exempt under 20.2.72.202.B.(5) NMAC):

- AP-42 Chapter 13.2.2

Caterpillar G3516LE Compressor Engines (Unit IDs: ENG-1, ENG-5, ENG-6, and ENG-22):

- Manufacturer specification sheet
- Catalyst guarantee sheet
- AP-42 Table 3.2-2

Caterpillar G3606LE Compressor Engines (Unit IDs: ENG-2, ENG-3, ENG-4, and ENG-7):

- Manufacturer specification sheet
- Catalyst guarantee sheet
- AP-42 Table 3.2-2

Caterpillar G3612A4 Compressor Engines (Unit IDs: ENG-20 and ENG-21):

- Manufacturer specification sheet
- Catalyst guarantee sheet
- AP-42 Table 3.2-2

Waukesha P9394GSI S5 Generator Engines (Unit IDs: ENG-8 through ENG-19):

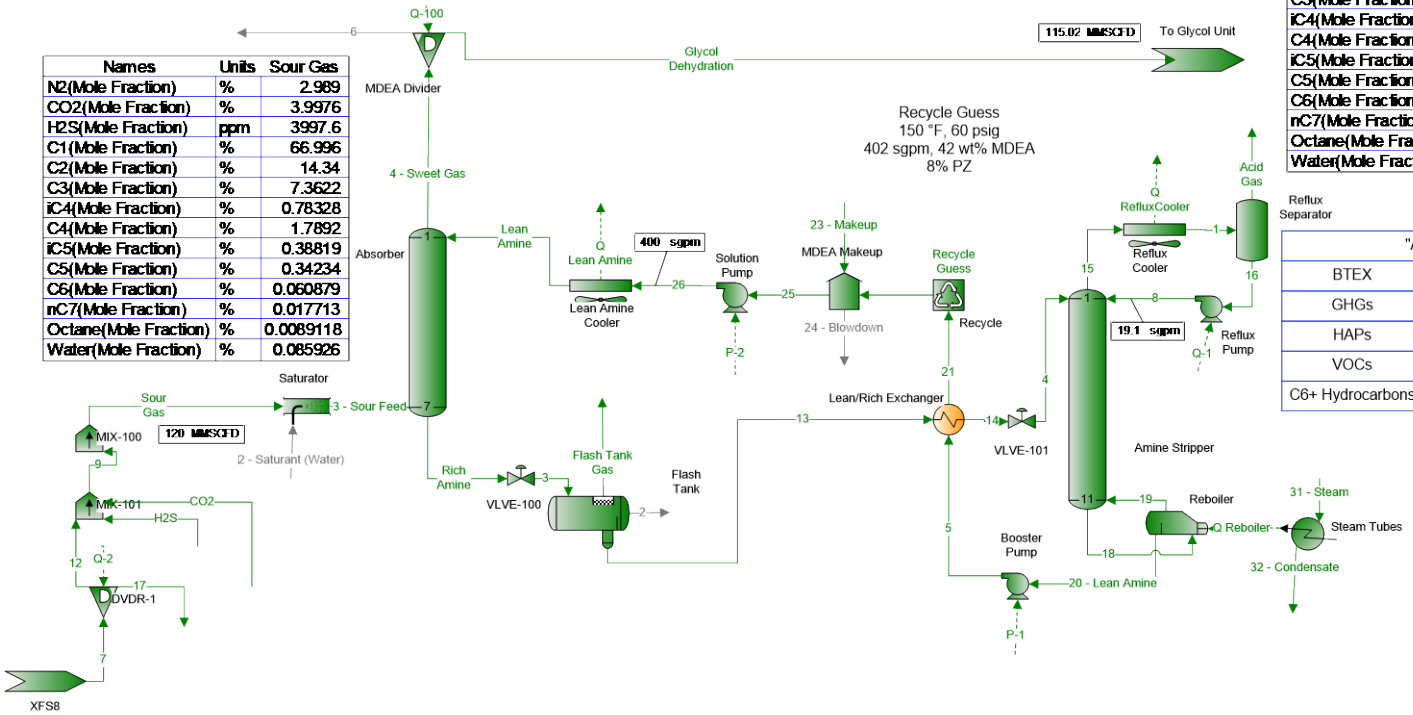
- Manufacturer specification sheet
- Catalyst guarantee sheet
- AP-42 Table 3.2-3

BR&E ProMax Report

Amine Sweetening
Plant Schematic

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

MDEA Sweetening Unit



Names	Units	Sour Gas
N2(Mole Fraction)	%	2.989
CO2(Mole Fraction)	%	3.9976
H2S(Mole Fraction)	ppm	3997.6
C1(Mole Fraction)	%	66.996
C2(Mole Fraction)	%	14.34
C3(Mole Fraction)	%	7.3622
iC4(Mole Fraction)	%	0.78328
C4(Mole Fraction)	%	1.7892
iC5(Mole Fraction)	%	0.38819
C5(Mole Fraction)	%	0.34234
C6(Mole Fraction)	%	0.060879
nC7(Mole Fraction)	%	0.017713
Octane(Mole Fraction)	%	0.0089118
Water(Mole Fraction)	%	0.085926

Names	Units	Glycol Dehydration
N2(Mole Fraction)	%	3.1173
CO2(Mole Fraction)	ppm	534.84
H2S(Mole Fraction)	%	0.00074144
C1(Mole Fraction)	%	69.846
C2(Mole Fraction)	%	14.95
C3(Mole Fraction)	%	7.6774
iC4(Mole Fraction)	%	0.81697
C4(Mole Fraction)	%	1.866
iC5(Mole Fraction)	%	0.40492
C5(Mole Fraction)	%	0.35709
C6(Mole Fraction)	%	0.063506
nC7(Mole Fraction)	%	0.018478
Octane(Mole Fraction)	%	0.009297
Water(Mole Fraction)	%	0.36279

"Acid Gas" Component Sums		
BTEX	129.6	ton/yr
GHGs	9.948E+04	ton/yr
HAPs	129.6	ton/yr
VOCs	139.5	ton/yr
C6+ Hydrocarbons	130.2	ton/yr

Names	Units	Lean Amine	Rich Amine
CO2 Loading Mole/Mole Amine		0.0026636	0.5925
H2S Loading Mole/Mole Amine		0.0015663	0.06121
Total Acid Gas Loading/Mole Amine		0.0042299	0.65371

Names	Units	Q Reboiler	Q RefluxCooler	Q Lean Amine	Booster Pump	Solution Pump	Reflux Pump
Energy Rate	MMBtu/h	26.391	10.642	2.481	0.036693	0.62901	0.00013494
Power	hp	10372	4182.4	975.07	14.421	247.21	0.053035

* User Specified Values
? Extrapolated or Approximate Values

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

Connections

	Acid Gas	CO2	Flash Tank Gas	Glycol Dehydration	H2S
From Block	Reflux Separator	--	Flash Tank	MDEA Divider	--
To Block	--	MIX-101	--	To Glycol Unit	MIX-101

Stream Composition

Mole Fraction	Acid Gas %	CO2 %	Flash Tank Gas %	Glycol Dehydration %	H2S %
N2	0.000568089	0 *	1.15674	3.11731	0 *
CO2	83.9337	100 *	23.4554	0.0534835	0 *
H2S	8.48334	0 *	2.60765	0.000741442	100 *
C1	0.0711943	0 *	54.1138	69.8461	0 *
C2	0.0217737	0 *	11.4398	14.9498	0 *
C3	0.00550278	0 *	3.61586	7.67743	0 *
iC4	0.000237542	0 *	0.219259	0.816971	0 *
C4	0.00114756	0 *	0.704464	1.866	0 *
iC5	5.94987E-05	0 *	0.0661617	0.404923	0 *
C5	8.01258E-05	0 *	0.0718109	0.35709	0 *
C6	5.43502E-06	0 *	0.00696401	0.0635062	0 *
nC7	3.97871E-07	0 *	0.000897417	0.018478	0 *
Octane	1.51808E-07	0 *	0.00034065	0.00929704	0 *
Water	7.42274	0 *	2.04559	0.362786	0 *
EG	4.05503E-09	0 *	8.15086E-08	4.24146E-08	0 *
TEG	8.10204E-13	0 *	1.09799E-09	3.11577E-09	0 *
DEA	0	0 *	0	0	0 *
MDEA	2.46927E-08	0 *	6.67625E-05	0.000259202	0 *
PZ	3.74019E-08	0 *	4.7164E-06	0.000705602	0 *
2,2-Dimethylpropane	0	0 *	0	0	0 *
Cyclopentane	0.000163903	0 *	0.0341168	0.0441387	0 *
2-Methylpentane	6.39055E-06	0 *	0.00815119	0.069647	0 *
3-Methylpentane	3.62558E-06	0 *	0.0046264	0.0397786	0 *
Methylcyclopentane	5.28675E-05	0 *	0.0197326	0.0504007	0 *
Benzene	0.0469853	0 *	0.30045	0.103824	0 *
Cyclohexane	0.00020367	0 *	0.0385534	0.0618024	0 *
2-Methylhexane	1.45674E-07	0 *	0.000327004	0.00628197	0 *
3-Methylhexane	2.36256E-07	0 *	0.000530307	0.0102082	0 *
Methylcyclohexane	1.67341E-05	0 *	0.00676107	0.0255195	0 *
2,5-Xylenol	0	0 *	0	0	0 *
Toluene	0.0108394	0 *	0.0732844	0.0331211	0 *
2-Methylheptane	4.07132E-08	0 *	9.35067E-05	0.00245591	0 *
Ethylcyclohexane	5.77841E-07	0 *	0.000260838	0.00154236	0 *
Ethylbenzene	0.000594813	0 *	0.00444365	0.00261617	0 *
o-Xylene	0.000757726	0 *	0.00383933	0.00238587	0 *
Nonane	3.38148E-09	0 *	1.67394E-05	0.0013473	0 *
Decane	0	0 *	3.00293E-07	7.76579E-05	0 *

Mass Fraction	Acid Gas %	CO2 %	Flash Tank Gas %	Glycol Dehydration %	H2S %
N2	0.000385916	0 *	1.21518	3.85946	0 *
CO2	89.5765	100 *	38.7106	0.104027	0 *
H2S	7.01114	0 *	3.33275	0.00111678	100 *
C1	0.0276966	0 *	32.5552	49.5214	0 *
C2	0.0158768	0 *	12.8997	19.8671	0 *
C3	0.00588421	0 *	5.97927	14.962	0 *
iC4	0.000334806	0 *	0.477904	2.09859	0 *
C4	0.00161744	0 *	1.53547	4.79328	0 *
iC5	0.000104099	0 *	0.17901	1.29116	0 *
C5	0.000140188	0 *	0.194295	1.13864	0 *

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

Mass Fraction	Acid Gas %	CO2 %	Flash Tank Gas %	Glycol Dehydration %	H2S %
C6	1.13578E-05	0 *	0.0225052	0.241869	0 *
nC7	9.66783E-07	0 *	0.00337219	0.0818298	0 *
Octane	4.20514E-07	0 *	0.00145923	0.0469353	0 *
Water	3.24277	0 *	1.38198	0.28885	0 *
EG	6.1034E-09	0 *	1.89719E-07	1.16349E-07	0 *
TEG	2.95051E-12	0 *	6.18347E-09	2.06794E-08	0 *
DEA	0	0 *	0	0	0 *
MDEA	7.13538E-08	0 *	0.000298341	0.00136508	0 *
PZ	7.81245E-08	0 *	1.52347E-05	0.0026861	0 *
2,2-Dimethylpropane	0	0 *	0	0	0 *
Cyclopentane	0.000278754	0 *	0.0897286	0.136811	0 *
2-Methylpentane	1.33546E-05	0 *	0.0263418	0.265256	0 *
3-Methylpentane	7.57654E-06	0 *	0.0149509	0.1515	0 *
Methylcyclopentane	0.000107895	0 *	0.0622771	0.187465	0 *
Benzene	0.0889999	0 *	0.880098	0.358421	0 *
Cyclohexane	0.000415663	0 *	0.121677	0.229873	0 *
2-Methylhexane	3.53973E-07	0 *	0.00122877	0.0278197	0 *
3-Methylhexane	5.74076E-07	0 *	0.00199272	0.0452071	0 *
Methylcyclohexane	3.98439E-05	0 *	0.0248947	0.110739	0 *
2,5-Xylenol	0	0 *	0	0	0 *
Toluene	0.024219	0 *	0.253217	0.134873	0 *
2-Methylheptane	1.12777E-07	0 *	0.000400552	0.0123984	0 *
Ethylcyclohexane	1.57239E-06	0 *	0.00109763	0.00764906	0 *
Ethylbenzene	0.00153134	0 *	0.0176914	0.0122752	0 *
o-Xylene	0.00195076	0 *	0.0152855	0.0111946	0 *
Nonane	1.0517E-08	0 *	8.0511E-05	0.00763695	0 *
Decane	0	0 *	1.60227E-06	0.000488331	0 *

Mass Flow	Acid Gas lb/h	CO2 lb/h	Flash Tank Gas lb/h	Glycol Dehydration lb/h	H2S lb/h
N2	0.097821	0 *	3.33711	10994.4	0 *
CO2	22705.6	22393.7 *	106.306	296.34	0 *
H2S	1777.16	0 *	9.15232	3.18135	1734.16 *
C1	7.02046	0 *	89.4024	141071	0 *
C2	4.02441	0 *	35.425	56595.2	0 *
C3	1.49151	0 *	16.4201	42622.1	0 *
iC4	0.0848656	0 *	1.31241	5978.23	0 *
C4	0.409984	0 *	4.21668	13654.5	0 *
iC5	0.0263868	0 *	0.491593	3678.11	0 *
C5	0.0355346	0 *	0.533568	3243.63	0 *
C6	0.00287895	0 *	0.0618034	689.007	0 *
nC7	0.000245057	0 *	0.00926063	233.107	0 *
Octane	0.000106591	0 *	0.00400731	133.704	0 *
Water	821.968	0 *	3.79516	822.841	0 *
EG	1.54707E-06	0 *	5.21003E-07	0.000331441	0 *
TEG	7.47887E-10	0 *	1.69809E-08	5.89089E-05	0 *
DEA	0	0 *	0	0	0 *
MDEA	1.80866E-05	0 *	0.000819298	3.88867	0 *
PZ	1.98028E-05	0 *	4.18373E-05	7.65186	0 *
2,2-Dimethylpropane	0	0 *	0	0	0 *
Cyclopentane	0.0706577	0 *	0.246411	389.731	0 *
2-Methylpentane	0.0033851	0 *	0.0723393	755.63	0 *
3-Methylpentane	0.00192048	0 *	0.0410578	431.576	0 *
Methylcyclopentane	0.027349	0 *	0.171024	534.027	0 *
Benzene	22.5595	0 *	2.41691	1021.03	0 *
Cyclohexane	0.105361	0 *	0.334146	654.836	0 *
2-Methylhexane	8.97241E-05	0 *	0.00337443	79.2494	0 *
3-Methylhexane	0.000145515	0 *	0.00547235	128.781	0 *
Methylcyclohexane	0.0100995	0 *	0.0683652	315.462	0 *

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

Mass Flow	Acid Gas lb/h	CO2 lb/h	Flash Tank Gas lb/h	Glycol Dehydration lb/h	H2S lb/h
2,5-Xylenol	0	0 *	0	0	0 *
Toluene	6.13895	0 *	0.69538	384.21	0 *
2-Methylheptane	2.85864E-05	0 *	0.00109999	35.3192	0 *
Ethylcyclohexane	0.000398566	0 *	0.00301428	21.7897	0 *
Ethylbenzene	0.388161	0 *	0.0485838	34.9681	0 *
o-Xylene	0.494474	0 *	0.0419766	31.8898	0 *
Nonane	2.66582E-06	0 *	0.000221098	21.7553	0 *
Decane	0	0 *	4.40012E-06	1.3911	0 *

Stream Properties

Property	Units	Acid Gas	CO2	Flash Tank Gas	Glycol Dehydration	H2S
Temperature	°F	119.015	90 *	123.403	147.606	89 *
Pressure	psig	9	1038 *	65 *	991.54	1094 *
Mole Fraction Vapor	%	100	100	100	99.9976	0
Mole Fraction Light Liquid	%	0	0	0	0.0024363	100
Mole Fraction Heavy Liquid	%	0	0	0	0	0
Phase Mole Fraction	%	100	100	100	100	100
Molecular Weight	lb/lbmol	41.2372	44.0095	26.666	22.6266	34.0809
Mass Density	lb/ft^3	0.150232	17.4973	0.339853	4.1673	47.6167
Molar Flow	lbmol/h	614.681	508.837 *	10.2984	12590	50.8837 *
Mass Flow	lb/h	25347.7	22393.7	274.618	284868	1734.16
Vapor Volumetric Flow	ft^3/h	168724	1279.83	808.049	68358	36.4192
Liquid Volumetric Flow	gpm	21035.7	159.564	100.744	8522.56	4.54058
Std Vapor Volumetric Flow	MMSCFD	5.61584	4.64883	0.0940882	115.024	0.464883
Std Liquid Volumetric Flow	sgpm	61.7811	54.7825	1.19068	1561.48	4.33961
Compressibility		0.992728	0.448334	0.983851	0.837301	0.134619
Specific Gravity		1.42381	1.51953	0.920709		0.76347
API Gravity						45.6588
Enthalpy	Btu/h	-9.22849E+07	-8.71371E+07	-672469	-4.27534E+08	-778355
Mass Enthalpy	Btu/lb	-3640.76	-3891.15	-2448.75	-1500.81	-448.836
Mass Cp	Btu/(lb*°F)	0.21934	1.50855	0.379819	0.621412	0.565273
Ideal Gas CpCv Ratio		1.28413	1.28531	1.24924	1.21688	1.3198
Dynamic Viscosity	cP	0.0159114	0.0237079	0.0130365		0.136849
Kinematic Viscosity	cSt	6.6119	0.0845862	2.39469		0.179416
Thermal Conductivity	Btu/(h*ft*°F)	0.0105928	0.018686	0.0171325		0.0739442
Surface Tension	lbf/ft					0.000563522
Net Ideal Gas Heating Value	Btu/ft^3	53.0229	0	825.938	1183.31	584.955
Net Liquid Heating Value	Btu/lb	373.651	-74.8536	11704.7	19833.1	6332
Gross Ideal Gas Heating Value	Btu/ft^3	61.2163	0	910.689	1301.99	635.108
Gross Liquid Heating Value	Btu/lb	449.302	-74.8536	12914.9	21830.4	6892.4

Remarks

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

Connections

	Lean Amine	Recycle Guess	Rich Amine	Sour Gas	1
From Block	Lean Amine Cooler	Recycle	Absorber	MIX-100	Reflux Cooler
To Block	Absorber	MDEA Makeup	VLVE-100	Saturator	Reflux Separator

Stream Composition

Mole Fraction	Lean Amine %	Recycle Guess %	Rich Amine %	Sour Gas %	1 %
N2	0	0	0.00177819	2.98899	0.000305378
CO2	0.0368611	0.0373334	7.55089	3.99764	45.1609
H2S	0.0216753	0.0219531	0.780068	0.399764	4.57053
C1	0	0	0.0871636	66.9956	0.0382711
C2	0	0	0.0190259	14.3399	0.0117047
C3	0	0	0.00589069	7.36217	0.00295806
iC4	0	0	0.000348631	0.783278	0.000127691
C4	0	0	0.00115439	1.78923	0.000616877
iC5	0	0	0.000104114	0.388187	3.19836E-05
C5	0	0	0.00011439	0.342343	4.30718E-05
C6	0	0	1.0885E-05	0.0608786	2.92159E-06
nC7	0	0	1.37573E-06	0.0177125	2.13875E-07
Octane	0	0	5.22282E-07	0.00891181	8.16042E-08
Water	86.1005	85.9243	78.8014	0.0859258	50.1577
EG	0.000606756	0.000614531	0.000558756	0	5.31841E-06
TEG	0.00150232	0.00152156	0.00138365	0	2.29075E-07
DEA	0	0	0	0	0
MDEA	10.9527	11.0925	10.0872	0	0.0148583
PZ	2.88614	2.92171	2.6569	0	0.00978941
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	0	0	6.55628E-05	0.0423428	8.81113E-05
2-Methylpentane	0	0	1.27432E-05	0.0667657	3.43524E-06
3-Methylpentane	0	0	7.23256E-06	0.038133	1.94893E-06
Methylcyclopentane	0	0	3.41826E-05	0.0483287	2.84196E-05
Benzene	0	0	0.00463701	0.101953	0.0253039
Cyclohexane	0	0	7.57336E-05	0.0592795	0.000109488
2-Methylhexane	0	0	5.01356E-07	0.00602175	7.8307E-08
3-Methylhexane	0	0	8.13057E-07	0.00978537	1.26999E-07
Methylcyclohexane	0	0	1.15891E-05	0.0244674	8.99557E-06
2,5-Xylenol	0	0	0	0	0
Toluene	0	0	0.00107568	0.0323124	0.00583486
2-Methylheptane	0	0	1.43278E-07	0.00235415	2.18853E-08
Ethylcyclohexane	0	0	4.41062E-07	0.00147864	3.10623E-07
Ethylbenzene	0	0	5.96584E-05	0.00253901	0.000320106
o-Xylene	0	0	7.32781E-05	0.00232541	0.000408015
Nonane	0	0	2.53012E-08	0.00129145	1.8177E-09
Decane	0	0	4.5062E-10	7.4438E-05	0

Mass Fraction	Lean Amine %	Recycle Guess %	Rich Amine %	Sour Gas %	1 %
N2	0	0	0.0015506	3.55877	0.000280182
CO2	0.0522041	0.0525923	10.3443	7.47758	65.0947
H2S	0.023772	0.0239488	0.82756	0.579062	5.10168
C1	0	0	0.0435273	45.6802	0.0201084
C2	0	0	0.0178083	18.3263	0.011527
C3	0	0	0.00808569	13.7979	0.00427207
iC4	0	0	0.000630759	1.93494	0.000243074
C4	0	0	0.00208857	4.41996	0.00117429
iC5	0	0	0.000233827	1.19037	7.55775E-05

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

Mass Fraction	Lean Amine %	Recycle Guess %	Rich Amine %	Sour Gas %	1 %
C5	0	0	0.000256905	1.04979	0.000101779
C6	0	0	2.9199E-05	0.222976	8.24592E-06
nC7	0	0	4.29107E-06	0.0754341	7.01894E-07
Octane	0	0	1.8571E-06	0.0432664	3.05297E-07
Water	49.9156	49.549	44.1907	0.0657923	29.5947
EG	0.00121191	0.00122092	0.00107955	0	1.08115E-05
TEG	0.00726009	0.00731408	0.00646807	0	1.12669E-06
DEA	0	0	0	0	0
MDEA	42	42.3104	37.4165	0	0.0579887
PZ	8	8.05559	7.12384	0	0.0276169
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	0	0	0.000143131	0.126215	0.00020239
2-Methylpentane	0	0	3.41836E-05	0.244538	9.69563E-06
3-Methylpentane	0	0	1.94013E-05	0.139667	5.50066E-06
Methylcyclopentane	0	0	8.95498E-05	0.17287	7.83353E-05
Benzene	0	0	0.0112749	0.338476	0.0647351
Cyclohexane	0	0	0.000198403	0.21204	0.000301791
2-Methylhexane	0	0	1.56379E-06	0.0256454	2.56988E-07
3-Methylhexane	0	0	2.53602E-06	0.0416738	4.16785E-07
Methylcyclohexane	0	0	3.54206E-05	0.102105	2.89277E-05
2,5-Xylenol	0	0	0	0	0
Toluene	0	0	0.00308516	0.126538	0.0176079
2-Methylheptane	0	0	5.09461E-07	0.0114293	8.18772E-08
Ethylcyclohexane	0	0	1.54063E-06	0.00705203	1.14159E-06
Ethylbenzene	0	0	0.000197156	0.0114566	0.00111304
o-Xylene	0	0	0.000242165	0.0104928	0.00141871
Nonane	0	0	1.01012E-07	0.00703984	7.63543E-09
Decane	0	0	1.99579E-09	0.000450147	0

Mass Flow	Lean Amine lb/h	Recycle Guess lb/h	Rich Amine lb/h	Sour Gas lb/h	1 lb/h
N2	0	0	3.43494	10997.8	0.0978222
CO2	103.028	103.028	22914.9	23108.2	22727.1
H2S	46.9158	46.9158	1833.23	1789.5	1781.19
C1	0	0	96.4229	141167	7.02063
C2	0	0	39.4494	56634.6	4.02452
C3	0	0	17.9117	42640.1	1.49154
iC4	0	0	1.39728	5979.63	0.0848667
C4	0	0	4.62667	13659.2	0.409992
iC5	0	0	0.51798	3678.63	0.0263871
C5	0	0	0.569102	3244.19	0.035535
C6	0	0	0.0646824	689.072	0.00287897
nC7	0	0	0.00950569	233.117	0.000245058
Octane	0	0	0.0041139	133.708	0.000106591
Water	98511.9	97066.7	97892.4	203.32	10332.7
EG	2.39179	2.39179	2.39146	0	0.0037747
TEG	14.3283	14.3283	14.3283	0	0.000393372
DEA	0	0	0	0	0
MDEA	82890	82886.1	82886.1	0	20.2461
PZ	15788.6	15780.9	15780.9	0	9.64213
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	0	0	0.317069	390.048	0.0706622
2-Methylpentane	0	0	0.0757244	755.706	0.00338512
3-Methylpentane	0	0	0.0429783	431.619	0.00192049
Methylcyclopentane	0	0	0.198373	534.226	0.0273499
Benzene	0	0	24.9764	1046.01	22.6015
Cyclohexane	0	0	0.439507	655.275	0.105367
2-Methylhexane	0	0	0.00346415	79.2529	8.97245E-05
3-Methylhexane	0	0	0.00561787	128.786	0.000145516

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

Mass Flow	Lean Amine lb/h	Recycle Guess lb/h	Rich Amine lb/h	Sour Gas lb/h	1 lb/h
Methylcyclohexane	0	0	0.0784648	315.54	0.0100998
2,5-Xylenol	0	0	0	0	0
Toluene	0	0	6.83433	391.045	6.1476
2-Methylheptane	0	0	0.00112857	35.3203	2.85865E-05
Ethylcyclohexane	0	0	0.00341284	21.7932	0.000398574
Ethylbenzene	0	0	0.436744	35.4048	0.388606
o-Xylene	0	0	0.536451	32.4263	0.495326
Nonane	0	0	0.000223763	21.7555	2.66583E-06
Decane	0	0	4.42114E-06	1.39111	0

Stream Properties

Property	Units	Lean Amine	Recycle Guess	Rich Amine	Sour Gas	1
Temperature	°F	110 *	124.414	120.388	88.0191	120 *
Pressure	psig	991.54	60	994.54	1034	10
Mole Fraction Vapor	%	0	0	0	99.8639	53.6865
Mole Fraction Light Liquid	%	100	100	100	0.131877	46.3135
Mole Fraction Heavy Liquid	%	0	0	0	0.00425891	0
Phase Mole Fraction	%	100	100	100	100	100
Molecular Weight	lb/lbmol	31.075	31.2408	32.1251	23.5283	30.5326
Mass Density	lb/ft^3	64.3145	63.9419	72.4874	5.65894	0.215902
Molar Flow	lbmol/h	6351	6270.65	6895.63	13134.6	1143.49
Mass Flow	lb/h	197357	195900	221523	309034	34913.9
Vapor Volumetric Flow	ft^3/h	3068.63	3063.73	3056.02	54609.9	161712
Liquid Volumetric Flow	gpm	382.582	381.971	381.01	6808.5	20161.4
Std Vapor Volumetric Flow	MMSCFD	58.0239	57.2898	62.9998	120 *	10.4472
Std Liquid Volumetric Flow	sgpm	400	397.082	460.054	1621.54	80.922
Compressibility		0.0794294	0.00572597	0.071764	0.740959	0.533323
Specific Gravity		1.0312	1.02522	1.16224		
API Gravity		3.94935	4.08444	-10.1477		
Enthalpy	Btu/h	-8.04961E+08	-7.93254E+08	-9.01998E+08	-5.24564E+08	-1.56844E+08
Mass Enthalpy	Btu/lb	-4078.7	-4049.27	-4071.81	-1697.43	-4492.3
Mass Cp	Btu/(lb*°F)	0.816536	0.828454	0.637765	0.665601	0.43198
Ideal Gas CpCv Ratio		1.15368	1.14891	1.15661	1.23419	1.30189
Dynamic Viscosity	cP	4.2607	3.36214	6.18909		
Kinematic Viscosity	cSt	4.13572	3.28253	5.3302		
Thermal Conductivity	Btu/(h*ft*°F)	0.197714	0.196637	0.173174		
Surface Tension	lbf/ft	0.00370499	0.00362247	0.00359447 ?		
Net Ideal Gas Heating Value	Btu/ft^3	482.521	488.641	450.313	1137.34	29.4055
Net Liquid Heating Value	Btu/lb	5218.18	5264.05	4712.45	18327.7	-6.48505
Gross Ideal Gas Heating Value	Btu/ft^3	568.62	575.195	529.88	1251.25	57.0424
Gross Liquid Heating Value	Btu/lb	6272.9	6318.73	5655.3	20171.1	338.097

Remarks

ProMax 6.0.24302.0
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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

Connections

	2	2 - Saturant (Water)	3	3 - Sour Feed	4
From Block	Flash Tank	--	VLVE-100	Saturator	VLVE-101
To Block	--	Saturator	Flash Tank	Absorber	Amine Stripper

Stream Composition

Mole Fraction	2 %	2 - Saturant (Water) %	3 %	3 - Sour Feed %	4 %
N2		0 *	0.00177819	2.98899	5.07156E-05
CO2		0 *	7.55089	3.99764	7.5271
H2S		0 *	0.780068	0.399764	0.777335
C1		0 *	0.0871636	66.9956	0.00635579
C2		0 *	0.0190259	14.3399	0.00194383
C3		0 *	0.00589069	7.36217	0.000491255
iC4		0 *	0.000348631	0.783278	2.12063E-05
C4		0 *	0.00115439	1.78923	0.000102447
iC5		0 *	0.000104114	0.388187	5.31169E-06
C5		0 *	0.00011439	0.342343	7.15315E-06
C6		0 *	1.0885E-05	0.0608786	4.85206E-07
nC7		0 *	1.37573E-06	0.0177125	3.55195E-08
Octane		0 *	5.22282E-07	0.00891181	1.35525E-08
Water		100 *	78.8014	0.0859258	78.9162
EG		0 *	0.000558756	0	0.000559591
TEG		0 *	0.00138365	0	0.00138572
DEA		0 *	0	0	0
MDEA		0 *	10.0872	0	10.1023
PZ		0 *	2.6569	0	2.66088
2,2-Dimethylpropane		0 *	0	0	0
Cyclopentane		0 *	6.55628E-05	0.0423428	1.46323E-05
2-Methylpentane		0 *	1.27432E-05	0.0667657	5.7051E-07
3-Methylpentane		0 *	7.23256E-06	0.038133	3.23669E-07
Methylcyclopentane		0 *	3.41826E-05	0.0483287	4.71969E-06
Benzene		0 *	0.00463701	0.101953	0.00419456
Cyclohexane		0 *	7.57336E-05	0.0592795	1.81824E-05
2-Methylhexane		0 *	5.01356E-07	0.00602175	1.30049E-08
3-Methylhexane		0 *	8.13057E-07	0.00978537	2.10915E-08
Methylcyclohexane		0 *	1.15891E-05	0.0244674	1.49392E-06
2,5-Xylenol		0 *	0	0	0
Toluene		0 *	0.00107568	0.0323124	0.000967673
2-Methylheptane		0 *	1.43278E-07	0.00235415	3.63463E-09
Ethylcyclohexane		0 *	4.41062E-07	0.00147864	5.15862E-08
Ethylbenzene		0 *	5.96584E-05	0.00253901	5.31013E-05
o-Xylene		0 *	7.32781E-05	0.00232541	6.76452E-05
Nonane		0 *	2.53012E-08	0.00129145	3.01878E-10
Decane		0 *	4.5062E-10	7.4438E-05	2.145E-12

Mass Fraction	2 %	2 - Saturant (Water) %	3 %	3 - Sour Feed %	4 %
N2		0 *	0.0015506	3.55877	4.42133E-05
CO2		0 *	10.3443	7.47758	10.3091
H2S		0 *	0.82756	0.579062	0.82445
C1		0 *	0.0435273	45.6802	0.00317312
C2		0 *	0.0178083	18.3263	0.00181896
C3		0 *	0.00808569	13.7979	0.000674136
iC4		0 *	0.000630759	1.93494	3.83576E-05
C4		0 *	0.00208857	4.41996	0.000185305
iC5		0 *	0.000233827	1.19037	1.19263E-05
C5		0 *	0.000256905	1.04979	1.6061E-05
C6		0 *	2.9199E-05	0.222976	1.30123E-06

* User Specified Values
? Extrapolated or Approximate Values

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

Mass Fraction	2 %	2 - Saturant (Water) %	3 %	3 - Sour Feed %	4 %
nC7		0 *	4.29107E-06	0.0754341	1.10761E-07
Octane		0 *	1.8571E-06	0.0432664	4.8177E-08
Water		100 *	44.1907	0.0657923	44.2438
EG		0 *	0.00107955	0	0.00108089
TEG		0 *	0.00646807	0	0.0064761
DEA		0 *	0	0	0
MDEA		0 *	37.4165	0	37.463
PZ		0 *	7.12384	0	7.13268
2,2-Dimethylpropane		0 *	0	0	0
Cyclopentane		0 *	0.000143131	0.126215	3.1936E-05
2-Methylpentane		0 *	3.41836E-05	0.244538	1.53E-06
3-Methylpentane		0 *	1.94013E-05	0.139667	8.68021E-07
Methylcyclopentane		0 *	8.95498E-05	0.17287	1.23612E-05
Benzene		0 *	0.0112749	0.338476	0.0101964
Cyclohexane		0 *	0.000198403	0.21204	4.76212E-05
2-Methylhexane		0 *	1.56379E-06	0.0256454	4.05536E-08
3-Methylhexane		0 *	2.53602E-06	0.0416738	6.57702E-08
Methylcyclohexane		0 *	3.54206E-05	0.102105	4.5648E-06
2,5-Xylenol		0 *	0	0	0
Toluene		0 *	0.00308516	0.126538	0.00277469
2-Methylheptane		0 *	5.09461E-07	0.0114293	1.29205E-08
Ethylcyclohexane		0 *	1.54063E-06	0.00705203	1.80144E-07
Ethylbenzene		0 *	0.000197156	0.0114566	0.000175441
o-Xylene		0 *	0.000242165	0.0104928	0.000223493
Nonane		0 *	1.01012E-07	0.00703984	1.2049E-09
Decane		0 *	1.99579E-09	0.000450147	9.49778E-12

Mass Flow	2 lb/h	2 - Saturant (Water) lb/h	3 lb/h	3 - Sour Feed lb/h	4 lb/h
N2	0	0	3.43494	10997.8	0.097821
CO2	0	0	22914.9	23108.2	22808.6
H2S	0	0	1833.23	1789.5	1824.08
C1	0	0	96.4229	141167	7.02046
C2	0	0	39.4494	56634.6	4.02441
C3	0	0	17.9117	42640.1	1.49151
iC4	0	0	1.39728	5979.63	0.0848656
C4	0	0	4.62667	13659.2	0.409984
iC5	0	0	0.51798	3678.63	0.0263868
C5	0	0	0.569102	3244.19	0.0355346
C6	0	0	0.0646824	689.072	0.00287895
nC7	0	0	0.00950569	233.117	0.000245057
Octane	0	0	0.0041139	133.708	0.000106591
Water	0	0	97892.4	203.32	97888.6
EG	0	0	2.39146	0	2.39146
TEG	0	0	14.3283	0	14.3283
DEA	0	0	0	0	0
MDEA	0	0	82886.1	0	82886.1
PZ	0	0	15780.9	0	15780.9
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	0	0	0.317069	390.048	0.0706577
2-Methylpentane	0	0	0.0757244	755.706	0.0033851
3-Methylpentane	0	0	0.0429783	431.619	0.00192048
Methylcyclopentane	0	0	0.198373	534.226	0.027349
Benzene	0	0	24.9764	1046.01	22.5595
Cyclohexane	0	0	0.439507	655.275	0.105361
2-Methylhexane	0	0	0.00346415	79.2529	8.97241E-05
3-Methylhexane	0	0	0.00561787	128.786	0.000145515
Methylcyclohexane	0	0	0.0784648	315.54	0.0100995
2,5-Xylenol	0	0	0	0	0

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

Mass Flow	2 lb/h	2 - Saturant (Water) lb/h	3 lb/h	3 - Sour Feed lb/h	4 lb/h
Toluene	0	0	6.83433	391.045	6.13895
2-Methylheptane	0	0	0.00112857	35.3203	2.85864E-05
Ethylcyclohexane	0	0	0.00341284	21.7932	0.000398566
Ethylbenzene	0	0	0.436744	35.4048	0.388161
o-Xylene	0	0	0.536451	32.4263	0.494474
Nonane	0	0	0.000223763	21.7555	2.66582E-06
Decane	0	0	4.42114E-06	1.39111	2.10137E-08

Stream Properties

Property	Units	2	2 - Saturant (Water)	3	3 - Sour Feed	4
Temperature	°F			123.413	88.0191	198.467
Pressure	psig	65	1034	68	1034	13 *
Mole Fraction Vapor	%			0.146685	99.8639	6.71694
Mole Fraction Light Liquid	%			99.8533	0.131877	93.2831
Mole Fraction Heavy Liquid	%			0	0.00425891	0
Phase Mole Fraction	%		100	100	100	100
Molecular Weight	lb/lbmol		18.0153	32.1251	23.5283	32.1332
Mass Density	lb/ft^3			58.0342	5.65894	1.76283
Molar Flow	lbmol/h	0	0	6895.63	13134.6	6885.34
Mass Flow	lb/h	0	0	221523	309034	221248
Vapor Volumetric Flow	ft^3/h	0	0	3817.11	54609.9	125507
Liquid Volumetric Flow	gpm	0	0	475.899	6808.5	15647.6
Std Vapor Volumetric Flow	MMSCFD	0	0	62.9998	120	62.9057
Std Liquid Volumetric Flow	sgpm	0	0	460.054	1621.54	458.863
Compressibility				0.00720627	0.740959	0.0682894
Specific Gravity						
API Gravity						
Enthalpy	Btu/h		0	-9.01998E+08	-5.24564E+08	-8.79566E+08
Mass Enthalpy	Btu/lb			-4071.81	-1697.43	-3975.47
Mass Cp	Btu/(lb*°F)			0.639916	0.665601	0.747516
Ideal Gas CpCv Ratio				1.15583	1.23419	1.13846
Dynamic Viscosity	cP					
Kinematic Viscosity	cSt					
Thermal Conductivity	Btu/(h*ft*°F)					
Surface Tension	lbf/ft					
Net Ideal Gas Heating Value	Btu/ft^3		0	450.313	1137.34	449.751
Net Liquid Heating Value	Btu/lb		-1059.76	4712.45	18327.7	4703.77
Gross Ideal Gas Heating Value	Btu/ft^3		50.1527	529.88	1251.25	529.31
Gross Liquid Heating Value	Btu/lb		0	5655.3	20171.1	5646.28

Remarks

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

Connections

	4 - Sweet Gas	5	6	7	8
From Block	Absorber	Booster Pump	MDEA Divider	XFS8	Reflux Pump
To Block	MDEA Divider	Lean/Rich Exchanger	--	DVDR-1	Amine Stripper

Stream Composition

Mole Fraction	4 - Sweet Gas %	5 %	6 %	7 %	8 %
N2	3.11731	0		2.98841	8.1517E-09
CO2	0.0534835	0.037334		4.0209	0.0922951
H2S	0.000741442	0.0219532		0.39507	0.0223611
C1	69.8461	0		66.9826	1.9775E-06
C2	14.9498	0		14.3371	6.7727E-07
C3	7.67743	0		7.36074	1.31641E-07
iC4	0.816971	0		0.783126	3.57603E-09
C4	1.866	0		1.78888	2.60289E-08
iC5	0.404923	0		0.388112	6.83745E-10
C5	0.35709	0		0.342277	1.13539E-09
C6	0.0635062	0		0.0608668	4.38129E-11
nC7	0.018478	0		0.0177091	1.85354E-12
Octane	0.00929704	0		0.00891008	6.04651E-13
Water	0.362786	85.9243		0.0859091	99.8319
EG	4.24146E-08	0.000614445		0	1.14957E-05
TEG	3.11577E-09	0.00152156		0	4.95346E-07
DEA	0	0		0	0
MDEA	0.000259202	11.0925		0	0.0321292
PZ	0.000705602	2.92171		0	0.0211684
2,2-Dimethylpropane	0	0		0	0
Cyclopentane	0.0441387	0		0.0423346	1.21155E-08
2-Methylpentane	0.069647	0		0.0667527	5.15879E-11
3-Methylpentane	0.0397786	0		0.0381256	2.92623E-11
Methylcyclopentane	0.0504007	0		0.0483193	1.93838E-09
Benzene	0.103824	0		0.101933	0.000101844
Cyclohexane	0.0618024	0		0.059268	1.31351E-08
2-Methylhexane	0.00628197	0		0.00602058	6.79645E-13
3-Methylhexane	0.0102082	0		0.00978347	1.10226E-12
Methylcyclohexane	0.0255195	0		0.0244627	5.10394E-10
2,5-Xylenol	0	0		0	0
Toluene	0.0331211	0		0.0323061	1.77389E-05
2-Methylheptane	0.00245591	0		0.00235369	1.62392E-13
Ethylcyclohexane	0.00154236	0		0.00147835	1.39194E-11
Ethylbenzene	0.00261617	0		0.00253852	7.93184E-07
o-Xylene	0.00238587	0		0.00232496	1.51789E-06
Nonane	0.0013473	0		0.0012912	5.75332E-15
Decane	7.76579E-05	0		7.44236E-05	0

Mass Fraction	4 - Sweet Gas %	5 %	6 %	7 %	8 %
N2	3.85946	0		3.55741	1.26235E-08
CO2	0.104027	0.052593		7.51966	0.224538
H2S	0.00111678	0.0239489		0.572154	0.0421277
C1	49.5214	0		45.6627	1.75369E-06
C2	19.8671	0		18.3193	1.12576E-06
C3	14.962	0		13.7926	3.20887E-07
iC4	2.09859	0		1.9342	1.14897E-08
C4	4.79328	0		4.41827	8.36301E-08
iC5	1.29116	0		1.18991	2.72702E-09
C5	1.13864	0		1.04938	4.52835E-09
C6	0.241869	0		0.222891	2.08713E-10
nC7	0.0818298	0		0.0754052	1.0267E-11
Octane	0.0469353	0		0.0432498	3.81807E-12

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

Mass Fraction	4 - Sweet Gas %	5 %	6 %	7 %	8 %
Water	0.28885	49.549		0.0657671	99.4203
EG	1.16349E-07	0.00122075		0	3.94427E-05
TEG	2.06794E-08	0.00731405		0	4.11211E-06
DEA	0	0		0	0
MDEA	0.00136508	42.3103		0	0.211643
PZ	0.0026861	8.05559		0	0.100794
2,2-Dimethylpropane	0	0		0	0
Cyclopentane	0.136811	0		0.126167	4.69709E-08
2-Methylpentane	0.265256	0		0.244445	2.45751E-10
3-Methylpentane	0.1515	0		0.139614	1.39398E-10
Methylcyclopentane	0.187465	0		0.172803	9.01793E-09
Benzene	0.358421	0		0.338346	0.000439761
Cyclohexane	0.229873	0		0.211959	6.11086E-08
2-Methylhexane	0.0278197	0		0.0256356	3.76464E-12
3-Methylhexane	0.0452071	0		0.0416579	6.10553E-12
Methylcyclohexane	0.110739	0		0.102066	2.77026E-09
2,5-Xylenol	0	0		0	0
Toluene	0.134873	0		0.126489	9.03509E-05
2-Methylheptane	0.0123984	0		0.0114249	1.02542E-12
Ethylcyclohexane	0.00764906	0		0.00704933	8.63428E-11
Ethylbenzene	0.0122752	0		0.0114522	4.655E-06
o-Xylene	0.0111946	0		0.0104888	8.90813E-06
Nonane	0.00763695	0		0.00703715	4.07904E-14
Decane	0.000488331	0		0.000449975	0

Mass Flow	4 - Sweet Gas lb/h	5 lb/h	6 lb/h	7 lb/h	8 lb/h
N2	10994.4	0	0	10657.7	1.20758E-06
CO2	296.34	103.03	0	22528.3	21.4797
H2S	3.18135	46.916	0	1714.13	4.03
C1	141071	0	0	136802	0.000167761
C2	56595.2	0	0	54883.3	0.000107692
C3	42622.1	0	0	41321.5	3.06965E-05
iC4	5978.23	0	0	5794.72	1.09912E-06
C4	13654.5	0	0	13236.8	8.00019E-06
iC5	3678.11	0	0	3564.88	2.60871E-07
C5	3243.63	0	0	3143.87	4.33189E-07
C6	689.007	0	0	667.764	1.99658E-08
nC7	233.107	0	0	225.908	9.82157E-10
Octane	133.704	0	0	129.573	3.65243E-10
Water	822.841	97066.7	0	197.033	9510.71
EG	0.000331441	2.39146	0	0	0.00377316
TEG	5.89089E-05	14.3283	0	0	0.000393371
DEA	0	0	0	0	0
MDEA	3.88867	82886.1	0	0	20.2461
PZ	7.65186	15780.9	0	0	9.64211
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	389.731	0	0	377.987	4.49331E-06
2-Methylpentane	755.63	0	0	732.337	2.3509E-08
3-Methylpentane	431.576	0	0	418.272	1.3335E-08
Methylcyclopentane	534.027	0	0	517.706	8.6267E-07
Benzene	1021.03	0	0	1013.66	0.0420682
Cyclohexane	654.836	0	0	635.012	5.84575E-06
2-Methylhexane	79.2494	0	0	76.8021	3.60131E-10
3-Methylhexane	128.781	0	0	124.804	5.84065E-10
Methylcyclohexane	315.462	0	0	305.783	2.65008E-07
2,5-Xylenol	0	0	0	0	0
Toluene	384.21	0	0	378.952	0.00864311
2-Methylheptane	35.3192	0	0	34.2281	9.80937E-11
Ethylcyclohexane	21.7897	0	0	21.1193	8.25969E-09
Ethylbenzene	34.9681	0	0	34.31	0.000445305

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Process Streams Report
All Streams
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Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

Mass Flow	4 - Sweet Gas lb/h	5 lb/h	6 lb/h	7 lb/h	8 lb/h
o-Xylene	31.8898	0	0	31.4235	0.000852166
Nonane	21.7553	0	0	21.0827	3.90207E-12
Decane	1.3911	0	0	1.34809	0

Stream Properties

Property	Units	4 - Sweet Gas	5	6	7	8
Temperature	°F	147.606	251.118	147.606	89.6689	119.019
Pressure	psig	991.54	65 *	991.54	1034	13 *
Mole Fraction Vapor	%	100	0		100	0
Mole Fraction Light Liquid	%	0	100		0	100
Mole Fraction Heavy Liquid	%	0	0		0	0
Phase Mole Fraction	%	100	100		100	100
Molecular Weight	lb/lbmol	22.6266	31.2408		23.5327	18.0899
Mass Density	lb/ft^3	4.16722	60.4426		5.61999	61.733
Molar Flow	lbmol/h	12590	6270.65	0	12730.9	528.813
Mass Flow	lb/h	284868	195900	0	299592	9566.16
Vapor Volumetric Flow	ft^3/h	68359.3	3241.1	0	53308.3	154.96
Liquid Volumetric Flow	gpm	8522.72	404.085	0	6646.23	19.3197
Std Vapor Volumetric Flow	MMSCFD	115.024	57.2899	0	116.312	4.83134
Std Liquid Volumetric Flow	sgpm	1561.48	397.082	0	1571.67	19.1409
Compressibility		0.837317	0.00531648		0.743994	0.00124853
Specific Gravity		0.781239	0.969117		0.812523	0.989806
API Gravity			4.08356			9.88419
Enthalpy	Btu/h	-4.27528E+08	-7.71495E+08		-5.08468E+08	-6.45587E+07
Mass Enthalpy	Btu/lb	-1500.79	-3938.2		-1697.2	-6748.65
Mass Cp	Btu/(lb*°F)	0.621409	0.926717		0.662964	0.994043
Ideal Gas CpCv Ratio		1.21688	1.12233		1.23376	1.32591
Dynamic Viscosity	cP	0.0138623	0.765854		0.0140963	0.578827
Kinematic Viscosity	cSt	0.207667	0.79101		0.156585	0.585344
Thermal Conductivity	Btu/(h*ft*°F)	0.0234813	0.190287		0.0219882	0.364288
Surface Tension	lbf/ft		0.00290844			0.00465687
Net Ideal Gas Heating Value	Btu/ft^3	1183.31	488.641		1137.09	1.95328
Net Liquid Heating Value	Btu/lb	19833.1	5264.05		18320.3	-1013.74
Gross Ideal Gas Heating Value	Btu/ft^3	1301.99	575.195		1250.97	52.1908
Gross Liquid Heating Value	Btu/lb	21830.4	6318.73		20162.9	43.4319

Remarks

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Process Streams Report
All Streams
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Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

Connections

	9	12	13	14	15
From Block	MIX-101	DVDR-1	Flash Tank	Lean/Rich Exchanger	Amine Stripper
To Block	MIX-100	MIX-101	Lean/Rich Exchanger	VLVE-101	Reflux Cooler

Stream Composition

Mole Fraction	9 %	12 %	13 %	14 %	15 %
N2	2.98899	3.12647	5.07156E-05	5.07156E-05	0.000305378
CO2	3.99764	0	7.5271	7.5271	45.1609
H2S	0.399764	0	0.777335	0.777335	4.57053
C1	66.9956	70.0772	0.00635579	0.00635579	0.0382711
C2	14.3399	14.9995	0.00194383	0.00194383	0.0117047
C3	7.36217	7.70081	0.000491255	0.000491255	0.00295806
iC4	0.783278	0.819306	2.12063E-05	2.12063E-05	0.000127691
C4	1.78923	1.87153	0.000102447	0.000102447	0.000616877
iC5	0.388187	0.406042	5.31169E-06	5.31169E-06	3.19836E-05
C5	0.342343	0.35809	7.15315E-06	7.15315E-06	4.30718E-05
C6	0.0608786	0.0636789	4.85206E-07	4.85206E-07	2.92159E-06
nC7	0.0177125	0.0185273	3.55195E-08	3.55195E-08	2.13875E-07
Octane	0.00891181	0.00932172	1.35525E-08	1.35525E-08	8.16042E-08
Water	0.0859258	0.0898781	78.9162	78.9162	50.1577
EG	0	0	0.000559591	0.000559591	5.31841E-06
TEG	0	0	0.00138572	0.00138572	2.29075E-07
DEA	0	0	0	0	0
MDEA	0	0	10.1023	10.1023	0.0148583
PZ	0	0	2.66088	2.66088	0.00978941
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	0.0423428	0.0442905	1.46323E-05	1.46323E-05	8.81113E-05
2-Methylpentane	0.0667657	0.0698367	5.7051E-07	5.7051E-07	3.43524E-06
3-Methylpentane	0.038133	0.039887	3.23669E-07	3.23669E-07	1.94893E-06
Methylcyclopentane	0.0483287	0.0505517	4.71969E-06	4.71969E-06	2.84196E-05
Benzene	0.101953	0.106643	0.00419456	0.00419456	0.0253039
Cyclohexane	0.0592795	0.0620061	1.81824E-05	1.81824E-05	0.000109488
2-Methylhexane	0.00602175	0.00629873	1.30049E-08	1.30049E-08	7.8307E-08
3-Methylhexane	0.00978537	0.0102355	2.10915E-08	2.10915E-08	1.26999E-07
Methylcyclohexane	0.0244674	0.0255928	1.49392E-06	1.49392E-06	8.99557E-06
2,5-Xylenol	0	0	0	0	0
Toluene	0.0323124	0.0337987	0.000967673	0.000967673	0.00583486
2-Methylheptane	0.00235415	0.00246243	3.63463E-09	3.63463E-09	2.18853E-08
Ethylcyclohexane	0.00147864	0.00154665	5.15862E-08	5.15862E-08	3.10623E-07
Ethylbenzene	0.00253901	0.0026558	5.31013E-05	5.31013E-05	0.000320106
o-Xylene	0.00232541	0.00243237	6.76452E-05	6.76452E-05	0.000408015
Nonane	0.00129145	0.00135085	3.01878E-10	3.01878E-10	1.8177E-09
Decane	7.4438E-05	7.78619E-05	2.145E-12	2.145E-12	0

Mass Fraction	9 %	12 %	13 %	14 %	15 %
N2	3.55877	3.87061	4.42133E-05	4.42133E-05	0.000280182
CO2	7.47758	0	10.3091	10.3091	65.0947
H2S	0.579062	0	0.82445	0.82445	5.10168
C1	45.6802	49.683	0.00317312	0.00317312	0.0201084
C2	18.3263	19.9322	0.00181896	0.00181896	0.011527
C3	13.7979	15.0069	0.000674136	0.000674136	0.00427207
iC4	1.93494	2.10449	3.83576E-05	3.83576E-05	0.000243074
C4	4.41996	4.80726	0.000185305	0.000185305	0.00117429
iC5	1.19037	1.29467	1.19263E-05	1.19263E-05	7.55775E-05
C5	1.04979	1.14177	1.6061E-05	1.6061E-05	0.000101779
C6	0.222976	0.242515	1.30123E-06	1.30123E-06	8.24592E-06
nC7	0.0754341	0.0820441	1.10761E-07	1.10761E-07	7.01894E-07

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Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

Mass Fraction	9 %	12 %	13 %	14 %	15 %
Octane	0.0432664	0.0470577	4.8177E-08	4.8177E-08	3.05297E-07
Water	0.0657923	0.0715574	44.2438	44.2438	29.5947
EG	0	0	0.00108089	0.00108089	1.08115E-05
TEG	0	0	0.0064761	0.0064761	1.12669E-06
DEA	0	0	0	0	0
MDEA	0	0	37.463	37.463	0.0579887
PZ	0	0	7.13268	7.13268	0.0276169
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	0.126215	0.137275	3.1936E-05	3.1936E-05	0.00020239
2-Methylpentane	0.244538	0.265966	1.53E-06	1.53E-06	9.69563E-06
3-Methylpentane	0.139667	0.151906	8.68021E-07	8.68021E-07	5.50066E-06
Methylcyclopentane	0.17287	0.188017	1.23612E-05	1.23612E-05	7.83353E-05
Benzene	0.338476	0.368135	0.0101964	0.0101964	0.0647351
Cyclohexane	0.21204	0.23062	4.76212E-05	4.76212E-05	0.000301791
2-Methylhexane	0.0256454	0.0278926	4.05536E-08	4.05536E-08	2.56988E-07
3-Methylhexane	0.0416738	0.0453256	6.57702E-08	6.57702E-08	4.16785E-07
Methylcyclohexane	0.102105	0.111052	4.5648E-06	4.5648E-06	2.89277E-05
2,5-Xylenol	0	0	0	0	0
Toluene	0.126538	0.137626	0.00277469	0.00277469	0.0176079
2-Methylheptane	0.0114293	0.0124308	1.29205E-08	1.29205E-08	8.18772E-08
Ethylcyclohexane	0.00705203	0.00766997	1.80144E-07	1.80144E-07	1.14159E-06
Ethylbenzene	0.0114566	0.0124605	0.000175441	0.000175441	0.00111304
o-Xylene	0.0104928	0.0114122	0.000223493	0.000223493	0.00141871
Nonane	0.00703984	0.00765671	1.2049E-09	1.2049E-09	7.63543E-09
Decane	0.000450147	0.000489591	9.49778E-12	9.49778E-12	0

Mass Flow	9 lb/h	12 lb/h	13 lb/h	14 lb/h	15 lb/h
N2	10657.7	10657.7	0.097821	0.097821	0.0978222
CO2	22393.7	0	22808.6	22808.6	22727.1
H2S	1734.16	0	1824.08	1824.08	1781.19
C1	136802	136802	7.02046	7.02046	7.02063
C2	54883.3	54883.3	4.02441	4.02441	4.02452
C3	41321.5	41321.5	1.49151	1.49151	1.49154
iC4	5794.72	5794.72	0.0848656	0.0848656	0.0848667
C4	13236.8	13236.8	0.409984	0.409984	0.409992
iC5	3564.88	3564.88	0.0263868	0.0263868	0.0263871
C5	3143.87	3143.87	0.0355346	0.0355346	0.035535
C6	667.764	667.764	0.00287895	0.00287895	0.00287897
nC7	225.908	225.908	0.000245057	0.000245057	0.000245058
Octane	129.573	129.573	0.000106591	0.000106591	0.000106591
Water	197.033	197.033	97888.6	97888.6	10332.7
EG	0	0	2.39146	2.39146	0.0037747
TEG	0	0	14.3283	14.3283	0.000393372
DEA	0	0	0	0	0
MDEA	0	0	82886.1	82886.1	20.2461
PZ	0	0	15780.9	15780.9	9.64213
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	377.987	377.987	0.0706577	0.0706577	0.0706622
2-Methylpentane	732.337	732.337	0.0033851	0.0033851	0.00338512
3-Methylpentane	418.272	418.272	0.00192048	0.00192048	0.00192049
Methylcyclopentane	517.706	517.706	0.027349	0.027349	0.0273499
Benzene	1013.66	1013.66	22.5595	22.5595	22.6015
Cyclohexane	635.012	635.012	0.105361	0.105361	0.105367
2-Methylhexane	76.8021	76.8021	8.97241E-05	8.97241E-05	8.97245E-05
3-Methylhexane	124.804	124.804	0.000145515	0.000145515	0.000145516
Methylcyclohexane	305.783	305.783	0.0100995	0.0100995	0.0100998
2,5-Xylenol	0	0	0	0	0
Toluene	378.952	378.952	6.13895	6.13895	6.1476
2-Methylheptane	34.2281	34.2281	2.85864E-05	2.85864E-05	2.85865E-05
Ethylcyclohexane	21.1193	21.1193	0.000398566	0.000398566	0.000398574

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

Mass Flow	9 lb/h	12 lb/h	13 lb/h	14 lb/h	15 lb/h
Ethylbenzene	34.31	34.31	0.388161	0.388161	0.388606
o-Xylene	31.4235	31.4235	0.494474	0.494474	0.495326
Nonane	21.0827	21.0827	2.66582E-06	2.66582E-06	2.66583E-06
Decane	1.34809	1.34809	2.10137E-08	2.10137E-08	0

Stream Properties

Property	Units	9	12	13	14	15
Temperature	°F	88.0191	91.6689	123.403	220 *	211.662
Pressure	psig	1034	1034	65	60	12
Mole Fraction Vapor	%	99.8639	99.9479	0	4.24694	100
Mole Fraction Light Liquid	%	0.131877	0.051031	100	95.7531	0
Mole Fraction Heavy Liquid	%	0.00425891	0.00103123	0	0	0
Phase Mole Fraction	%	100	100	100	100	100
Molecular Weight	lb/lbmol	23.5283	22.6277	32.1332	32.1332	30.5326
Mass Density	lb/ft^3	5.65894	5.33615	72.4683	6.99433	0.108807
Molar Flow	lbmol/h	12728.4	12168.7	6885.34	6885.34	1143.49
Mass Flow	lb/h	299478	275350	221248	221248	34913.9
Vapor Volumetric Flow	ft^3/h	52921.1	51600.8	3053.03	31632.5	320880
Liquid Volumetric Flow	gpm	6597.96	6433.35	380.638	3943.79	40005.9
Std Vapor Volumetric Flow	MMSCFD	116.289	111.176	62.9057	62.9057	10.4472
Std Liquid Volumetric Flow	sgpm	1571.39	1512.27	458.863	458.863	80.922
Compressibility		0.740959	0.750701	0.00555991	0.0462698	0.991668
Specific Gravity				1.16193		1.05421
API Gravity				-10.1525		
Enthalpy	Btu/h	-5.08343E+08	-4.20428E+08	-9.01326E+08	-8.79566E+08	-1.46202E+08
Mass Enthalpy	Btu/lb	-1697.43	-1526.89	-4073.82	-3975.47	-4187.5
Mass Cp	Btu/(lb*°F)	0.665601	0.68425	0.640248	0.769112	0.292226
Ideal Gas CpCv Ratio		1.23419	1.23121	1.15574	1.13417	1.28948
Dynamic Viscosity	cP			5.84319		0.0167643
Kinematic Viscosity	cSt			5.03363		9.61858
Thermal Conductivity	Btu/(h*ft*°F)			0.172483 ?		0.0138184
Surface Tension	lbf/ft			0.00526314 ?		
Net Ideal Gas Heating Value	Btu/ft^3	1137.34	1187.21	449.751	449.751	29.4055
Net Liquid Heating Value	Btu/lb	18327.7	19899.9	4703.77	4703.77	-6.48505
Gross Ideal Gas Heating Value	Btu/ft^3	1251.25	1306.14	529.31	529.31	57.0424
Gross Liquid Heating Value	Btu/lb	20171.1	21901.3	5646.28	5646.28	338.097

Remarks

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

Connections

	16	17	18	19	20 - Lean Amine
From Block	Reflux Separator	DVDR-1	Amine Stripper	Reboiler	Reboiler
To Block	Reflux Pump	--	Reboiler	Amine Stripper	Booster Pump

Stream Composition

Mole Fraction	16 %	17 %	18 %	19 %	20 - Lean Amine %
N2	8.1517E-09	0	0	0	0
CO2	0.0922951	91.0536	0.0611953	0.159611	0.037334
H2S	0.0223611	8.94638	0.0242661	0.0338059	0.0219532
C1	1.9775E-06	0	0	0	0
C2	6.7727E-07	0	0	0	0
C3	1.31641E-07	0	0	0	0
iC4	3.57603E-09	0	0	0	0
C4	2.60289E-08	0	0	0	0
iC5	6.83745E-10	0	0	0	0
C5	1.13539E-09	0	0	0	0
C6	4.38129E-11	0	0	0	0
nC7	1.85354E-12	0	0	0	0
Octane	6.04651E-13	0	0	0	0
Water	99.8319	0	88.5892	99.5804	85.9243
EG	1.14957E-05	0	0.00049803	1.7877E-05	0.000614445
TEG	4.95346E-07	0	0.00122487	1.16919E-06	0.00152156
DEA	0	0	0	0	0
MDEA	0.0321292	0	8.93954	0.0595487	11.0925
PZ	0.0211684	0	2.38408	0.166618	2.92171
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	1.21155E-08	0	0	0	0
2-Methylpentane	5.15879E-11	0	0	0	0
3-Methylpentane	2.92623E-11	0	0	0	0
Methylcyclopentane	1.93838E-09	0	0	0	0
Benzene	0.000101844	0	0	0	0
Cyclohexane	1.31351E-08	0	0	0	0
2-Methylhexane	6.79645E-13	0	0	0	0
3-Methylhexane	1.10226E-12	0	0	0	0
Methylcyclohexane	5.10394E-10	0	0	0	0
2,5-Xylenol	0	0	0	0	0
Toluene	1.77389E-05	0	0	0	0
2-Methylheptane	1.62392E-13	0	0	0	0
Ethylcyclohexane	1.39194E-11	0	0	0	0
Ethylbenzene	7.93184E-07	0	0	0	0
o-Xylene	1.51789E-06	0	0	0	0
Nonane	5.75332E-15	0	0	0	0
Decane	0	0	0	0	0

Mass Fraction	16 %	17 %	18 %	19 %	20 - Lean Amine %
N2	1.26235E-08	0	0	0	0
CO2	0.224538	92.9292	0.0938289	0.385196	0.052593
H2S	0.0421277	7.07077	0.0288126	0.0631793	0.0239489
C1	1.75369E-06	0	0	0	0
C2	1.12576E-06	0	0	0	0
C3	3.20887E-07	0	0	0	0
iC4	1.14897E-08	0	0	0	0
C4	8.36301E-08	0	0	0	0
iC5	2.72702E-09	0	0	0	0
C5	4.52835E-09	0	0	0	0

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

Mass Fraction	16 %	17 %	18 %	19 %	20 - Lean Amine %
C6	2.08713E-10	0	0	0	0
nC7	1.0267E-11	0	0	0	0
Octane	3.81807E-12	0	0	0	0
Water	99.4203	0	55.6024	98.3754	49.549
EG	3.94427E-05	0	0.00107695	6.08463E-05	0.00122075
TEG	4.11211E-06	0	0.00640845	9.62831E-06	0.00731405
DEA	0	0	0	0	0
MDEA	0.211643	0	37.113	0.389119	42.3103
PZ	0.100794	0	7.15443	0.787001	8.05559
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	4.69709E-08	0	0	0	0
2-Methylpentane	2.45751E-10	0	0	0	0
3-Methylpentane	1.39398E-10	0	0	0	0
Methylcyclopentane	9.01793E-09	0	0	0	0
Benzene	0.000439761	0	0	0	0
Cyclohexane	6.11086E-08	0	0	0	0
2-Methylhexane	3.76464E-12	0	0	0	0
3-Methylhexane	6.10553E-12	0	0	0	0
Methylcyclohexane	2.77026E-09	0	0	0	0
2,5-Xylenol	0	0	0	0	0
Toluene	9.03509E-05	0	0	0	0
2-Methylheptane	1.02542E-12	0	0	0	0
Ethylcyclohexane	8.63428E-11	0	0	0	0
Ethylbenzene	4.655E-06	0	0	0	0
o-Xylene	8.90813E-06	0	0	0	0
Nonane	4.07904E-14	0	0	0	0
Decane	0	0	0	0	0

Mass Flow	16 lb/h	17 lb/h	18 lb/h	19 lb/h	20 - Lean Amine lb/h
N2	1.20758E-06	0	0	0	0
CO2	21.4797	22528.3	209.825	106.795	103.03
H2S	4.03	1714.13	64.4323	17.5164	46.916
C1	0.000167761	0	0	0	0
C2	0.000107692	0	0	0	0
C3	3.06965E-05	0	0	0	0
iC4	1.09912E-06	0	0	0	0
C4	8.00019E-06	0	0	0	0
iC5	2.60871E-07	0	0	0	0
C5	4.33189E-07	0	0	0	0
C6	1.99658E-08	0	0	0	0
nC7	9.82157E-10	0	0	0	0
Octane	3.65243E-10	0	0	0	0
Water	9510.71	0	124341	27274.5	97066.7
EG	0.00377316	0	2.40833	0.0168696	2.39146
TEG	0.000393371	0	14.3309	0.00266944	14.3283
DEA	0	0	0	0	0
MDEA	20.2461	0	82994	107.883	82886.1
PZ	9.64211	0	15999.1	218.195	15780.9
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	4.49331E-06	0	0	0	0
2-Methylpentane	2.3509E-08	0	0	0	0
3-Methylpentane	1.3335E-08	0	0	0	0
Methylcyclopentane	8.6267E-07	0	0	0	0
Benzene	0.0420682	0	0	0	0
Cyclohexane	5.84575E-06	0	0	0	0
2-Methylhexane	3.60131E-10	0	0	0	0
3-Methylhexane	5.84065E-10	0	0	0	0
Methylcyclohexane	2.65008E-07	0	0	0	0

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

Mass Flow	16 lb/h	17 lb/h	18 lb/h	19 lb/h	20 - Lean Amine lb/h
2,5-Xylenol	0	0	0	0	0
Toluene	0.00864311	0	0	0	0
2-Methylheptane	9.80937E-11	0	0	0	0
Ethylcyclohexane	8.25969E-09	0	0	0	0
Ethylbenzene	0.000445305	0	0	0	0
o-Xylene	0.000852166	0	0	0	0
Nonane	3.90207E-12	0	0	0	0
Decane	0	0	0	0	0

Stream Properties

Property	Units	16	17	18	19	20 - Lean Amine
Temperature	°F	119.015	89.6689	249.467	251.015	251.015
Pressure	psig	9	1034	13	13	13
Mole Fraction Vapor	%	0	100	0	100	0
Mole Fraction Light Liquid	%	100	0	100	0	100
Mole Fraction Heavy Liquid	%	0	0	0	0	0
Phase Mole Fraction	%	100	100	100	100	100
Molecular Weight	lb/lbmol	18.0899	43.1212	28.703	18.2359	31.2408
Mass Density	lb/ft^3	61.7328	19.7527	60.4601	0.0641334	60.439
Molar Flow	lbmol/h	528.813	562.193	7791	1520.34	6270.65
Mass Flow	lb/h	9566.16	24242.5	223625	27724.9	195900
Vapor Volumetric Flow	ft^3/h	154.961	1227.3	3698.73	432300	3241.29
Liquid Volumetric Flow	gpm	19.3198	153.014	461.14	53897.1	404.109
Std Vapor Volumetric Flow	MMSCFD	4.83134	5.1363	71.18	13.8901	57.2899
Std Liquid Volumetric Flow	sgpm	19.1409	59.4014	452.723	55.6409	397.082
Compressibility		0.0010598	0.387881	0.00165065	0.98649	0.00179331
Specific Gravity		0.989803	1.48886	0.969397	0.62964	0.969059
API Gravity		9.88467		4.51033		4.09275
Enthalpy	Btu/h	-6.45589E+07	-8.83662E+07	-9.53763E+08	-1.5584E+08	-7.71532E+08
Mass Enthalpy	Btu/lb	-6748.67	-3645.1	-4265	-5620.94	-3938.39
Mass Cp	Btu/(lb*°F)	0.994056	4.60204	0.935355	0.461948	0.926908
Ideal Gas CpCv Ratio		1.32591	1.28817	1.13916	1.31342	1.12235
Dynamic Viscosity	cP	0.578815	0.0255596	0.646761	0.0133903	0.765467
Kinematic Viscosity	cSt	0.585333	0.0807805	0.667812	13.0343	0.790658
Thermal Conductivity	Btu/(h*ft*°F)	0.364286	0.0207191	0.209165	0.0167466	0.190288
Surface Tension	lbf/ft	0.0046569		0.00303123		0.00290891
Net Ideal Gas Heating Value	Btu/ft^3	1.95328	52.3323	394.771	7.60738	488.641
Net Liquid Heating Value	Btu/lb	-1013.74	378.161	4501.39	-887.454	5264.05
Gross Ideal Gas Heating Value	Btu/ft^3	52.1908	56.8192	474.304	58.1779	575.195
Gross Liquid Heating Value	Btu/lb	43.4319	417.785	5556.19	168.204	6318.73

Remarks

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

Connections

	21	23 - Makeup	24 - Blowdown	25	26
From Block	Lean/Rich Exchanger	--	MDEA Makeup	MDEA Makeup	Solution Pump
To Block	Recycle	MDEA Makeup	--	Solution Pump	Lean Amine Cooler

Stream Composition

Mole Fraction	21 %	23 - Makeup %	24 - Blowdown %	25 %	26 %
N2	0	0	0	0	0
CO2	0.037334	0	0.0373334	0.0368611	0.0368611
H2S	0.0219532	0	0.0219531	0.0216753	0.0216753
C1	0	0	0	0	0
C2	0	0	0	0	0
C3	0	0	0	0	0
iC4	0	0	0	0	0
C4	0	0	0	0	0
iC5	0	0	0	0	0
C5	0	0	0	0	0
C6	0	0	0	0	0
nC7	0	0	0	0	0
Octane	0	0	0	0	0
Water	85.9243	99.8488	85.9243	86.1005	86.1005
EG	0.000614445	0	0.000614531	0.000606756	0.000606756
TEG	0.00152156	0	0.00152156	0.00150232	0.00150232
DEA	0	0	0	0	0
MDEA	11.0925	0.0406301	11.0925	10.9527	10.9527
PZ	2.92171	0.110567	2.92171	2.88614	2.88614
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	0	0	0	0	0
2-Methylpentane	0	0	0	0	0
3-Methylpentane	0	0	0	0	0
Methylcyclopentane	0	0	0	0	0
Benzene	0	0	0	0	0
Cyclohexane	0	0	0	0	0
2-Methylhexane	0	0	0	0	0
3-Methylhexane	0	0	0	0	0
Methylcyclohexane	0	0	0	0	0
2,5-Xylenol	0	0	0	0	0
Toluene	0	0	0	0	0
2-Methylheptane	0	0	0	0	0
Ethylcyclohexane	0	0	0	0	0
Ethylbenzene	0	0	0	0	0
o-Xylene	0	0	0	0	0
Nonane	0	0	0	0	0
Decane	0	0	0	0	0

Mass Fraction	21 %	23 - Makeup %	24 - Blowdown %	25 %	26 %
N2	0	0	0	0	0
CO2	0.052593	0	0.0525923	0.0522041	0.0522041
H2S	0.0239489	0	0.0239488	0.023772	0.023772
C1	0	0	0	0	0
C2	0	0	0	0	0
C3	0	0	0	0	0
iC4	0	0	0	0	0
C4	0	0	0	0	0
iC5	0	0	0	0	0

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

Mass Fraction	21 %	23 - Makeup %	24 - Blowdown %	25 %	26 %
C5	0	0	0	0	0
C6	0	0	0	0	0
nC7	0	0	0	0	0
Octane	0	0	0	0	0
Water	49.549	99.2077	49.549	49.9156	49.9156
EG	0.00122075	0	0.00122092	0.00121191	0.00121191
TEG	0.00731405	0	0.00731408	0.00726009	0.00726009
DEA	0	0	0	0	0
MDEA	42.3103	0.267022	42.3104	42	42
PZ	8.05559	0.525256	8.05559	8	8
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	0	0	0	0	0
2-Methylpentane	0	0	0	0	0
3-Methylpentane	0	0	0	0	0
Methylcyclopentane	0	0	0	0	0
Benzene	0	0	0	0	0
Cyclohexane	0	0	0	0	0
2-Methylhexane	0	0	0	0	0
3-Methylhexane	0	0	0	0	0
Methylcyclohexane	0	0	0	0	0
2,5-Xylenol	0	0	0	0	0
Toluene	0	0	0	0	0
2-Methylheptane	0	0	0	0	0
Ethylcyclohexane	0	0	0	0	0
Ethylbenzene	0	0	0	0	0
o-Xylene	0	0	0	0	0
Nonane	0	0	0	0	0
Decane	0	0	0	0	0

Mass Flow	21 lb/h	23 - Makeup lb/h	24 - Blowdown lb/h	25 lb/h	26 lb/h
N2	0	0	0	0	0
CO2	103.03	0	0	103.028	103.028
H2S	46.916	0	0	46.9158	46.9158
C1	0	0	0	0	0
C2	0	0	0	0	0
C3	0	0	0	0	0
iC4	0	0	0	0	0
C4	0	0	0	0	0
iC5	0	0	0	0	0
C5	0	0	0	0	0
C6	0	0	0	0	0
nC7	0	0	0	0	0
Octane	0	0	0	0	0
Water	97066.7	1445.29	0	98511.9	98511.9
EG	2.39146	0	0	2.39179	2.39179
TEG	14.3283	0	0	14.3283	14.3283
DEA	0	0	0	0	0
MDEA	82886.1	3.89007	0	82890	82890
PZ	15780.9	7.65211	0	15788.6	15788.6
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	0	0	0	0	0
2-Methylpentane	0	0	0	0	0
3-Methylpentane	0	0	0	0	0
Methylcyclopentane	0	0	0	0	0
Benzene	0	0	0	0	0
Cyclohexane	0	0	0	0	0
2-Methylhexane	0	0	0	0	0
3-Methylhexane	0	0	0	0	0

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

Mass Flow	21 lb/h	23 - Makeup lb/h	24 - Blowdown lb/h	25 lb/h	26 lb/h
Methylcyclohexane	0	0	0	0	0
2,5-Xylenol	0	0	0	0	0
Toluene	0	0	0	0	0
2-Methylheptane	0	0	0	0	0
Ethylcyclohexane	0	0	0	0	0
Ethylbenzene	0	0	0	0	0
o-Xylene	0	0	0	0	0
Nonane	0	0	0	0	0
Decane	0	0	0	0	0

Stream Properties

Property	Units	21	23 - Makeup	24 - Blowdown	25	26
Temperature	°F	124.414	80 *		124.04	125.283
Pressure	psig	60	62 *	60	60	996.54 *
Mole Fraction Vapor	%	0	0		0	0
Mole Fraction Light Liquid	%	100	100		100	100
Mole Fraction Heavy Liquid	%	0	0		0	0
Phase Mole Fraction	%	100	100	100	100	100
Molecular Weight	lb/lbmol	31.2408	18.1317	31.2408	31.075	31.075
Mass Density	lb/ft^3	63.9419	62.226		63.9399	64.0049
Molar Flow	lbmol/h	6270.65	80.3473	0	6351	6351
Mass Flow	lb/h	195900	1456.83	0	197357	197357
Vapor Volumetric Flow	ft^3/h	3063.73	23.412	0	3086.6	3083.47
Liquid Volumetric Flow	gpm	381.971	2.9189	0	384.823	384.433
Std Vapor Volumetric Flow	MMSCFD	57.2899	0.734068	0	58.0239	58.0239
Std Liquid Volumetric Flow	sgpm	397.082	2.91793	0	400 *	400
Compressibility		0.00572597	0.00379657		0.00569939	0.078115
Specific Gravity		1.02522	0.997711		1.02519	1.02623
API Gravity		4.08444	9.89729		4.11247	3.94848
Enthalpy	Btu/h	-7.93254E+08	-9.85513E+06	0	-8.03109E+08	-8.0248E+08
Mass Enthalpy	Btu/lb	-4049.27	-6764.77	-4049.27	-4069.32	-4066.13
Mass Cp	Btu/(lb*°F)	0.828454	0.995717		0.829412	0.827146
Ideal Gas CpCv Ratio		1.14891	1.32528		1.15002	1.14971
Dynamic Viscosity	cP	3.36214	0.907241		3.32398	3.31938
Kinematic Viscosity	cSt	3.28253	0.910186		3.24538	3.23759
Thermal Conductivity	Btu/(h*ft*°F)	0.196637	0.348112		0.197613	0.197696
Surface Tension	lbf/ft	0.00362247	0.00493337		0.00363317	0.0036285
Net Ideal Gas Heating Value	Btu/ft^3	488.641	4.95658	488.641	482.521	482.521
Net Liquid Heating Value	Btu/lb	5264.05	-949.526	5264.05	5218.18	5218.18
Gross Ideal Gas Heating Value	Btu/ft^3	575.195	55.4427	575.195	568.62	568.62
Gross Liquid Heating Value	Btu/lb	6318.73	110.429	6318.73	6272.9	6272.9

Remarks

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

Connections

	31 - Steam	32 - Condensate			
From Block	--	Steam Tubes			
To Block	Steam Tubes	--			

Stream Composition

Mole Fraction	31 - Steam %	32 - Condensate %			
N2	0 *	0			
CO2	0 *	0			
H2S	0 *	0			
C1	0 *	0			
C2	0 *	0			
C3	0 *	0			
iC4	0 *	0			
C4	0 *	0			
iC5	0 *	0			
C5	0 *	0			
C6	0 *	0			
nC7	0 *	0			
Octane	0 *	0			
Water	100 *	100			
EG	0 *	0			
TEG	0 *	0			
DEA	0 *	0			
MDEA	0 *	0			
PZ	0 *	0			
2,2-Dimethylpropane	0 *	0			
Cyclopentane	0 *	0			
2-Methylpentane	0 *	0			
3-Methylpentane	0 *	0			
Methylcyclopentane	0 *	0			
Benzene	0 *	0			
Cyclohexane	0 *	0			
2-Methylhexane	0 *	0			
3-Methylhexane	0 *	0			
Methylcyclohexane	0 *	0			
2,5-Xylenol	0 *	0			
Toluene	0 *	0			
2-Methylheptane	0 *	0			
Ethylcyclohexane	0 *	0			
Ethylbenzene	0 *	0			
o-Xylene	0 *	0			
Nonane	0 *	0			
Decane	0 *	0			

Mass Fraction	31 - Steam %	32 - Condensate %			
N2	0 *	0			
CO2	0 *	0			
H2S	0 *	0			
C1	0 *	0			
C2	0 *	0			
C3	0 *	0			
iC4	0 *	0			
C4	0 *	0			
iC5	0 *	0			
C5	0 *	0			
C6	0 *	0			

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

Mass Fraction	31 - Steam %	32 - Condensate %			
nC7	0 *	0			
Octane	0 *	0			
Water	100 *	100			
EG	0 *	0			
TEG	0 *	0			
DEA	0 *	0			
MDEA	0 *	0			
PZ	0 *	0			
2,2-Dimethylpropane	0 *	0			
Cyclopentane	0 *	0			
2-Methylpentane	0 *	0			
3-Methylpentane	0 *	0			
Methylcyclopentane	0 *	0			
Benzene	0 *	0			
Cyclohexane	0 *	0			
2-Methylhexane	0 *	0			
3-Methylhexane	0 *	0			
Methylcyclohexane	0 *	0			
2,5-Xylenol	0 *	0			
Toluene	0 *	0			
2-Methylheptane	0 *	0			
Ethylcyclohexane	0 *	0			
Ethylbenzene	0 *	0			
o-Xylene	0 *	0			
Nonane	0 *	0			
Decane	0 *	0			

Mass Flow	31 - Steam lb/h	32 - Condensate lb/h			
N2	0 *	0			
CO2	0 *	0			
H2S	0 *	0			
C1	0 *	0			
C2	0 *	0			
C3	0 *	0			
iC4	0 *	0			
C4	0 *	0			
iC5	0 *	0			
C5	0 *	0			
C6	0 *	0			
nC7	0 *	0			
Octane	0 *	0			
Water	28800 *	28800			
EG	0 *	0			
TEG	0 *	0			
DEA	0 *	0			
MDEA	0 *	0			
PZ	0 *	0			
2,2-Dimethylpropane	0 *	0			
Cyclopentane	0 *	0			
2-Methylpentane	0 *	0			
3-Methylpentane	0 *	0			
Methylcyclopentane	0 *	0			
Benzene	0 *	0			
Cyclohexane	0 *	0			
2-Methylhexane	0 *	0			
3-Methylhexane	0 *	0			
Methylcyclohexane	0 *	0			
2,5-Xylenol	0 *	0			

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Amine Sweetening	

Mass Flow	31 - Steam lb/h	32 - Condensate lb/h			
Toluene	0 *	0			
2-Methylheptane	0 *	0			
Ethylcyclohexane	0 *	0			
Ethylbenzene	0 *	0			
o-Xylene	0 *	0			
Nonane	0 *	0			
Decane	0 *	0			

Stream Properties

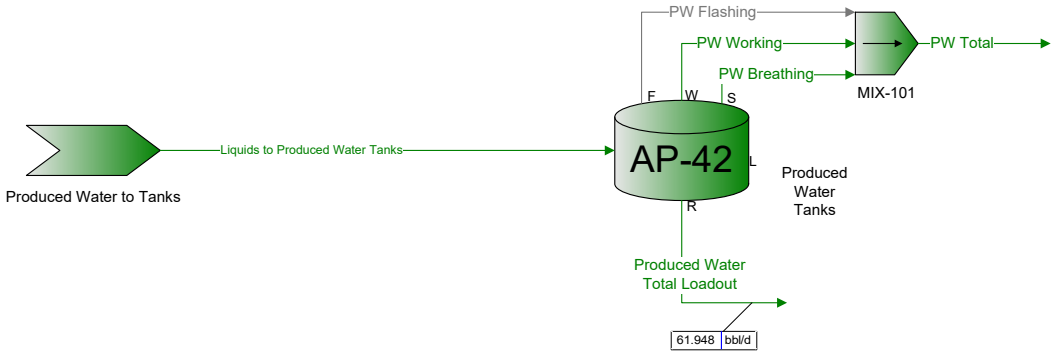
Property	Units	31 - Steam	32 - Condensate			
Temperature	°F	297.792	297.792			
Pressure	psig	51.2359 *	51.2359			
Mole Fraction Vapor	%	100 *	0 *			
Mole Fraction Light Liquid	%	0	100			
Mole Fraction Heavy Liquid	%	0	0			
Phase Mole Fraction	%	100	100			
Molecular Weight	lb/lbmol	18.0153	18.0153			
Mass Density	lb/ft^3	0.147516	57.4089			
Molar Flow	lbmol/h	1598.64	1598.64			
Mass Flow	lb/h	28800 *	28800			
Vapor Volumetric Flow	ft^3/h	195234	501.664			
Liquid Volumetric Flow	gpm	24340.8	62.5451			
Std Vapor Volumetric Flow	MMSCFD	14.6055	14.6055			
Std Liquid Volumetric Flow	sgpm	57.5733	57.5733			
Compressibility		0.971977	0.00249755			
Specific Gravity		0.622021	0.920476			
API Gravity			9.99219			
Enthalpy	Btu/h	-1.63524E+08	-1.89915E+08			
Mass Enthalpy	Btu/lb	-5677.92	-6594.28			
Mass Cp	Btu/(lb*°F)	0.469175	1.02823			
Ideal Gas CpCv Ratio		1.31815	1.31815			
Dynamic Viscosity	cP	0.0143563	0.182512			
Kinematic Viscosity	cSt	6.07553	0.198468			
Thermal Conductivity	Btu/(h*ft*°F)	0.0183372	0.396111			
Surface Tension	lbf/ft		0.00334473			
Net Ideal Gas Heating Value	Btu/ft^3	0	0			
Net Liquid Heating Value	Btu/lb	-1059.76	-1059.76			
Gross Ideal Gas Heating Value	Btu/ft^3	50.1527	50.1527			
Gross Liquid Heating Value	Btu/lb	0	0			

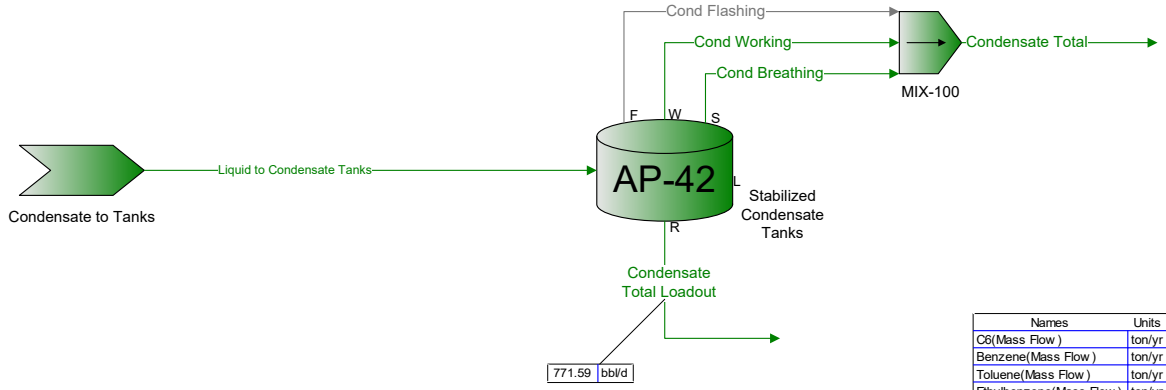
Remarks

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Tanks
Plant Schematic

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Tanks	





Names	Units	Cond Breathing	Cond Flashing	Cond Working	PW Breathing	PW Flashing	PW Working
C6(Mass Flow)	ton/yr	0.25	0	0.67	0.013	0	0.033
Benzene(Mass Flow)	ton/yr	0.23	0	0.64	0.23	0	0.55
Toluene(Mass Flow)	ton/yr	0.055	0	0.15	0.046	0	0.11
Ethylbenzene(Mass Flow)	ton/yr	0.0033	0	0.009	0.0014	0	0.0034
o-Xylene(Mass Flow)	ton/yr	0.0023	0	0.0063	0.0021	0	0.0052

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Tanks	

Connections

	Cond Breathing	Cond Flashing	Cond Working	Condensate Total Loadout	Condensate Total
From Block	Stabilized Condensate Tanks	Stabilized Condensate Tanks	Stabilized Condensate Tanks	Stabilized Condensate Tanks	MIX-100
To Block	MIX-100	MIX-100	MIX-100	--	--

Stream Composition

Mole Fraction	Cond Breathing %	Cond Flashing %	Cond Working %	Condensate Total Loadout %	Condensate Total %
N2	4.16597E-10	8.14113E-09	4.16597E-10	4.62365E-12	4.16597E-10
CO2	2.44729E-07	2.59163E-07	2.44729E-07	1.58506E-09	2.44729E-07
H2S	4.19569E-05	4.4964E-05	4.19569E-05	9.91715E-07	4.19569E-05
C1	2.78594E-09	1.02031E-08	2.78594E-09	2.19761E-11	2.78594E-09
C2	0.00045279	0.000345597	0.00045279	5.01221E-06	0.00045279
C3	0.547858	0.501686	0.547858	0.0276016	0.547858
iC4	7.31874	7.08733	7.31874	1.07458	7.31874
C4	40.9822	39.2327	40.9822	8.95447	40.9822
iC5	19.7797	19.561	19.7797	11.6744	19.7797
C5	16.5636	16.5863	16.5636	13.3313	16.5636
C6	2.07226	2.13205	2.07226	5.9185	2.07226
nC7	0.355168	0.372043	0.355168	3.53011	0.355168
Octane	0.0985779	0.119857	0.0985779	3.66493	0.0985779
Water	1.53082E-11	3.09296E-08	1.53082E-11	3.13832E-10	1.53082E-11
EG	0	0	0	0	0
TEG	0	0	0	0	0
DEA	0	0	0	0	0
MDEA	0	0	0	0	0
PZ	0	0	0	0	0
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	1.74509	1.86917	1.74509	2.30679	1.74509
2-Methylpentane	2.52112	2.70296	2.52112	5.07028	2.52112
3-Methylpentane	1.37244	1.44713	1.37244	3.10132	1.37244
Methylcyclopentane	1.48307	1.64257	1.48307	4.6633	1.48307
Benzene	2.16986	3.24038	2.16986	10.0549	2.16986
Cyclohexane	1.58015	1.84018	1.58015	7.09301	1.58015
2-Methylhexane	0.137853	0.148402	0.137853	0.932789	0.137853
3-Methylhexane	0.22517	0.230114	0.22517	1.63463	0.22517
Methylcyclohexane	0.520538	0.525384	0.520538	5.03552	0.520538
2,5-Xylenol	0	0	0	0	0
Toluene	0.428763	0.633853	0.428763	6.93457	0.428763
2-Methylheptane	0.0336638	0.0369032	0.0336638	0.76288	0.0336638
Ethylcyclohexane	0.0166476	0.0197398	0.0166476	0.611584	0.0166476
Ethylbenzene	0.022497	0.029931	0.022497	1.14357	0.022497
o-Xylene	0.0159118	0.0267104	0.0159118	1.17333	0.0159118
Nonane	0.00840544	0.0127098	0.00840544	1.1802	0.00840544
Decane	0.000251492	0.000445197	0.000251492	0.125509	0.000251492

Mass Fraction	Cond Breathing %	Cond Flashing %	Cond Working %	Condensate Total Loadout %	Condensate Total %
N2	1.74127E-10	3.37666E-09	1.74127E-10	1.56562E-12	1.74127E-10
CO2	1.607E-07	1.68871E-07	1.607E-07	8.43195E-10	1.607E-07
H2S	2.13353E-05	2.26888E-05	2.13353E-05	4.08539E-07	2.13353E-05
C1	6.66847E-10	2.42349E-09	6.66847E-10	4.26146E-12	6.66847E-10
C2	0.000203142	0.00015386	0.000203142	1.82173E-06	0.000203142
C3	0.360452	0.32754	0.360452	0.0147118	0.360452
iC4	6.3469	6.09903	6.3469	0.754946	6.3469
C4	35.5403	33.7619	35.5403	6.29097	35.5403
iC5	21.2927	20.8957	21.2927	10.1812	21.2927

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Tanks	

Mass Fraction	Cond Breathing %	Cond Flashing %	Cond Working %	Condensate Total Loadout %	Condensate Total %
C5	17.8307	17.718	17.8307	11.6262	17.8307
C6	2.66447	2.72029	2.66447	6.16497	2.66447
nC7	0.530999	0.551958	0.530999	4.27563	0.530999
Octane	0.168011	0.202709	0.168011	5.06031	0.168011
Water	4.11479E-12	8.24996E-09	4.11479E-12	6.834E-11	4.11479E-12
EG	0	0	0	0	0
TEG	0	0	0	0	0
DEA	0	0	0	0	0
MDEA	0	0	0	0	0
PZ	0	0	0	0	0
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	1.82609	1.94091	1.82609	1.95553	1.82609
2-Methylpentane	3.24161	3.44873	3.24161	5.28143	3.24161
3-Methylpentane	1.76466	1.84641	1.76466	3.23048	1.76466
Methylcyclopentane	1.8623	2.04674	1.8623	4.74386	1.8623
Benzene	2.5289	3.74756	2.5289	9.49358	2.5289
Cyclohexane	1.98419	2.29297	1.98419	7.21556	1.98419
2-Methylhexane	0.206098	0.220167	0.206098	1.12978	0.206098
3-Methylhexane	0.336643	0.341393	0.336643	1.97985	0.336643
Methylcyclohexane	0.76258	0.76377	0.76258	5.97627	0.76258
2,5-Xylenol	0	0	0	0	0
Toluene	0.589443	0.8647	0.589443	7.72318	0.589443
2-Methylheptane	0.0573748	0.062413	0.0573748	1.05334	0.0573748
Ethylcyclohexane	0.0278726	0.032796	0.0278726	0.829534	0.0278726
Ethylbenzene	0.0356361	0.0470478	0.0356361	1.46751	0.0356361
o-Xylene	0.0252049	0.0419853	0.0252049	1.5057	0.0252049
Nonane	0.0160849	0.0241352	0.0160849	1.82964	0.0160849
Decane	0.000533896	0.000937859	0.000533896	0.215854	0.000533896

Mass Flow	Cond Breathing lb/h	Cond Flashing lb/h	Cond Working lb/h	Condensate Total Loadout lb/h	Condensate Total lb/h
N2	3.68657E-12	0	9.9963E-12	1.24939E-10	1.36829E-11
CO2	3.40229E-09	0	9.22546E-09	6.72881E-08	1.26277E-08
H2S	4.51704E-07	0	1.22482E-06	3.26019E-05	1.67652E-06
C1	1.41183E-11	0	3.82825E-11	3.4007E-10	5.24008E-11
C2	4.30087E-06	0	1.1662E-05	0.000145377	1.59629E-05
C3	0.00763138	0	0.0206929	1.17402	0.0283242
iC4	0.134375	0	0.364364	60.2456	0.498739
C4	0.75245	0	2.0403	502.028	2.79275
iC5	0.450804	0	1.22238	812.472	1.67318
C5	0.377506	0	1.02362	927.783	1.40113
C6	0.0564114	0	0.152962	491.972	0.209373
nC7	0.0112422	0	0.0304837	341.201	0.0417258
Octane	0.00355708	0	0.0096452	403.819	0.0132023
Water	8.71173E-14	0	2.36223E-13	5.45362E-09	3.2334E-13
EG	0	0	0	0	0
TEG	0	0	0	0	0
DEA	0	0	0	0	0
MDEA	0	0	0	0	0
PZ	0	0	0	0	0
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	0.0386615	0	0.104832	156.054	0.143494
2-Methylpentane	0.0686304	0	0.186095	421.465	0.254725
3-Methylpentane	0.0373608	0	0.101306	257.796	0.138667
Methylcyclopentane	0.0394281	0	0.106911	378.566	0.146339
Benzene	0.0535412	0	0.145179	757.6	0.198721
Cyclohexane	0.0420088	0	0.113909	575.811	0.155918
2-Methylhexane	0.00436346	0	0.0118317	90.1582	0.0161952
3-Methylhexane	0.00712731	0	0.019326	157.994	0.0264534

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Tanks	

Mass Flow	Cond Breathing lb/h	Cond Flashing lb/h	Cond Working lb/h	Condensate Total Loadout lb/h	Condensate Total lb/h
Methylcyclohexane	0.0161451	0	0.0437783	476.914	0.0599235
2,5-Xylenol	0	0	0	0	0
Toluene	0.0124795	0	0.0338388	616.32	0.0463184
2-Methylheptane	0.00121472	0	0.00329378	84.0576	0.0045085
Ethylcyclohexane	0.00059011	0	0.00160011	66.1979	0.00219022
Ethylbenzene	0.000754476	0	0.0020458	117.109	0.00280028
o-Xylene	0.000533631	0	0.00144697	120.157	0.0019806
Nonane	0.000340545	0	0.000923405	146.007	0.00126395
Decane	1.13035E-05	0	3.06499E-05	17.2255	4.19534E-05

Stream Properties

Property	Units	Cond Breathing	Cond Flashing	Cond Working	Condensate Total Loadout	Condensate Total
Temperature	°F	71.775	71.775	71.775	71.775	71.775
Pressure	psig	-0.58	-0.58	-0.58	-0.58	-0.58
Mole Fraction Vapor	%	74.9261		74.9261	0	74.9261
Mole Fraction Light Liquid	%	25.0739		25.0739	100	25.0739
Mole Fraction Heavy Liquid	%	0		0	0	0
Phase Mole Fraction	%	100	100	100	100	100
Molecular Weight	lb/lbmol	67.0218	67.5404	67.0218	82.7302	67.0218
Mass Density	lb/ft^3	0.208047		0.208047	44.1698	0.208047
Molar Flow	lbmol/h	0.0315893	0	0.0856559	96.4597	0.117245
Mass Flow	lb/h	2.11717	0	5.74081	7980.13	7.85798
Vapor Volumetric Flow	ft^3/h	10.1764	0	27.5938	180.669	37.7702
Liquid Volumetric Flow	gpm	1.26875	0	3.44027	22.525	4.70901
Std Vapor Volumetric Flow	MMSCFD	0.000288606	0	0.000782568	0.881273	0.00107117
Std Liquid Volumetric Flow	sgpm	0.00680124	0	0.0184419	22.5046	0.0252431
Compressibility		0.727526		0.727526	0.00422993	0.727526
Specific Gravity					0.708203	
API Gravity					66.5661	
Enthalpy	Btu/h	-1895.89	0	-5140.79	-5.86838E+06	-7036.68
Mass Enthalpy	Btu/lb	-895.482		-895.482	-735.374	-895.482
Mass Cp	Btu/(lb*°F)	0.428686		0.428686	0.48231	0.428686
Ideal Gas CpCv Ratio		1.08333	1.08331	1.08333	1.07395	1.08333
Dynamic Viscosity	cP				0.366023	
Kinematic Viscosity	cSt				0.517324	
Thermal Conductivity	Btu/(h*ft*°F)				0.0691656	
Surface Tension	lbf/ft				0.00137535 ?	
Net Ideal Gas Heating Value	Btu/ft^3	3422.23	3441.94	3422.23	4111.71	3422.23
Net Liquid Heating Value	Btu/lb	19284.3	19246.2	19284.3	18782	19284.3
Gross Ideal Gas Heating Value	Btu/ft^3	3697.9	3717.01	3697.9	4408.82	3697.9
Gross Liquid Heating Value	Btu/lb	20850.5	20796.9	20850.5	20149.2	20850.5

Remarks

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Tanks	

Connections

	Liquid to Condensate Tanks	Liquids to Produced Water Tanks	Produced Water Total Loadout	PW Breathing	PW Flashing
From Block	Condensate to Tanks	Produced Water to Tanks	Produced Water Tanks	Produced Water Tanks	Produced Water Tanks
To Block	Stabilized Condensate Tanks	Produced Water Tanks	--	MIX-101	MIX-101

Stream Composition

Mole Fraction	Liquid to Condensate Tanks %	Liquids to Produced Water Tanks %	Produced Water Total Loadout %	PW Breathing %	PW Flashing %
N2	5.12379E-12	1.73095E-06	0	0.00368857	0.0833171
CO2	1.88024E-09	0.000233047	0.000233155	2.8662E-06	3.5544E-06
H2S	1.04145E-06	9.46012E-05	9.46403E-05	1.13463E-05	1.06978E-05
C1	2.53316E-11	0.00142175	0	3.02969	16.4403
C2	5.55582E-06	0.0107381	0	22.8824	20.2804
C3	0.0282332	0.0379487	0.0256	26.3402	21.2874
iC4	1.08216	0.0115557	0.0100443	3.23071	2.66491
C4	8.99335	0.0690725	0.063503	11.9321	9.94431
iC5	11.6842	0.0482115	0.0468215	3.00882	2.56373
C5	13.3352	0.0653043	0.0639104	3.03439	2.60789
C6	5.91383	0.0472948	0.0470201	0.632502	0.557645
nC7	3.52625	0.02996	0.0299233	0.108333	0.0987556
Octane	3.6606	0.0256236	0.0256217	0.029601	0.0276881
Water	3.1347E-10	95.2486	95.2907	5.54736	5.31077
EG	0	1.39865E-06	1.39931E-06	1.34586E-10	1.51966E-10
TEG	0	0.00161642	0.00161718	2.2743E-10	3.08689E-10
DEA	0	0	0	0	0
MDEA	0	0.0276211	0.0276341	3.09819E-07	3.59654E-07
PZ	0	0.0399862	0.040005	2.71652E-05	2.83695E-05
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	2.3061	0.0800885	0.0793475	1.65853	1.44719
2-Methylpentane	5.06719	0.0336385	0.0333305	0.689668	0.599009
3-Methylpentane	3.09923	0.026874	0.0266683	0.46502	0.405649
Methylcyclopentane	4.65944	0.131034	0.1304	1.48188	1.30659
Benzene	10.0453	2.13388	2.12936	11.7593	10.5786
Cyclohexane	7.08632	0.200655	0.200033	1.52558	1.35893
2-Methylhexane	0.931824	0.00675879	0.00674383	0.0386168	0.0347222
3-Methylhexane	1.63292	0.0148765	0.0148499	0.0715799	0.0647704
Methylcyclohexane	5.03004	0.103635	0.103525	0.337996	0.307413
2,5-Xylenol	0	3.27909E-06	3.28061E-06	4.3641E-08	4.52423E-08
Toluene	6.92667	1.26314	1.26277	2.0363	1.88198
2-Methylheptane	0.761995	0.00499919	0.00499739	0.00882781	0.00817067
Ethylcyclohexane	0.610862	0.0108223	0.0108228	0.00978334	0.00913275
Ethylbenzene	1.14221	0.149601	0.149646	0.0533224	0.0510696
o-Xylene	1.17193	0.168698	0.168739	0.0809025	0.0767468
Nonane	1.17877	0.00555843	0.00555967	0.00292466	0.00278755
Decane	0.125357	0.00046855	0.000468734	7.5788E-05	7.41519E-05

Mass Fraction	Liquid to Condensate Tanks %	Liquids to Produced Water Tanks %	Produced Water Total Loadout %	PW Breathing %	PW Flashing %
N2	1.73538E-12	2.28905E-06	0	0.00205824	0.0513471
CO2	1.00045E-09	0.000484166	0.000484703	2.5126E-06	3.44135E-06
H2S	4.29125E-07	0.0001522	0.00015236	7.70257E-06	8.02083E-06
C1	4.91326E-12	0.00107671	0	0.968144	5.80225
C2	2.01978E-06	0.0152423	0	13.7054	13.4156

* User Specified Values
? Extrapolated or Approximate Values

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Tanks	

Mass Fraction	Liquid to Condensate Tanks %	Liquids to Produced Water Tanks %	Produced Water Total Loadout %	PW Breathing %	PW Flashing %
C3	0.0150519	0.0789948	0.0533237	23.1358	20.6507
iC4	0.760447	0.0317061	0.027577	3.74034	3.40753
C4	6.31975	0.189519	0.17435	13.8143	12.7155
iC5	10.1921	0.164204	0.159573	4.3241	4.06928
C5	11.6323	0.222421	0.217814	4.36085	4.13936
C6	6.16152	0.192399	0.191404	1.08572	1.0572
nC7	4.27195	0.141718	0.141635	0.216227	0.217697
Octane	5.05549	0.138172	0.138251	0.0673523	0.0695798
Water	6.82768E-11	81.0038	81.0917	1.99067	2.10482
EG	0	4.0981E-06	4.10266E-06	1.66394E-10	2.07505E-10
TEG	0	0.0114591	0.0114719	6.80317E-10	1.01983E-09
DEA	0	0	0	0	0
MDEA	0	0.155377	0.15555	7.35389E-07	9.42841E-07
PZ	0	0.162592	0.162773	4.66087E-05	5.37588E-05
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	1.95541	0.265154	0.262869	2.31695	2.23286
2-Methylpentane	5.27942	0.136844	0.135678	1.18384	1.13562
3-Methylpentane	3.22903	0.109325	0.108558	0.798227	0.76904
Methylcyclopentane	4.74103	0.520586	0.5184	2.4842	2.41912
Benzene	9.48673	7.8685	7.85689	18.2966	18.1786
Cyclohexane	7.21041	0.797185	0.795225	2.55746	2.51604
2-Methylhexane	1.12888	0.0319706	0.0319204	0.0770768	0.0765418
3-Methylhexane	1.97823	0.0703692	0.0702885	0.142869	0.14278
Methylcyclohexane	5.97114	0.480355	0.480154	0.661047	0.664029
2,5-Xylenol	0	1.89105E-05	1.89315E-05	1.06197E-07	1.21592E-07
Toluene	7.71616	5.4941	5.49605	3.73726	3.81479
2-Methylheptane	1.05236	0.0269575	0.0269651	0.0200862	0.0205328
Ethylcyclohexane	0.828745	0.0573279	0.0573674	0.0218676	0.0225454
Ethylbenzene	1.4661	0.74976	0.750469	0.112762	0.119278
o-Xylene	1.50424	0.845467	0.846218	0.171086	0.179249
Nonane	1.82785	0.0336537	0.0336828	0.00747172	0.00786526
Decane	0.215643	0.0031471	0.00315036	0.000214793	0.000232106

Mass Flow	Liquid to Condensate Tanks lb/h	Liquids to Produced Water Tanks lb/h	Produced Water Total Loadout lb/h	PW Breathing lb/h	PW Flashing lb/h
N2	1.38622E-10	1.99968E-05	0	5.80521E-06	0
CO2	7.99158E-08	0.0042296	0.00422957	7.08673E-09	0
H2S	3.42785E-05	0.00132959	0.00132951	2.17249E-08	0
C1	3.9247E-10	0.00940599	0	0.00273063	0
C2	0.00016134	0.133155	0	0.0386558	0
C3	1.20234	0.690085	0.465309	0.0652541	0
iC4	60.7444	0.276979	0.24064	0.0105495	0
C4	504.82	1.65561	1.52139	0.0389629	0
iC5	814.145	1.43446	1.39245	0.012196	0
C5	929.185	1.94304	1.90067	0.0122997	0
C6	492.182	1.68076	1.67022	0.00306224	0
nC7	341.242	1.23802	1.23592	0.000609862	0
Octane	403.832	1.20705	1.20639	0.000189966	0
Water	5.45394E-09	707.635	707.616	0.00561463	0
EG	0	3.58003E-05	3.58003E-05	4.6931E-13	0
TEG	0	0.100105	0.100105	1.91882E-12	0
DEA	0	0	0	0	0
MDEA	0	1.35734	1.35734	2.07415E-09	0
PZ	0	1.42037	1.42037	1.31459E-07	0
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	156.198	2.31634	2.29383	0.0065349	0
2-Methylpentane	421.719	1.19545	1.18394	0.00333901	0

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Tanks	

Mass Flow	Liquid to Condensate Tanks lb/h	Liquids to Produced Water Tanks lb/h	Produced Water Total Loadout lb/h	PW Breathing lb/h	PW Flashing lb/h
3-Methylpentane	257.935	0.955049	0.947294	0.00225138	0
Methylcyclopentane	378.713	4.54775	4.52362	0.00700663	0
Benzene	757.799	68.7379	68.5601	0.0516051	0
Cyclohexane	575.967	6.96408	6.93923	0.00721326	0
2-Methylhexane	90.1744	0.27929	0.278541	0.000217393	0
3-Methylhexane	158.021	0.614733	0.613345	0.00040296	0
Methylcyclohexane	476.974	4.1963	4.18988	0.00186447	0
2,5-Xylenol	0	0.000165199	0.000165198	2.99525E-10	0
Toluene	616.366	47.9955	47.9592	0.0105409	0
2-Methylheptane	84.0621	0.235496	0.235301	5.66528E-05	0
Ethylcyclohexane	66.2	0.500807	0.500595	6.1677E-05	0
Ethylbenzene	117.112	6.54977	6.54868	0.000318042	0
o-Xylene	120.159	7.38586	7.3842	0.000482544	0
Nonane	146.008	0.293993	0.29392	2.10738E-05	0
Decane	17.2255	0.0274925	0.0274904	6.0582E-07	0

Stream Properties

Property	Units	Liquid to Condensate Tanks	Liquids to Produced Water Tanks	Produced Water Total Loadout	PW Breathing	PW Flashing
Temperature	°F	120.481	120	71.775	71.775	71.775
Pressure	psig	13.2359	1.24	-0.58	-0.58	-0.58
Mole Fraction Vapor	%	0	0	0	85.7468	
Mole Fraction Light Liquid	%	100	4.7023	4.62489	11.2819	
Mole Fraction Heavy Liquid	%	0	95.2977	95.3751	2.97124	
Phase Mole Fraction	%	100	100	100	100	100
Molecular Weight	lb/lbmol	82.7111	21.1833	21.1697	50.2029	45.4553
Mass Density	lb/ft^3	42.5226	59.2447	60.1397	0.1344	
Molar Flow	lbmol/h	96.5769	41.2392	41.2198	0.00561816	0
Mass Flow	lb/h	7987.98	873.583	872.612	0.282048	0
Vapor Volumetric Flow	ft^3/h	187.853	14.7454	14.5097	2.09857	0
Liquid Volumetric Flow	gpm	23.4206	1.83838	1.80901	0.26164	0
Std Vapor Volumetric Flow	MMSCFD	0.882345	0.376769	0.376592	5.13285E-05	0
Std Liquid Volumetric Flow	sgpm	22.5299	1.8102	1.80681	0.000984733	0
Compressibility		0.00834035	0.000844925	0.000794965	0.843576	
Specific Gravity		0.681794	0.949909	0.96426		
API Gravity		66.5587	14.9127	14.8203		
Enthalpy	Btu/h	-5.6818E+06	-4.80468E+06	-4.83734E+06 ?	-227.51 ?	0
Mass Enthalpy	Btu/lb	-711.293	-5499.96	-5543.52 ?	-806.637 ?	
Mass Cp	Btu/(lb*°F)	0.516506	0.890861	0.887746 ?	0.392426 ?	
Ideal Gas CpCv Ratio		1.06785	1.28688	1.29302	1.12302	1.13484
Dynamic Viscosity	cP	0.278987	0.542076	0.899267		
Kinematic Viscosity	cSt	0.409584	0.571202	0.933484		
Thermal Conductivity	Btu/(h*ft*°F)	0.0642664	0.301407 ?	0.288479 ?		
Surface Tension	lbf/ft	0.00116579	0.00398293 ?	0.00433167 ?		
Net Ideal Gas Heating Value	Btu/ft^3	4110.87	187.706	186.626	2489.25	2260.07
Net Liquid Heating Value	Btu/lb	18782.5	2482.06	2464	18698.9	18757.7
Gross Ideal Gas Heating Value	Btu/ft^3	4407.96	245.215	244.071	2682.32	2438.76
Gross Liquid Heating Value	Btu/lb	20149.9	3515.46	3496.92	20163.3	20254.6

Remarks

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Tanks	

Connections

	PW Total	PW Working			
From Block	MIX-101	Produced Water Tanks			
To Block	--	MIX-101			

Stream Composition

Mole Fraction	PW Total %	PW Working %			
N2	0.00368857	0.00368857			
CO2	2.8662E-06	2.8662E-06			
H2S	1.13463E-05	1.13463E-05			
C1	3.02969	3.02969			
C2	22.8824	22.8824			
C3	26.3402	26.3402			
iC4	3.23071	3.23071			
C4	11.9321	11.9321			
iC5	3.00882	3.00882			
C5	3.03439	3.03439			
C6	0.632502	0.632502			
nC7	0.108333	0.108333			
Octane	0.029601	0.029601			
Water	5.54736	5.54736			
EG	1.34586E-10	1.34586E-10			
TEG	2.2743E-10	2.2743E-10			
DEA	0	0			
MDEA	3.09819E-07	3.09819E-07			
PZ	2.71652E-05	2.71652E-05			
2,2-Dimethylpropane	0	0			
Cyclopentane	1.65853	1.65853			
2-Methylpentane	0.689668	0.689668			
3-Methylpentane	0.46502	0.46502			
Methylcyclopentane	1.48188	1.48188			
Benzene	11.7593	11.7593			
Cyclohexane	1.52558	1.52558			
2-Methylhexane	0.0386168	0.0386168			
3-Methylhexane	0.0715799	0.0715799			
Methylcyclohexane	0.337996	0.337996			
2,5-Xylenol	4.3641E-08	4.3641E-08			
Toluene	2.0363	2.0363			
2-Methylheptane	0.00882781	0.00882781			
Ethylcyclohexane	0.00978334	0.00978334			
Ethylbenzene	0.0533224	0.0533224			
o-Xylene	0.0809025	0.0809025			
Nonane	0.00292466	0.00292466			
Decane	7.5788E-05	7.5788E-05			

Mass Fraction	PW Total %	PW Working %			
N2	0.00205824	0.00205824			
CO2	2.5126E-06	2.5126E-06			
H2S	7.70257E-06	7.70257E-06			
C1	0.968144	0.968144			
C2	13.7054	13.7054			
C3	23.1358	23.1358			
iC4	3.74034	3.74034			
C4	13.8143	13.8143			
iC5	4.3241	4.3241			
C5	4.36085	4.36085			
C6	1.08572	1.08572			
nC7	0.216227	0.216227			
Octane	0.0673523	0.0673523			

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Process Streams Report
All Streams
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Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Tanks	

Mass Fraction	PW Total %	PW Working %			
Water	1.99067	1.99067			
EG	1.66394E-10	1.66394E-10			
TEG	6.80317E-10	6.80317E-10			
DEA	0	0			
MDEA	7.35389E-07	7.35389E-07			
PZ	4.66087E-05	4.66087E-05			
2,2-Dimethylpropane	0	0			
Cyclopentane	2.31695	2.31695			
2-Methylpentane	1.18384	1.18384			
3-Methylpentane	0.798227	0.798227			
Methylcyclopentane	2.4842	2.4842			
Benzene	18.2966	18.2966			
Cyclohexane	2.55746	2.55746			
2-Methylhexane	0.0770768	0.0770768			
3-Methylhexane	0.142869	0.142869			
Methylcyclohexane	0.661047	0.661047			
2,5-Xylenol	1.06197E-07	1.06197E-07			
Toluene	3.73726	3.73726			
2-Methylheptane	0.0200862	0.0200862			
Ethylcyclohexane	0.0218676	0.0218676			
Ethylbenzene	0.112762	0.112762			
o-Xylene	0.171086	0.171086			
Nonane	0.00747172	0.00747172			
Decane	0.000214793	0.000214793			

Mass Flow	PW Total lb/h	PW Working lb/h			
N2	1.99968E-05	1.41915E-05			
CO2	2.44111E-08	1.73244E-08			
H2S	7.48341E-08	5.31092E-08			
C1	0.00940599	0.00667536			
C2	0.133155	0.0944988			
C3	0.224776	0.159522			
iC4	0.0363392	0.0257896			
C4	0.134212	0.0952496			
iC5	0.0420107	0.0298147			
C5	0.0423677	0.0300681			
C6	0.0105482	0.00748601			
nC7	0.00210074	0.00149088			
Octane	0.00065436	0.000464395			
Water	0.0193403	0.0137256			
EG	1.61659E-12	1.14728E-12			
TEG	6.6096E-12	4.69079E-12			
DEA	0	0			
MDEA	7.14466E-09	5.07051E-09			
PZ	4.52826E-07	3.21367E-07			
2,2-Dimethylpropane	0	0			
Cyclopentane	0.0225103	0.0159754			
2-Methylpentane	0.0115016	0.00816261			
3-Methylpentane	0.00775516	0.00550378			
Methylcyclopentane	0.0241352	0.0171286			
Benzene	0.17776	0.126155			
Cyclohexane	0.024847	0.0176337			
2-Methylhexane	0.000748838	0.000531445			
3-Methylhexane	0.00138804	0.000985084			
Methylcyclohexane	0.00642239	0.00455792			
2,5-Xylenol	1.03175E-09	7.32225E-10			
Toluene	0.0363093	0.0257684			
2-Methylheptane	0.000195147	0.000138495			
Ethylcyclohexane	0.000212454	0.000150777			
Ethylbenzene	0.00109554	0.000777493			

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Process Streams Report
All Streams
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Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	Tanks	

Mass Flow	PW Total lb/h	PW Working lb/h			
o-Xylene	0.00166218	0.00117964			
Nonane	7.25914E-05	5.15176E-05			
Decane	2.08682E-06	1.481E-06			

Stream Properties

Property	Units	PW Total	PW Working			
Temperature	°F	71.775	71.775			
Pressure	psig	-0.58	-0.58			
Mole Fraction Vapor	%	85.7468	85.7468			
Mole Fraction Light Liquid	%	11.2819	11.2819			
Mole Fraction Heavy Liquid	%	2.97124	2.97124			
Phase Mole Fraction	%	100	100			
Molecular Weight	lb/lbmol	50.2029	50.2029			
Mass Density	lb/ft^3	0.1344	0.1344			
Molar Flow	lbmol/h	0.0193524	0.0137343			
Mass Flow	lb/h	0.971548	0.6895			
Vapor Volumetric Flow	ft^3/h	7.22879	5.13022			
Liquid Volumetric Flow	gpm	0.901252	0.639611			
Std Vapor Volumetric Flow	MMSCFD	0.000176807	0.000125479			
Std Liquid Volumetric Flow	sgpm	0.00339203	0.0024073			
Compressibility		0.843576	0.843576			
Specific Gravity						
API Gravity						
Enthalpy	Btu/h	-783.687	-556.177 ?			
Mass Enthalpy	Btu/lb	-806.637	-806.637 ?			
Mass Cp	Btu/(lb*°F)	0.392426 ?	0.392426 ?			
Ideal Gas CpCv Ratio		1.12302	1.12302			
Dynamic Viscosity	cP					
Kinematic Viscosity	cSt					
Thermal Conductivity	Btu/(h*ft*°F)					
Surface Tension	lbf/ft					
Net Ideal Gas Heating Value	Btu/ft^3	2489.25	2489.25			
Net Liquid Heating Value	Btu/lb	18698.9	18698.9			
Gross Ideal Gas Heating Value	Btu/ft^3	2682.32	2682.32			
Gross Liquid Heating Value	Btu/lb	20163.3	20163.3			

Remarks

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Blocks
Produced Water Tanks
Tank Losses

Client Name:	Trinity	Job: Fuel Gas Quality	
Location:	Lea County	Modified: 3:30 PM, 7/1/2025	
Flowsheet:	Tanks	Status: Solved 3:30 PM, 7/1/2025	

Connections

Stream	Connection Type	Other Block	Stream	Connection Type	Other Block
Liquids to Produced Water Tanks	Inlet	Produced Water to Tanks	PW Flashing	Flashing Losses Stream	MIX-101
PW Working	Working Losses Stream	MIX-101	PW Breathing	Standing Losses Stream	MIX-101
Produced Water Total Loadout	Residual Liquid Stream				

Working and Standing Properties

Tank Geometry	Vertical Cylinder		Roof Type	Cone	
* Shell Length	20	ft	Slope of Coned Roof	0.0625	
* Shell Diameter	12	ft	Breather Vent Pressure	0.03	psi
* Number of Storage Tanks	2		Breather Vacuum Pressure	-0.03	psi
Maximum Fraction Fill of Tank	90	%	* Location	Roswell, NM	
Average Fraction Fill of Tank	50	%	Time Frame	Year	
Minimum Fraction Fill of Tank	10	%	Known Liquid Bulk Temperature?	False	
* Material Category	Light Organics		Liquid Bulk Temperature	62.9915	°F
Insulation	Uninsulated		Use AP 42 Raoult's Vapor Pressure?	False	
Bolted or Riveted Construction?	False		Flashing Temperature	71.775	°F
Vapor Balanced Tank?	False		Average Daily Maximum Ambient Temperature	75.8	°F
Known Sum of Increases in Liquid Level?	False		Average Daily Minimum Ambient Temperature	47.6	°F
Sum of Increases in Liquid Level	561.757	ft/yr	Atmospheric Pressure at Tank Location	12.88	psia
Shell Color	White		Daily Solar Insolation	1722	Btu/(day*ft^2)
Shell Paint Condition	Average		Average Wind Speed	8.7	mph
Roof Color	White		Include Short Term Emissions	False	
Roof Paint Condition	Average				

Composition Subset Properties

* Component Subset	All Selected	Species in Results	Selected Species
Atomic Basis	False	Fraction Denominator	Selected Species

Tabulated Composition Subset Properties

Index	Selected Components			
N2	True			
CO2	True			
H2S	True			
C1	True			
C2	True			
C3	True			
iC4	True			
C4	True			
iC5	True			
C5	True			
C6	True			
nC7	True			
Octane	True			
Water	True			
EG	True			
TEG	True			
DEA	True			
MDEA	True			
PZ	True			

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Blocks
Produced Water Tanks
Tank Losses

Client Name:	Trinity	Job: Fuel Gas Quality	
Location:	Lea County	Modified: 3:30 PM, 7/1/2025	
Flowsheet:	Tanks	Status: Solved 3:30 PM, 7/1/2025	

Tabulated Composition Subset Properties

Index	Selected Components			
2,2-Dimethylpropane	True			
Cyclopentane	True			
2-Methylpentane	True			
3-Methylpentane	True			
Methylcyclopentane	True			
Benzene	True			
Cyclohexane	True			
2-Methylhexane	True			
3-Methylhexane	True			
Methylcyclohexane	True			
2,5-Xylenol	True			
Toluene	True			
2-Methylheptane	True			
Ethylcyclohexane	True			
Ethylbenzene	True			
o-Xylene	True			
Nonane	True			
Decane	True			

Details Properties

Vapor Space Volume	1145.11	ft^3	Liquid Height	10	ft
Vapor Density	0.0512162	lb/ft^3	Roof Outage	0.125	ft
Vapor Space Expansion Factor	0.278592	1/day	Tank Roof Height	0.375	ft
Vented Vapor Saturation Factor	0.223193		Tank Shell Radius	6	ft
Vapor Space Outage	10.125	ft	Vapor Molecular Weight	44.4784	lb/lbmol
Average Daily Vapor Temperature Range	30.7466	°R	Average Vapor Temperature	524.855	°R
Average Daily Vapor Pressure Range	1.46602	psi	Average Daily Ambient Temperature	521.37	°R
Breather Vent Pressure Setting Range	0.06	psi	Net Working Loss Throughput	63533.2	ft^3/yr
Vapor Pressure at Average Daily Liquid Surface Temperature	6.48577	psia	Working Loss Turnover (Saturation) Factor	1	
Average Daily Liquid Surface Temperature	523.758	°R	Number of Turnovers per Year	35.1098	
Average Daily Ambient Temperature Range	28.2	°R	Annual Net Throughput	22633.9	bbl/yr
Tank Roof Surface Solar Absorptance	0.25		Maximum Liquid Height	18	ft
Tank Shell Surface Solar Absorptance	0.25		Minimum Liquid Height	2	ft
Vapor Pressure at Maximum Liquid Surface Temperature	7.25898	psia	Working Loss Product Factor	1	
Vapor Pressure at Minimum Liquid Surface Temperature	5.79296	psia	Vent Setting Correction Factor	1	
Maximum Liquid Surface Temperature	531.445	°R	Collection Efficiency		%
Minimum Liquid Surface Temperature	516.072	°R	Annual Net Throughput Per Tank	11316.9	bbl/yr

Loading Properties

Truck Annual Leak Test Passed	None		

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Blocks
Produced Water Tanks
Tank Losses

Client Name:	Trinity	Job: Fuel Gas Quality	
Location:	Lea County	Modified: 3:30 PM, 7/1/2025	
Flowsheet:	Tanks	Status: Solved 3:30 PM, 7/1/2025	

Results Properties

Flashing Losses	0 ton/yr	Standing Losses per Tank	0.617685 ton/yr
Working Losses	3.02001 ton/yr	Flashing Losses per Tank	0 ton/yr
Standing Losses	1.23537 ton/yr	Working and Standing Losses	4.25538 ton/yr
Working Losses per Tank	1.51001 ton/yr	Working and Standing Losses per Tank	2.12769 ton/yr

Tabulated Results Properties

Index	Flashing Losses Mass Flows ton/yr	Working Losses Mass Flows ton/yr	Standing Losses Mass Flows ton/yr	Working and Standing Losses Mass Flows ton/yr
N2	0	6.2159E-05	2.54268E-05	8.75858E-05
CO2	0	7.58808E-08	3.10399E-08	1.06921E-07
H2S	0	2.32618E-07	9.51552E-08	3.27774E-07
C1	0	0.0292381	0.0119602	0.0411982
C2	0	0.413905	0.169312	0.583217
C3	0	0.698704	0.285813	0.984517
iC4	0	0.112959	0.046207	0.159166
C4	0	0.417193	0.170658	0.587851
iC5	0	0.130588	0.0534187	0.184007
C5	0	0.131698	0.0538726	0.185571
C6	0	0.0327887	0.0134126	0.0462013
nC7	0	0.00653007	0.0026712	0.00920126
Octane	0	0.00203405	0.00083205	0.0028661
Water	0	0.0601183	0.0245921	0.0847104
EG	0	5.02511E-12	2.05558E-12	7.08068E-12
TEG	0	2.05456E-11	8.40443E-12	2.89501E-11
DEA	0	0	0	0
MDEA	0	2.22088E-08	9.08477E-09	3.12936E-08
PZ	0	1.40759E-06	5.75789E-07	1.98338E-06
2,2-Dimethylpropane	0	0	0	0
Cyclopentane	0	0.0699721	0.0286229	0.0985949
2-Methylpentane	0	0.0357522	0.0146248	0.0503771
3-Methylpentane	0	0.0241065	0.00986105	0.0339676
Methylcyclopentane	0	0.0750231	0.0306891	0.105712
Benzene	0	0.552558	0.22603	0.778588
Cyclohexane	0	0.0772356	0.0315941	0.10883
2-Methylhexane	0	0.00232773	0.000952183	0.00327991
3-Methylhexane	0	0.00431467	0.00176496	0.00607963
Methylcyclohexane	0	0.0199637	0.00816637	0.0281301
2,5-Xylenol	0	3.20715E-09	1.31192E-09	4.51907E-09
Toluene	0	0.112866	0.046169	0.159035
2-Methylheptane	0	0.000606607	0.000248139	0.000854746
Ethylcyclohexane	0	0.000660403	0.000270145	0.000930548
Ethylbenzene	0	0.00340542	0.00139302	0.00479844
o-Xylene	0	0.00516681	0.00211354	0.00728036
Nonane	0	0.000225647	9.23034E-05	0.00031795
Decane	0	6.48678E-06	2.65349E-06	9.14027E-06

Warnings

ProMax:ProMax!Project!Flowsheets!Tanks!Blocks!Produced Water Tanks
Warning: Vapor adjusted to ensure mass balance.

Remarks

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Blocks
Stabilized Condensate Tanks
Tank Losses

Client Name:	Trinity	Job: Fuel Gas Quality	
Location:	Lea County	Modified: 3:30 PM, 7/1/2025	
Flowsheet:	Tanks	Status: Solved 3:30 PM, 7/1/2025	

Connections

Stream	Connection Type	Other Block	Stream	Connection Type	Other Block
Liquid to Condensate Tanks	Inlet	Condensate to Tanks	Cond Flashing	Flashing Losses Stream	MIX-100
Cond Working	Working Losses Stream	MIX-100	Cond Breathing	Standing Losses Stream	MIX-100
Condensate Total Loadout	Residual Liquid Stream				

Working and Standing Properties

Tank Geometry	Vertical Cylinder		Roof Type	Cone	
* Shell Length	20	ft	Slope of Coned Roof	0.0625	
* Shell Diameter	12	ft	Breather Vent Pressure	0.03	psi
* Number of Storage Tanks	8		Breather Vacuum Pressure	-0.03	psi
Maximum Fraction Fill of Tank	90	%	* Location	Roswell, NM	
Average Fraction Fill of Tank	50	%	Time Frame	Year	
Minimum Fraction Fill of Tank	10	%	Known Liquid Bulk Temperature?	False	
* Material Category	Light Organics		Liquid Bulk Temperature	62.9915	°F
Insulation	Uninsulated		* Use AP 42 Raoult's Vapor Pressure?	True	
Bolted or Riveted Construction?	False		Flashing Temperature	71.775	°F
Vapor Balanced Tank?	False		Average Daily Maximum Ambient Temperature	75.8	°F
Known Sum of Increases in Liquid Level?	False		Average Daily Minimum Ambient Temperature	47.6	°F
Sum of Increases in Liquid Level	1741.02	ft/yr	Atmospheric Pressure at Tank Location	12.88	psia
Shell Color	White		Daily Solar Insolation	1722	Btu/(day*ft^2)
Shell Paint Condition	Average		Average Wind Speed	8.7	mph
Roof Color	White		Include Short Term Emissions	False	
Roof Paint Condition	Average				

Composition Subset Properties

* Component Subset	All Selected	Species in Results	Selected Species
Atomic Basis	False	Fraction Denominator	Selected Species

Tabulated Composition Subset Properties

Index	Selected Components			
N2	True			
CO2	True			
H2S	True			
C1	True			
C2	True			
C3	True			
iC4	True			
C4	True			
iC5	True			
C5	True			
C6	True			
nC7	True			
Octane	True			
Water	True			
EG	True			
TEG	True			
DEA	True			
MDEA	True			
PZ	True			

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Blocks
Stabilized Condensate Tanks
Tank Losses

Client Name:	Trinity	Job: Fuel Gas Quality	
Location:	Lea County	Modified: 3:30 PM, 7/1/2025	
Flowsheet:	Tanks	Status: Solved 3:30 PM, 7/1/2025	

Tabulated Composition Subset Properties

Index	Selected Components			
2,2-Dimethylpropane	True			
Cyclopentane	True			
2-Methylpentane	True			
3-Methylpentane	True			
Methylcyclopentane	True			
Benzene	True			
Cyclohexane	True			
2-Methylhexane	True			
3-Methylhexane	True			
Methylcyclohexane	True			
2,5-Xylenol	True			
Toluene	True			
2-Methylheptane	True			
Ethylcyclohexane	True			
Ethylbenzene	True			
o-Xylene	True			
Nonane	True			
Decane	True			

Details Properties

Vapor Space Volume	1145.11	ft^3	Liquid Height	10	ft
Vapor Density	0.0721686	lb/ft^3	Roof Outage	0.125	ft
Vapor Space Expansion Factor	0.326999	1/day	Tank Roof Height	0.375	ft
Vented Vapor Saturation Factor	0.235036		Tank Shell Radius	6	ft
Vapor Space Outage	10.125	ft	Vapor Molecular Weight	67.0218	lb/lbmol
Average Daily Vapor Temperature Range	30.7466	°R	Average Vapor Temperature	524.855	°R
Average Daily Vapor Pressure Range	1.88842	psi	Average Daily Ambient Temperature	521.37	°R
Breather Vent Pressure Setting Range	0.06	psi	Net Working Loss Throughput	196905	ft^3/yr
Vapor Pressure at Average Daily Liquid Surface Temperature	6.06506	psia	Working Loss Turnover (Saturation) Factor	0.442367	
Average Daily Liquid Surface Temperature	523.758	°R	Number of Turnovers per Year	108.814	
Average Daily Ambient Temperature Range	28.2	°R	Annual Net Throughput	280591	bbl/yr
Tank Roof Surface Solar Absorptance	0.25		Maximum Liquid Height	18	ft
Tank Shell Surface Solar Absorptance	0.25		Minimum Liquid Height	2	ft
Vapor Pressure at Maximum Liquid Surface Temperature	7.06807	psia	Working Loss Product Factor	1	
Vapor Pressure at Minimum Liquid Surface Temperature	5.17965	psia	Vent Setting Correction Factor	1	
Maximum Liquid Surface Temperature	531.445	°R	Collection Efficiency		%
Minimum Liquid Surface Temperature	516.072	°R	Annual Net Throughput Per Tank	35073.9	bbl/yr

Loading Properties

Truck Annual Leak Test Passed	None		

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Blocks
Stabilized Condensate Tanks
Tank Losses

Client Name:	Trinity	Job: Fuel Gas Quality	
Location:	Lea County	Modified: 3:30 PM, 7/1/2025	
Flowsheet:	Tanks	Status: Solved 3:30 PM, 7/1/2025	

Results Properties

Flashing Losses	0 ton/yr	Standing Losses per Tank	1.15915 ton/yr
Working Losses	25.1448 ton/yr	Flashing Losses per Tank	0 ton/yr
Standing Losses	9.27321 ton/yr	Working and Standing Losses	34.418 ton/yr
Working Losses per Tank	3.14309 ton/yr	Working and Standing Losses per Tank	4.30225 ton/yr

Tabulated Results Properties

Index	Flashing Losses Mass Flows ton/yr	Working Losses Mass Flows ton/yr	Standing Losses Mass Flows ton/yr	Working and Standing Losses Mass Flows ton/yr
N2	0	4.37838E-11	1.61472E-11	5.99309E-11
CO2	0	4.04075E-08	1.4902E-08	5.53095E-08
H2S	0	5.3647E-06	1.97847E-06	7.34317E-06
C1	0	1.67677E-10	6.18382E-11	2.29515E-10
C2	0	5.10796E-05	1.88378E-05	6.99174E-05
C3	0	0.0906347	0.0334255	0.12406
iC4	0	1.59591	0.588562	2.18448
C4	0	8.93653	3.29573	12.2323
iC5	0	5.35401	1.97452	7.32853
C5	0	4.48348	1.65347	6.13695
C6	0	0.669974	0.247082	0.917056
nC7	0	0.133518	0.0492407	0.182759
Octane	0	0.042246	0.01558	0.057826
Water	0	1.03465E-12	3.81574E-13	1.41623E-12
EG	0	0	0	0
TEG	0	0	0	0
DEA	0	0	0	0
MDEA	0	0	0	0
PZ	0	0	0	0
2,2-Dimethylpropane	0	0	0	0
Cyclopentane	0	0.459166	0.169337	0.628503
2-Methylpentane	0	0.815094	0.300601	1.1157
3-Methylpentane	0	0.443719	0.16364	0.607359
Methylcyclopentane	0	0.468271	0.172695	0.640966
Benzene	0	0.635886	0.23451	0.870396
Cyclohexane	0	0.49892	0.183998	0.682919
2-Methylhexane	0	0.0518229	0.0191119	0.0709349
3-Methylhexane	0	0.0846481	0.0312176	0.115866
Methylcyclohexane	0	0.191749	0.0707157	0.262465
2,5-Xylenol	0	0	0	0
Toluene	0	0.148214	0.0546603	0.202874
2-Methylheptane	0	0.0144268	0.00532049	0.0197472
Ethylcyclohexane	0	0.00700849	0.00258468	0.00959317
Ethylbenzene	0	0.0089606	0.00330461	0.0122652
o-Xylene	0	0.00633771	0.0023373	0.00867501
Nonane	0	0.00404451	0.00149159	0.0055361
Decane	0	0.000134247	4.95093E-05	0.000183756

Remarks

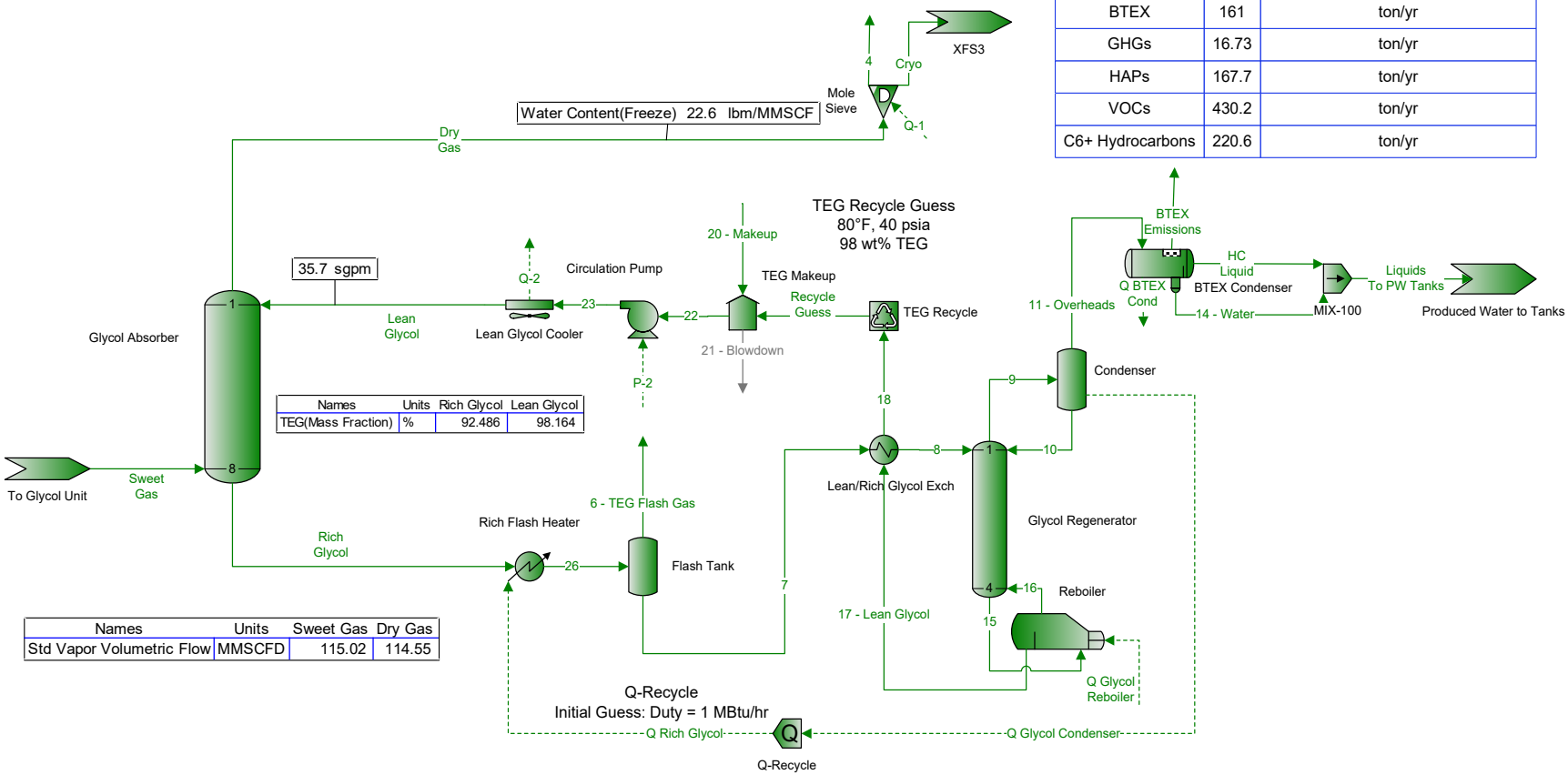
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TEG Dehydration
Plant Schematic

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	TEG Dehydration	

TEG Dehydration Unit

"BTEX Emissions" Component Sums		
BTEX	161	ton/yr
GHGs	16.73	ton/yr
HAPs	167.7	ton/yr
VOCs	430.2	ton/yr
C6+ Hydrocarbons	220.6	ton/yr



Names	Units	Q Glycol Reboiler	Lean/Rich Glycol Exch - A	Q Rich Glycol	Q Glycol Condenser	Q BTEX Cond	P-2
Energy Rate	MMBtu/h	2.0329	1.7383	0.20142	0.20133	0.79136	0.088678
Power	hp	798.95	683.19	79.16	79.125	311.02	34.852

* User Specified Values
? Extrapolated or Approximate Values

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	TEG Dehydration	

Connections

	BTEX Emissions	Cryo	Dry Gas	HC Liquid	Lean Glycol
From Block	BTEX Condenser	Mole Sieve	Glycol Absorber	BTEX Condenser	Lean Glycol Cooler
To Block	--	XFS3	Mole Sieve	MIX-100	Glycol Absorber

Stream Composition

Mole Fraction	BTEX Emissions %	Cryo %	Dry Gas %	HC Liquid %	Lean Glycol %
N2	0.0399955	3.13121	3.1297	2.89669E-05	0
CO2	0.307243	0.053541	0.0535152	0.002948	0
H2S	0.0365147	0.00073422	0.000733867	0.00128097	0
C1	9.42823	70.1352	70.1015	0.0264871	0
C2	14.3477	15.001	14.9938	0.22122	0
C3	17.7292	7.69904	7.69534	0.80092	0
iC4	2.49062	0.819095	0.818701	0.245268	0
C4	9.88261	1.86928	1.86838	1.46574	0
iC5	2.898	0.405374	0.405179	1.02472	0
C5	3.09306	0.357254	0.357082	1.38844	0
C6	0.767413	0.0633721	0.0633416	1.00573	0
nC7	0.164481	0.0183977	0.0183889	0.637129	0
Octane	0.0535146	0.00922914	0.0092247	0.544914	9.78157E-09
Water	11.5064	0	0.0477589	0.442141	7.70434
EG	1.21155E-09	1.24406E-08	1.24346E-08	4.90229E-09	0.000195115
TEG	1.10333E-08	0	0.000355699	4.61479E-05	91.2378
DEA	0	0	0	0	0
MDEA	0.00448554	6.06404E-05	6.06112E-05	0.575334	0.795314
PZ	1.82123E-05	0.000572972	0.000572696	1.21382E-05	0.260011
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	1.8742	0.0435899	0.043569	1.70135	4.30692E-08
2-Methylpentane	0.760214	0.0695804	0.0695469	0.715328	0
3-Methylpentane	0.527051	0.039693	0.0396739	0.571455	0
Methylcyclopentane	1.80025	0.0497213	0.0496974	2.7858	7.48564E-08
Benzene	16.0173	0.093925	0.0938798	44.9019	0.000187006
Cyclohexane	1.98006	0.0608891	0.0608598	4.26534	2.50717E-07
2-Methylhexane	0.0535933	0.00626679	0.00626377	0.143732	0
3-Methylhexane	0.103384	0.0101665	0.0101616	0.31636	0
Methylcyclohexane	0.504131	0.0251419	0.0251298	2.20372	1.78002E-07
2,5-Xylenol	1.48938E-07	8.26429E-09	8.26032E-09	6.96031E-05	2.2355E-05
Toluene	3.32442	0.0283961	0.0283824	26.7852	0.000643388
2-Methylheptane	0.0148728	0.00244367	0.00244249	0.106313	0
Ethylcyclohexane	0.0174325	0.00150761	0.00150688	0.23014	1.56592E-07
Ethylbenzene	0.110514	0.00210841	0.00210739	3.17947	0.000372655
o-Xylene	0.156927	0.00180672	0.00180585	3.58328	0.00116377
Nonane	0.00598851	0.00133206	0.00133142	0.118207	1.05839E-08
Decane	0.000185452	7.63398E-05	7.63031E-05	0.00996426	5.70751E-09

Mass Fraction	BTEX Emissions %	Cryo %	Dry Gas %	HC Liquid %	Lean Glycol %
N2	0.0222112	3.87714	3.87557	9.61519E-06	0
CO2	0.268055	0.104152	0.10411	0.00153732	0
H2S	0.0246702	0.00110604	0.00110559	0.000517299	0
C1	2.99845	49.7325	49.7124	0.00503496	0
C2	8.55259	19.9376	19.9295	0.0788197	0
C3	15.4981	15.006	14.9999	0.41848	0
iC4	2.86975	2.10431	2.10346	0.168917	0
C4	11.387	4.80231	4.80037	1.00946	0
iC5	4.14498	1.29276	1.29224	0.876039	0

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	TEG Dehydration	

Mass Fraction	BTEX Emissions %	Cryo %	Dry Gas %	HC Liquid %	Lean Glycol %
C5	4.42397	1.1393	1.13884	1.18699	0
C6	1.31102	0.241387	0.24129	1.02696	0
nC7	0.326728	0.0814842	0.0814513	0.756474	0
Octane	0.121183	0.0465982	0.0465794	0.737553	8.00517E-09
Water	4.10937	0	0.0380331	0.0943827	0.994406
EG	1.49074E-09	3.41303E-08	3.41166E-08	3.60542E-09	8.6765E-05
TEG	3.28466E-08	0	0.00236125	8.21172E-05	98.1643
DEA	0	0	0	0	0
MDEA	0.0105962	0.000319399	0.00031927	0.812361	0.678992
PZ	3.10988E-05	0.00218147	0.00218059	1.23888E-05	0.160458
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	2.60575	0.135127	0.135072	1.41386	2.1641E-08
2-Methylpentane	1.29872	0.265035	0.264928	0.73043	0
3-Methylpentane	0.900391	0.151192	0.151131	0.58352	0
Methylcyclopentane	3.00352	0.184961	0.184886	2.77807	4.51356E-08
Benzene	24.8029	0.324288	0.324157	41.5597	0.000104655
Cyclohexane	3.30352	0.226504	0.226412	4.25351	1.51173E-07
2-Methylhexane	0.106459	0.0277558	0.0277446	0.170656	0
3-Methylhexane	0.205364	0.0450278	0.0450096	0.37562	0
Methylcyclohexane	0.98127	0.109114	0.10907	2.56388	1.25217E-07
2,5-Xylenol	3.607E-07	4.46255E-08	4.46075E-08	0.000100754	1.95662E-05
Toluene	6.07229	0.115646	0.1156	29.2433	0.000424719
2-Methylheptane	0.0336792	0.0123381	0.0123332	0.143898	0
Ethylcyclohexane	0.038779	0.00747762	0.0074746	0.306003	1.25892E-07
Ethylbenzene	0.232592	0.00989394	0.00988995	3.99969	0.00028345
o-Xylene	0.330274	0.00847824	0.00847481	4.50768	0.000885186
Nonane	0.0152261	0.00755148	0.00754843	0.179642	9.72545E-09
Decane	0.00052309	0.000480102	0.000479908	0.0167991	5.81813E-09

Mass Flow	BTEX Emissions lb/h	Cryo lb/h	Dry Gas lb/h	HC Liquid lb/h	Lean Glycol lb/h
N2	0.0259653	10992.7	10992.7	1.57357E-05	0
CO2	0.313361	295.298	295.298	0.00251591	0
H2S	0.0288399	3.13592	3.13592	0.000846586	0
C1	3.50523	141005	141005	0.00823997	0
C2	9.9981	56528.5	56528.5	0.128992	0
C3	18.1175	42546.1	42546.1	0.684864	0
iC4	3.35478	5966.29	5966.29	0.276442	0
C4	13.3116	13615.9	13615.9	1.65204	0
iC5	4.84554	3665.33	3665.33	1.43368	0
C5	5.17168	3230.23	3230.23	1.94256	0
C6	1.5326	684.399	684.399	1.68068	0
nC7	0.38195	231.03	231.03	1.23801	0
Octane	0.141665	132.119	132.119	1.20704	1.60843E-06
Water	4.80391	0	107.878	0.154462	199.8
EG	1.7427E-09	9.67689E-05	9.67689E-05	5.90046E-09	0.0174332
TEG	3.83982E-08	0	6.69748	0.000134389	19723.6
DEA	0	0	0	0	0
MDEA	0.0123871	0.905584	0.905584	1.32947	136.426
PZ	3.6355E-05	6.18506	6.18506	2.02749E-05	32.2399
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	3.04616	383.121	383.121	2.31386	4.34818E-06
2-Methylpentane	1.51822	751.447	751.447	1.19539	0
3-Methylpentane	1.05257	428.671	428.671	0.95496	0
Methylcyclopentane	3.51116	524.414	524.414	4.54646	9.06883E-06
Benzene	28.995	919.445	919.445	68.0145	0.0210276
Cyclohexane	3.86186	642.2	642.2	6.96109	3.03742E-05
2-Methylhexane	0.124452	78.6954	78.6954	0.279287	0
3-Methylhexane	0.240074	127.666	127.666	0.614721	0

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	TEG Dehydration	

Mass Flow	BTEX Emissions lb/h	Cryo lb/h	Dry Gas lb/h	HC Liquid lb/h	Lean Glycol lb/h
Methylcyclohexane	1.14712	309.368	309.368	4.19591	2.5159E-05
2,5-Xylenol	4.21663E-07	0.000126526	0.000126526	0.00016489	0.00393131
Toluene	7.0986	327.889	327.889	47.8582	0.0853361
2-Methylheptane	0.0393715	34.982	34.982	0.235496	0
Ethylcyclohexane	0.0453332	21.2011	21.2011	0.500789	2.52947E-05
Ethylbenzene	0.271904	28.052	28.052	6.5457	0.0569518
o-Xylene	0.386095	24.0381	24.0381	7.37705	0.177855
Nonane	0.0177995	21.4105	21.4105	0.293993	1.95408E-06
Decane	0.0006115	1.36122	1.36122	0.0274925	1.169E-06

Stream Properties

Property	Units	BTEX Emissions	Cryo	Dry Gas	HC Liquid	Lean Glycol
Temperature	°F	120 *	149.708	149.708	120	120 *
Pressure	psig	1.24	986.54	986.54	1.24	986.54
Mole Fraction Vapor	%	100	100	100	0	0
Mole Fraction Light Liquid	%	0	0	0	100	100
Mole Fraction Heavy Liquid	%	0	0	0	0	0
Phase Mole Fraction	%	100	100	100	100	100
Molecular Weight	lb/lbmol	50.4434	22.6239	22.6221	84.3936	139.577
Mass Density	lb/ft^3	0.121219	4.11609	4.11575	50.5599	68.6103
Molar Flow	lbmol/h	2.31748	12532.2	12538.3	1.93919	143.952
Mass Flow	lb/h	116.901	283527	283642	163.655	20092.4
Vapor Volumetric Flow	ft^3/h	964.382	68882.6	68916.2	3.23685	292.848
Liquid Volumetric Flow	gpm	120.235	8587.96	8592.15	0.403556	36.5109
Std Vapor Volumetric Flow	MMSCFD	0.0211729	114.497	114.552	0.0177168	1.31518
Std Liquid Volumetric Flow	sgpm	0.379527	1557.92	1558.14	0.389651	35.6564
Compressibility		0.983347	0.840488	0.840493	0.00394435	0.327024
Specific Gravity		1.74168	0.781143	0.781083	0.810661	1.10007
API Gravity					36.3831	-6.68722
Enthalpy	Btu/h	-85351.7	-4.22008E+08	-4.22644E+08	-8043.22	-4.65975E+07
Mass Enthalpy	Btu/lb	-730.117	-1488.42	-1490.06	-49.1474	-2319.16
Mass Cp	Btu/(lb*°F)	0.377738	0.620144	0.620103	0.431885	0.558423
Ideal Gas CpCv Ratio		1.11727	1.21623	1.21626	1.08358	1.03689
Dynamic Viscosity	cP	0.00908691	0.0138483	0.0138501	0.425487	14.3029
Kinematic Viscosity	cSt	4.67977	0.210034	0.210079	0.525363	13.0141
Thermal Conductivity	Btu/(h*ft*°F)	0.0110547	0.0235287	0.0235284	0.072782 ?	0.113522 ?
Surface Tension	lbf/ft				0.00159439 ?	0.00294034 ?
Net Ideal Gas Heating Value	Btu/ft^3	2406.65	1186.69	1186.13	3941.8	3472.02
Net Liquid Heating Value	Btu/lb	17968.8	19895.4	19887.2	17608.3	9201.27
Gross Ideal Gas Heating Value	Btu/ft^3	2586.24	1305.58	1304.99	4145.9	3799.12
Gross Liquid Heating Value	Btu/lb	19324.3	21896.4	21887.7	18528.6	10093.4

Remarks

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Process Streams Report
All Streams
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Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	TEG Dehydration	

Connections

	Liquids To PW Tanks	Recycle Guess	Rich Glycol	Sweet Gas	4
From Block	MIX-100	TEG Recycle	Glycol Absorber	To Glycol Unit	Mole Sieve
To Block	Produced Water to Tanks	TEG Makeup	Rich Flash Heater	Glycol Absorber	--

Stream Composition

Mole Fraction	Liquids To PW Tanks %	Recycle Guess %	Rich Glycol %	Sweet Gas %	4 %
N2	1.73095E-06	0	0.0298104	3.11731	0
CO2	0.000233047	3.5078E-13	0.0120986	0.0534835	0
H2S	9.46012E-05	2.5502E-11	0.000681325	0.000741442	0
C1	0.00142175	0	2.09024	69.8461	0
C2	0.0107381	8.35744E-13	1.13321	14.9498	0
C3	0.0379487	1.11386E-11	0.880975	7.67743	0
iC4	0.0115557	5.42275E-12	0.104994	0.816971	0
C4	0.0690725	7.89043E-11	0.340139	1.866	0
iC5	0.0482115	1.44244E-10	0.0905948	0.404923	0
C5	0.0653043	2.925E-10	0.0948857	0.35709	0
C6	0.0472948	4.80161E-09	0.0273328	0.0635062	0
nC7	0.02996	2.70957E-09	0.0105963	0.018478	0
Octane	0.0256236	9.78402E-09	0.0070924	0.00929704	0
Water	95.2486	7.70432	25.9525	0.362786	99.2607
EG	1.39865E-06	0.000195164	0.000145489	4.24146E-08	0
TEG	0.00161642	91.2375	67.1055	3.11577E-09	0.739274
DEA	0	0	0	0	0
MDEA	0.0276211	0.795513	0.597948	0.000259202	0
PZ	0.0399862	0.260076	0.200007	0.000705602	0
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	0.0800885	4.308E-08	0.0481713	0.0441387	0
2-Methylpentane	0.0336385	2.07138E-09	0.0248134	0.069647	0
3-Methylpentane	0.026874	3.07047E-09	0.0172256	0.0397786	0
Methylcyclopentane	0.131034	7.48752E-08	0.0583849	0.0504007	0
Benzene	2.13388	0.000187052	0.664828	0.103824	0
Cyclohexane	0.200655	2.5078E-07	0.0767363	0.0618024	0
2-Methylhexane	0.00675879	2.90835E-10	0.0028259	0.00628197	0
3-Methylhexane	0.0148765	1.18209E-09	0.00568566	0.0102082	0
Methylcyclohexane	0.103635	1.78047E-07	0.0317177	0.0255195	0
2,5-Xylenol	3.27909E-06	2.23606E-05	1.59184E-05	0	0
Toluene	1.26314	0.00064355	0.312896	0.0331211	0
2-Methylheptane	0.00499919	8.62112E-10	0.00150871	0.00245591	0
Ethylcyclohexane	0.0108223	1.56631E-07	0.00268134	0.00154236	0
Ethylbenzene	0.149601	0.000372749	0.0335699	0.00261617	0
o-Xylene	0.168698	0.00116406	0.0386565	0.00238587	0
Nonane	0.00555843	1.05866E-08	0.0013739	0.0013473	0
Decane	0.00046855	5.70894E-09	0.000107349	7.76579E-05	0

Mass Fraction	Liquids To PW Tanks %	Recycle Guess %	Rich Glycol %	Sweet Gas %	4 %
N2	2.28905E-06	0	0.00766403	3.85946	0
CO2	0.000484166	1.10603E-13	0.00488658	0.104027	0
H2S	0.0001522	6.22692E-12	0.000213103	0.00111678	0
C1	0.00107671	0	0.307745	49.5214	0
C2	0.0152423	1.80045E-13	0.312719	19.8671	0
C3	0.0789948	3.51895E-12	0.356519	14.962	0
iC4	0.0317061	2.25813E-12	0.0560056	2.09859	0
C4	0.189519	3.28572E-11	0.181435	4.79328	0
iC5	0.164204	7.45616E-11	0.0599868	1.29116	0

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Process Streams Report
All Streams
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Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	TEG Dehydration	

Mass Fraction	Liquids To PW Tanks %	Recycle Guess %	Rich Glycol %	Sweet Gas %	4 %
C5	0.222421	1.51197E-10	0.062828	1.13864	0
C6	0.192399	2.96454E-09	0.0216168	0.241869	0
nC7	0.141718	1.9452E-09	0.00974434	0.0818298	0
Octane	0.138172	8.00718E-09	0.00743518	0.0469353	0
Water	81.0038	0.994404	4.29086	0.28885	94.1545
EG	4.0981E-06	8.67868E-05	8.28742E-05	1.16349E-07	0
TEG	0.0114591	98.1641	92.4855	2.06794E-08	5.84548
DEA	0	0	0	0	0
MDEA	0.155377	0.679162	0.653922	0.00136508	0
PZ	0.162592	0.160498	0.158107	0.0026861	0
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	0.265154	2.16464E-08	0.0310052	0.136811	0
2-Methylpentane	0.136844	1.27888E-09	0.0196243	0.265256	0
3-Methylpentane	0.109325	1.89572E-09	0.0136233	0.1515	0
Methylcyclopentane	0.520586	4.5147E-08	0.0450949	0.187465	0
Benzene	7.8685	0.000104681	0.476595	0.358421	0
Cyclohexane	0.797185	1.51211E-07	0.059269	0.229873	0
2-Methylhexane	0.0319706	2.08791E-10	0.0025987	0.0278197	0
3-Methylhexane	0.0703692	8.48623E-10	0.00522854	0.0452071	0
Methylcyclohexane	0.480355	1.25248E-07	0.0285809	0.110739	0
2,5-Xylenol	1.89105E-05	1.95711E-05	1.78471E-05	0	0
Toluene	5.4941	0.000424825	0.264585	0.134873	0
2-Methylheptane	0.0269575	7.05547E-10	0.00158162	0.0123984	0
Ethylcyclohexane	0.0573279	1.25924E-07	0.00276132	0.00764906	0
Ethylbenzene	0.74976	0.000283521	0.0327081	0.0122752	0
o-Xylene	0.845467	0.000885409	0.0376641	0.0111946	0
Nonane	0.0336537	9.7279E-09	0.00161716	0.00763695	0
Decane	0.0031471	5.81959E-09	0.000140175	0.000488331	0

Mass Flow	Liquids To PW Tanks lb/h	Recycle Guess lb/h	Rich Glycol lb/h	Sweet Gas lb/h	4 lb/h
N2	1.99968E-05	0	1.63388	10994.4	0
CO2	0.0042296	2.22173E-11	1.04176	296.34	0
H2S	0.00132959	1.25082E-09	0.045431	3.18135	0
C1	0.00940599	0	65.6077	141071	0
C2	0.133155	3.61662E-11	66.6681	56595.2	0
C3	0.690085	7.06863E-10	76.0058	42622.1	0
iC4	0.276979	4.53599E-10	11.9398	5978.23	0
C4	1.65561	6.60013E-09	38.6799	13654.5	0
iC5	1.43446	1.49774E-08	12.7885	3678.11	0
C5	1.94304	3.03714E-08	13.3942	3243.63	0
C6	1.68076	5.95498E-07	4.60845	689.007	0
nC7	1.23802	3.90739E-07	2.07738	233.107	0
Octane	1.20705	1.60843E-06	1.5851	133.704	0
Water	707.635	199.749	914.763	822.841	107.878
EG	3.58003E-05	0.0174332	0.0176678	0.000331441	0
TEG	0.100105	19718.6	19716.9	5.89089E-05	6.69748
DEA	0	0	0	0	0
MDEA	1.35734	136.426	139.409	3.88867	0
PZ	1.42037	32.2399	33.7067	7.65186	0
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	2.31634	4.34818E-06	6.60995	389.731	0
2-Methylpentane	1.19545	2.56893E-07	4.18367	755.63	0
3-Methylpentane	0.955049	3.80801E-07	2.90433	431.576	0
Methylcyclopentane	4.54775	9.06883E-06	9.61371	534.027	0
Benzene	68.7379	0.0210276	101.605	1021.03	0
Cyclohexane	6.96408	3.03742E-05	12.6355	654.836	0
2-Methylhexane	0.27929	4.19405E-08	0.554014	79.2494	0
3-Methylhexane	0.614733	1.70466E-07	1.11467	128.781	0

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Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	TEG Dehydration	

Mass Flow	Liquids To PW Tanks lb/h	Recycle Guess lb/h	Rich Glycol lb/h	Sweet Gas lb/h	4 lb/h
Methylcyclohexane	4.1963	2.5159E-05	6.09312	315.462	0
2,5-Xylenol	0.000165199	0.00393131	0.00380479	0	0
Toluene	47.9955	0.0853361	56.4065	384.21	0
2-Methylheptane	0.235496	1.41726E-07	0.337184	35.3192	0
Ethylcyclohexane	0.500807	2.52947E-05	0.588683	21.7897	0
Ethylbenzene	6.54977	0.0569518	6.973	34.9681	0
o-Xylene	7.38586	0.177855	8.02956	31.8898	0
Nonane	0.293993	1.95408E-06	0.34476	21.7553	0
Decane	0.0274925	1.169E-06	0.0298837	1.3911	0

Stream Properties

Property	Units	Liquids To PW Tanks	Recycle Guess	Rich Glycol	Sweet Gas	4
Temperature	°F	120	254.465	150.903	147.606	149.708
Pressure	psig	1.24	0.34	987.54	991.54	986.54
Mole Fraction Vapor	%	0	0	0.0027005	99.9976	0
Mole Fraction Light Liquid	%	4.7023	100	99.9973	0.0024363	100
Mole Fraction Heavy Liquid	%	95.2977	0	0	0	0
Phase Mole Fraction	%	100	100	100	100	100
Molecular Weight	lb/lbmol	21.1833	139.577	108.962	22.6266	18.9923
Mass Density	lb/ft^3	59.2447	63.6184	65.6892	4.1673	61.7623
Molar Flow	lbmol/h	41.2392	143.916	195.654	12590	6.03273
Mass Flow	lb/h	873.583	20087.3	21318.9	284868	114.575
Vapor Volumetric Flow	ft^3/h	14.7454	315.747	324.541	68358	1.8551
Liquid Volumetric Flow	gpm	1.83838	39.3659	40.4623	8522.56	0.231286
Std Vapor Volumetric Flow	MMSCFD	0.376769	1.31485	1.78753	115.024	0.0551162
Std Liquid Volumetric Flow	sgpm	1.8102	35.6475	38.997	1561.48	0.227509
Compressibility		0.000844925	0.00395061	0.253405	0.837301	0.0470223
Specific Gravity		0.949909	1.02004			0.990277
API Gravity		14.9127	-6.54655			8.59086
Enthalpy	Btu/h	-4.80468E+06	-4.5051E+07	-5.14867E+07	-4.27533E+08	-743572
Mass Enthalpy	Btu/lb	-5499.96	-2242.75	-2415.08	-1500.81	-6489.8
Mass Cp	Btu/(lb*°F)	0.875333	0.615221	0.597575	0.621416	0.972641
Ideal Gas CpCv Ratio		1.28688	1.03185	1.04573	1.21688	1.306
Dynamic Viscosity	cP	0.542076	2.257			0.500151
Kinematic Viscosity	cSt	0.571202	2.21477			0.505542
Thermal Conductivity	Btu/(h*ft*°F)	0.301407 ?	0.112585 ?			0.355857
Surface Tension	lbf/ft	0.00398294 ?	0.00250821 ?			0.00439595
Net Ideal Gas Heating Value	Btu/ft^3	187.706	3472.02	2686.42	1183.31	27.8351
Net Liquid Heating Value	Btu/lb	2482.06	9201.27	9093.74	19833.1	-455.071
Gross Ideal Gas Heating Value	Btu/ft^3	245.215	3799.12	2947.31	1301.99	80.2098
Gross Liquid Heating Value	Btu/lb	3515.46	10093.4	10005.2	21830.4	594.708

Remarks

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All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	TEG Dehydration	

Connections

	6 - TEG Flash Gas	7	8	9	10
From Block	Flash Tank	Flash Tank	Lean/Rich Glycol Exch	Glycol Regenerator	Condenser
To Block	--	Lean/Rich Glycol Exch	Glycol Regenerator	Condenser	Glycol Regenerator

Stream Composition

Mole Fraction	6 - TEG Flash Gas %	7 %	8 %	9 %	10 %
N2	0.701705	0.000494789	0.000494789	0.00177471	3.48158E-08
CO2	0.201167	0.00384928	0.00384928	0.0138075	5.77594E-06
H2S	0.00547457	0.000472189	0.000472189	0.00169404	2.42565E-06
C1	47.3188	0.116861	0.116861	0.419157	1.73318E-05
C2	22.9866	0.179723	0.179723	0.644632	3.50616E-05
C3	15.858	0.227508	0.227508	0.81603	4.17047E-05
iC4	1.7475	0.03333	0.03333	0.119548	3.59256E-06
C4	4.98772	0.137359	0.137359	0.492682	3.00578E-05
iC5	1.10284	0.0464291	0.0464291	0.166532	6.8091E-06
C5	1.06404	0.0526003	0.0526003	0.188667	7.66036E-06
C6	0.197916	0.01989	0.01989	0.0713416	2.34866E-06
nC7	0.0558072	0.00862365	0.00862365	0.0309313	7.22086E-07
Octane	0.025299	0.00629802	0.00629802	0.0225897	4.48731E-07
Water	1.75687	27.0082	27.0082	91.7458	96.5095
EG	9.56375E-08	0.000151832	0.000151832	1.39609E-05	7.71438E-05
TEG	0.00129134	70.0334	70.0334	0.405602	2.42596
DEA	0	0	0	0	0
MDEA	0.000186167	0.624029	0.624029	0.0246832	0.0161479
PZ	0.00340757	0.208585	0.208585	0.204604	1.03832
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	0.21745	0.0407855	0.0407855	0.146292	2.21601E-05
2-Methylpentane	0.208545	0.016797	0.016797	0.0602475	1.64637E-06
3-Methylpentane	0.127213	0.0124267	0.0124267	0.0445724	2.02199E-06
Methylcyclopentane	0.225855	0.0510779	0.0510779	0.183209	1.95443E-05
Benzene	0.602693	0.667539	0.667539	2.3948	0.00597107
Cyclohexane	0.262857	0.0686156	0.0686156	0.246116	4.25672E-05
2-Methylhexane	0.0183343	0.00214925	0.00214925	0.00770891	1.27066E-07
3-Methylhexane	0.0317046	0.00455042	0.00455042	0.0163214	4.85232E-07
Methylcyclohexane	0.0933444	0.0290289	0.0290289	0.104122	1.12525E-05
2,5-Xylenol	3.59368E-08	1.66113E-05	1.66113E-05	2.68818E-06	5.66366E-07
Toluene	0.1628	0.319445	0.319445	1.14451	0.00301038
2-Methylheptane	0.00666944	0.00128354	0.00128354	0.00460378	6.8578E-08
Ethylcyclohexane	0.00463216	0.00259622	0.00259622	0.00931186	1.25155E-06
Ethylbenzene	0.010861	0.0345607	0.0345607	0.122981	0.000276891
o-Xylene	0.00916624	0.0399432	0.0399432	0.140138	0.000468627
Nonane	0.00314225	0.00129674	0.00129674	0.0046511	4.34388E-08
Decane	0.000152817	0.000105365	0.000105365	0.000377906	2.23888E-09

Mass Fraction	6 - TEG Flash Gas %	7 %	8 %	9 %	10 %
N2	0.666532	0.000123284	0.000123284	0.00219896	4.44299E-08
CO2	0.300196	0.00150676	0.00150676	0.0268773	1.15798E-05
H2S	0.00632648	0.000143135	0.000143135	0.00255364	3.76592E-06
C1	25.7398	0.0166747	0.0166747	0.297421	1.26662E-05
C2	23.4366	0.0480664	0.0480664	0.857345	4.80269E-05
C3	23.7107	0.0892302	0.0892302	1.59157	8.37748E-05
iC4	3.44397	0.0172304	0.0172304	0.307332	9.51216E-06
C4	9.82981	0.0710098	0.0710098	1.26658	7.95852E-05
iC5	2.69801	0.0297946	0.0297946	0.531436	2.23796E-05

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	TEG Dehydration	

Mass Fraction	6 - TEG Flash Gas %	7 %	8 %	9 %	10 %
C5	2.60308	0.0337548	0.0337548	0.602073	2.51774E-05
C6	0.578315	0.0152454	0.0152454	0.271925	9.22011E-06
nC7	0.189613	0.00768575	0.00768575	0.137087	3.29608E-06
Octane	0.0979894	0.00639879	0.00639879	0.114132	2.33504E-06
Water	1.0732	4.32769	4.32769	73.1056	79.2035
EG	2.01278E-07	8.38204E-05	8.38204E-05	3.83269E-05	0.000218123
TEG	0.00657559	93.544	93.544	2.69411	16.5962
DEA	0	0	0	0	0
MDEA	0.000752217	0.661398	0.661398	0.130096	0.0876574
PZ	0.00995242	0.159803	0.159803	0.779507	4.07426
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	0.517109	0.0254417	0.0254417	0.453802	7.07989E-05
2-Methylpentane	0.609373	0.0128746	0.0128746	0.229639	6.46312E-06
3-Methylpentane	0.37172	0.00952488	0.00952488	0.169892	7.93772E-06
Methylcyclopentane	0.644516	0.0382345	0.0382345	0.681981	7.49302E-05
Benzene	1.5963	0.46378	0.46378	8.27388	0.0212472
Cyclohexane	0.750108	0.0513624	0.0513624	0.916149	0.000163197
2-Methylhexane	0.0622934	0.0019155	0.0019155	0.0341659	5.80013E-07
3-Methylhexane	0.107721	0.00405552	0.00405552	0.0723367	2.21492E-06
Methylcyclohexane	0.31077	0.0253513	0.0253513	0.452184	5.03304E-05
2,5-Xylenol	1.48862E-07	1.80496E-05	1.80496E-05	1.45254E-05	3.15192E-06
Toluene	0.508623	0.261792	0.261792	4.66427	0.0126356
2-Methylheptane	0.0258324	0.00130407	0.00130407	0.0232602	3.56855E-07
Ethylcyclohexane	0.0176249	0.00259121	0.00259121	0.046217	6.39769E-06
Ethylbenzene	0.039098	0.032635	0.032635	0.577487	0.00133913
o-Xylene	0.0329969	0.0377175	0.0377175	0.658052	0.00226643
Nonane	0.0136652	0.00147927	0.00147927	0.0263848	2.53797E-07
Decane	0.000737262	0.000133341	0.000133341	0.00237825	1.45115E-08

Mass Flow	6 - TEG Flash Gas lb/h	7 lb/h	8 lb/h	9 lb/h	10 lb/h
N2	1.6079	0.0259853	0.0259853	0.0259853	8.49624E-08
CO2	0.724172	0.31759	0.31759	0.317612	2.21439E-05
H2S	0.0152616	0.0301695	0.0301695	0.0301767	7.2015E-06
C1	62.093	3.51464	3.51464	3.51466	2.42214E-05
C2	56.5369	10.1313	10.1313	10.1313	9.18408E-05
C3	57.1982	18.8076	18.8076	18.8078	0.000160201
iC4	8.308	3.63176	3.63176	3.63178	1.81899E-05
C4	23.7128	14.9672	14.9672	14.9673	0.000152189
iC5	6.50851	6.28	6.28	6.28004	4.2796E-05
C5	6.2795	7.11472	7.11472	7.11477	4.81463E-05
C6	1.39509	3.21336	3.21336	3.21338	1.76314E-05
nC7	0.457409	1.61997	1.61997	1.61998	6.30303E-06
Octane	0.236383	1.34871	1.34871	1.34872	4.46524E-06
Water	2.58892	912.174	912.174	863.898	151.459
EG	4.85549E-07	0.0176673	0.0176673	0.000452914	0.000417111
TEG	0.0158625	19716.8	19716.8	31.8367	31.7366
DEA	0	0	0	0	0
MDEA	0.0018146	139.407	139.407	1.53736	0.167625
PZ	0.0240085	33.6827	33.6827	9.21153	7.79112
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	1.24744	5.36251	5.36251	5.36264	0.000135387
2-Methylpentane	1.47001	2.71366	2.71366	2.71368	1.23593E-05
3-Methylpentane	0.896713	2.00762	2.00762	2.00763	1.51791E-05
Methylcyclopentane	1.55479	8.05893	8.05893	8.05906	0.000143287
Benzene	3.8508	97.7539	97.7539	97.7735	0.0406306
Cyclohexane	1.80951	10.826	10.826	10.8262	0.000312078
2-Methylhexane	0.150272	0.403742	0.403742	0.403743	1.10915E-06
3-Methylhexane	0.259858	0.854807	0.854807	0.854811	4.23555E-06

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	TEG Dehydration	

Mass Flow	6 - TEG Flash Gas lb/h	7 lb/h	8 lb/h	9 lb/h	10 lb/h
Methylcyclohexane	0.749681	5.34344	5.34344	5.34351	9.62458E-05
2,5-Xylenol	3.59106E-07	0.00380443	0.00380443	0.000171648	6.02734E-06
Toluene	1.22697	55.1795	55.1795	55.1183	0.0241628
2-Methylheptane	0.0623164	0.274868	0.274868	0.274868	6.82407E-07
Ethylcyclohexane	0.0425171	0.546166	0.546166	0.546153	1.22342E-05
Ethylbenzene	0.0943173	6.87868	6.87868	6.82424	0.00256079
o-Xylene	0.0795996	7.94996	7.94996	7.77629	0.00433404
Nonane	0.0329651	0.311794	0.311794	0.311793	4.8533E-07
Decane	0.00177852	0.0281052	0.0281052	0.028104	2.775E-08

Stream Properties

Property	Units	6 - TEG Flash Gas	7	8	9	10
Temperature	°F	169.641	169.641	300 *	287.609	208.593
Pressure	psig	61.54 *	61.54	60.54	1.24	1.24
Mole Fraction Vapor	%	100	0	0.295311	100	0
Mole Fraction Light Liquid	%	0	100	99.7047	0	100
Mole Fraction Heavy Liquid	%	0	0	0	0	0
Phase Mole Fraction	%	100	100	100	100	100
Molecular Weight	lb/lbmol	29.4916	112.43	112.43	22.6087	21.9516
Mass Density	lb/ft^3	0.335208	66.246	52.5131	0.0417178	61.3644
Molar Flow	lbmol/h	8.17972	187.474	187.474	52.268	8.71133
Mass Flow	lb/h	241.233	21077.6	21077.6	1181.71	191.228
Vapor Volumetric Flow	ft^3/h	719.652	318.172	401.379	28326.4	3.11627
Liquid Volumetric Flow	gpm	89.7228	39.6682	50.042	3531.6	0.388522
Std Vapor Volumetric Flow	MMSCFD	0.0747314	1.7128	1.7128	0.47753	0.0795883
Std Liquid Volumetric Flow	sgpm	1.15989	37.8371	37.8371	2.57078	0.381047
Compressibility		0.97705	0.0188475	0.0194338	0.993405	0.000733258
Specific Gravity		1.01827	1.06217		0.780621	0.983897
API Gravity			-4.86467			6.06115
Enthalpy	Btu/h	-305803	-5.09795E+07	-4.92411E+07	-4.9846E+06	-1.08727E+06
Mass Enthalpy	Btu/lb	-1267.66	-2418.65	-2336.18	-4218.12	-5685.71
Mass Cp	Btu/(lb*°F)	0.487426	0.605668	0.656008	0.454024	0.984775
Ideal Gas CpCv Ratio		1.16344	1.04337	1.03853	1.24139	1.24377
Dynamic Viscosity	cP	0.011292	5.15076		0.0140362	0.444013
Kinematic Viscosity	cSt	2.10298	4.8539		21.0042	0.451708
Thermal Conductivity	Btu/(h*ft*°F)	0.018322	0.117042 ?		0.0168298	0.304153 ?
Surface Tension	lbf/ft		0.00281739 ?			0.00376015 ?
Net Ideal Gas Heating Value	Btu/ft^3	1541.2	2736.39	2736.39	275.679	125.239
Net Liquid Heating Value	Btu/lb	19769.5	8971.56	8971.56	3819.38	1278.81
Gross Ideal Gas Heating Value	Btu/ft^3	1685.38	3002.36	3002.36	338.946	184.821
Gross Liquid Heating Value	Btu/lb	21631.2	9872.11	9872.11	4884.61	2312.05

Remarks

ProMax 6.0.24302.0
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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	TEG Dehydration	

Connections

	11 - Overheads	14 - Water	15	16	17 - Lean Glycol
From Block	Condenser	BTEX Condenser	Glycol Regenerator	Reboiler	Reboiler
To Block	BTEX Condenser	MIX-100	Reboiler	Glycol Regenerator	Lean/Rich Glycol Exch

Stream Composition

Mole Fraction	11 - Overheads %	14 - Water %	15 %	16 %	17 - Lean Glycol %
N2	0.00212964	3.87038E-07	0	0	0
CO2	0.0165679	9.90817E-05	3.67863E-11	1.63528E-10	3.50897E-13
H2S	0.00203237	3.60617E-05	8.9699E-10	3.92847E-09	2.55066E-11
C1	0.502985	0.000184944	2.83645E-12	1.26732E-11	8.58828E-15
C2	0.773552	0.000352215	1.36455E-10	6.08209E-10	8.36299E-13
C3	0.979228	0.000301255	1.20828E-09	5.37255E-09	1.11476E-11
iC4	0.143457	2.35258E-05	4.64785E-10	2.06267E-09	5.42756E-12
C4	0.591212	0.000156354	5.62238E-09	2.49053E-08	7.8977E-11
iC5	0.199837	2.75248E-05	7.50111E-09	3.30917E-08	1.44383E-10
C5	0.226399	1.67138E-05	1.39648E-08	6.15232E-08	2.92788E-10
C6	0.0856095	2.58267E-06	1.07578E-07	4.65075E-07	4.80587E-09
nC7	0.0371174	3.51539E-07	6.58335E-08	2.85402E-07	2.71248E-09
Octane	0.0271075	5.70256E-08	1.8747E-07	8.05516E-07	9.79507E-09
Water	90.793	99.9266	26.605	92.3537	7.70371
EG	1.3243E-06	1.46743E-06	0.000180773	0.000122994	0.000197384
TEG	0.00153042	0.0016939	72.3136	6.51744	91.2285
DEA	0	0	0	0	0
MDEA	0.0263902	0.000595213	0.676045	0.227802	0.804905
PZ	0.0378597	0.0419587	0.392584	0.852892	0.260255
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	0.175546	9.0067E-05	8.10534E-07	3.48001E-06	4.31184E-08
2-Methylpentane	0.0722967	1.75178E-06	5.16211E-08	2.23975E-07	2.07316E-09
3-Methylpentane	0.0534864	2.62162E-06	6.85261E-08	2.96206E-07	3.07313E-09
Methylcyclopentane	0.219846	3.92574E-05	1.39573E-06	5.99008E-06	7.49493E-08
Benzene	2.87256	0.0235638	0.00162243	0.00661493	0.000187191
Cyclohexane	0.29533	9.02638E-05	3.8771E-06	1.64904E-05	2.51052E-07
2-Methylhexane	0.00925067	6.31584E-08	8.00148E-09	3.48221E-08	2.91139E-10
3-Methylhexane	0.0195856	3.14891E-07	2.95077E-08	1.28035E-07	1.18333E-09
Methylcyclohexane	0.124944	9.96696E-06	2.54921E-06	1.07967E-05	1.7825E-07
2,5-Xylenol	3.11255E-06	6.4509E-09	1.9644E-05	1.59822E-05	2.06967E-05
Toluene	1.37281	0.0037926	0.00415027	0.0163467	0.000644074
2-Methylheptane	0.00552452	1.02412E-08	1.87182E-08	8.08278E-08	8.6306E-10
Ethylcyclohexane	0.011174	4.10483E-07	1.54247E-06	6.36254E-06	1.5681E-07
Ethylbenzene	0.147522	9.76962E-05	0.00183175	0.00690582	0.000373065
o-Xylene	0.168072	0.000211122	0.00493959	0.0180695	0.00116504
Nonane	0.00558132	3.83638E-09	1.51835E-07	6.43127E-07	1.05989E-08
Decane	0.000453487	4.05549E-11	6.02854E-08	2.50108E-07	5.71554E-09

Mass Fraction	11 - Overheads %	14 - Water %	15 %	16 %	17 - Lean Glycol %
N2	0.00262349	6.00203E-07	0	0	0
CO2	0.0320641	0.000241389	1.41338E-11	2.61909E-10	1.10642E-13
H2S	0.00304593	6.80355E-05	2.66885E-10	4.87243E-09	6.22814E-12
C1	0.35484	0.000164244	3.97256E-13	7.39895E-12	9.87124E-16
C2	1.02286	0.00058628	3.58207E-11	6.65555E-10	1.80167E-13
C3	1.89883	0.000735372	4.65146E-10	8.6216E-09	3.52186E-12
iC4	0.366665	7.56945E-05	2.35841E-10	4.36299E-09	2.26017E-12
C4	1.5111	0.000503069	2.85291E-09	5.26799E-08	3.2888E-11
iC5	0.634033	0.000109934	4.72476E-09	8.68879E-08	7.46343E-11

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Process Streams Report
All Streams
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Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	TEG Dehydration	

Mass Fraction	11 - Overheads %	14 - Water %	15 %	16 %	17 - Lean Glycol %
C5	0.718307	6.67549E-05	8.79606E-09	1.6154E-07	1.51348E-10
C6	0.324423	1.23205E-05	8.09343E-08	1.45854E-06	2.96722E-09
nC7	0.163554	1.94997E-06	5.75902E-08	1.04075E-06	1.94732E-09
Octane	0.136167	3.60597E-07	1.86953E-07	3.34858E-06	8.01635E-09
Water	71.9283	99.6553	4.18437	60.549	0.994341
EG	3.6146E-06	5.04198E-06	9.79549E-05	0.000277819	8.77753E-05
TEG	0.0101067	0.0140818	94.8063	35.6189	98.156
DEA	0	0	0	0	0
MDEA	0.138289	0.00392635	0.703299	0.98789	0.687192
PZ	0.143406	0.20007	0.295216	2.67355	0.160611
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	0.541402	0.000349676	4.96271E-07	8.88207E-06	2.1666E-08
2-Methylpentane	0.273973	8.35681E-06	3.88361E-08	7.02415E-07	1.28E-09
3-Methylpentane	0.202691	1.25063E-05	5.15543E-08	9.28943E-07	1.8974E-09
Methylcyclopentane	0.813634	0.000182895	1.02548E-06	1.83463E-05	4.51924E-08
Benzene	9.86717	0.101892	0.00110639	0.0188042	0.00010476
Cyclohexane	1.09299	0.000420528	2.84862E-06	5.05063E-05	1.51377E-07
2-Methylhexane	0.040762	3.50337E-07	6.99958E-09	1.26982E-07	2.09012E-10
3-Methylhexane	0.0863019	1.74668E-06	2.58129E-08	4.66891E-07	8.49526E-10
Methylcyclohexane	0.539475	5.41739E-05	2.18515E-06	3.8579E-05	1.25393E-07
2,5-Xylenol	1.67212E-05	4.36257E-08	2.09508E-05	7.10547E-05	1.81151E-05
Toluene	5.56234	0.0193444	0.00333843	0.0548127	0.000425178
2-Methylheptane	0.0277508	6.47595E-08	1.86665E-08	3.36006E-07	7.06334E-10
Ethylcyclohexane	0.0551387	2.54985E-06	1.51107E-06	2.59827E-05	1.2607E-07
Ethylbenzene	0.688721	0.000574165	0.00169775	0.0266814	0.000283766
o-Xylene	0.784662	0.00124077	0.00457823	0.0698133	0.00088617
Nonane	0.0314788	2.7238E-08	1.70008E-07	3.00181E-06	9.73931E-09
Decane	0.0028374	3.19426E-10	7.48836E-08	1.29506E-06	5.8264E-09

Mass Flow	11 - Overheads lb/h	14 - Water lb/h	15 lb/h	16 lb/h	17 - Lean Glycol lb/h
N2	0.0259853	4.26101E-06	0	0	0
CO2	0.31759	0.00171369	2.99975E-09	2.97752E-09	2.22248E-11
H2S	0.0301695	0.000483003	5.66436E-08	5.53926E-08	1.25106E-09
C1	3.51464	0.00116602	8.43137E-11	8.41154E-11	1.98285E-13
C2	10.1313	0.00416217	7.60259E-09	7.5664E-09	3.61905E-11
C3	18.8076	0.00522061	9.87226E-08	9.80152E-08	7.07442E-10
iC4	3.63176	0.000537377	5.00549E-08	4.96009E-08	4.54004E-10
C4	14.9672	0.00357143	6.05501E-07	5.98894E-07	6.60626E-09
iC5	6.28	0.000780452	1.00278E-06	9.87791E-07	1.49919E-08
C5	7.11472	0.000473912	1.86688E-06	1.83647E-06	3.04015E-08
C6	3.21336	8.7467E-05	1.71775E-05	1.65815E-05	5.96029E-07
nC7	1.61997	1.38434E-05	1.22229E-05	1.18318E-05	3.91161E-07
Octane	1.34871	2.55998E-06	3.96788E-05	3.80685E-05	1.61026E-06
Water	712.439	707.481	888.09	688.356	199.735
EG	3.5802E-05	3.57944E-05	0.0207899	0.00315841	0.0176315
TEG	0.100105	0.0999707	20121.7	404.936	19716.7
DEA	0	0	0	0	0
MDEA	1.36973	0.0278742	149.268	11.2309	138.037
PZ	1.42041	1.42035	62.6567	30.3944	32.2622
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	5.3625	0.00248245	0.000105328	0.000100976	4.35208E-06
2-Methylpentane	2.71366	5.93274E-05	8.24257E-06	7.98545E-06	2.57116E-07
3-Methylpentane	2.00762	8.87861E-05	1.09419E-05	1.05607E-05	3.81133E-07
Methylcyclopentane	8.05892	0.00129843	0.000217648	0.000208571	9.07786E-06
Benzene	97.7328	0.723361	0.23482	0.213776	0.0210434
Cyclohexane	10.8259	0.00298544	0.000604592	0.000574184	3.04074E-05
2-Methylhexane	0.403742	2.48714E-06	1.48559E-06	1.44361E-06	4.19846E-08
3-Methylhexane	0.854807	1.24002E-05	5.47852E-06	5.30788E-06	1.70645E-07

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	TEG Dehydration	

Mass Flow	11 - Overheads lb/h	14 - Water lb/h	15 lb/h	16 lb/h	17 - Lean Glycol lb/h
Methylcyclohexane	5.34342	0.000384596	0.000463776	0.000438588	2.51879E-05
2,5-Xylenol	0.000165621	3.09711E-07	0.0044466	0.000807789	0.00363881
Toluene	55.0941	0.137331	0.708548	0.623142	0.0854062
2-Methylheptane	0.274868	4.59746E-07	3.96179E-06	3.8199E-06	1.41882E-07
Ethylcyclohexane	0.54614	1.81021E-05	0.000320709	0.000295386	2.53238E-05
Ethylbenzene	6.82168	0.00407616	0.36033	0.303329	0.0570005
o-Xylene	7.77195	0.0088086	0.971683	0.793677	0.178006
Nonane	0.311792	1.9337E-07	3.60826E-05	3.41262E-05	1.95635E-06
Decane	0.028104	2.2677E-09	1.58933E-05	1.47229E-05	1.17036E-06

Stream Properties

Property	Units	11 - Overheads	14 - Water	15	16	17 - Lean Glycol
Temperature	°F	208.593	120	295.593	390	390
Pressure	psig	1.24	1.24	1.34	1.34	1.34
Mole Fraction Vapor	%	100	0	0	100	0
Mole Fraction Light Liquid	%	0	100	100	0	100
Mole Fraction Heavy Liquid	%	0	0	0	0	0
Phase Mole Fraction	%	100	100	100	100	100
Molecular Weight	lb/lbmol	22.7402	18.0643	114.545	27.4782	139.574
Mass Density	lb/ft^3	0.0470188	61.6873	62.2243	0.0449012	58.3914
Molar Flow	lbmol/h	43.5566	39.3	185.29	41.373	143.917
Mass Flow	lb/h	990.485	709.928	21224	1136.86	20087.1
Vapor Volumetric Flow	ft^3/h	21065.7	11.5085	341.089	25319.1	344.009
Liquid Volumetric Flow	gpm	2626.38	1.43483	42.5253	3156.67	42.8894
Std Vapor Volumetric Flow	MMSCFD	0.397941	0.359052	1.69285	0.377992	1.31485
Std Liquid Volumetric Flow	sgpm	2.18973	1.42055	37.8504	2.20296	35.6474
Compressibility		0.991353	0.000691989	0.00336136	0.993296	0.00387976
Specific Gravity		0.785158	0.989074	0.997684	0.948751	0.936228
API Gravity			9.96329	-5.76545		-6.546
Enthalpy	Btu/h	-4.09867E+06	-4.79663E+06	-4.99994E+07	-4.65557E+06	-4.33109E+07
Mass Enthalpy	Btu/lb	-4138.04	-6756.5	-2355.79	-4095.13	-2156.15
Mass Cp	Btu/(lb*°F)	0.435018	0.977559	0.654467	0.496192	0.660569
Ideal Gas CpCv Ratio		1.25324	1.326	1.03781	1.1714	1.02899
Dynamic Viscosity	cP	0.0125092	0.574867	1.47851	0.015639	0.794583
Kinematic Viscosity	cSt	16.6088	0.581769	1.48335	21.7436	0.849513
Thermal Conductivity	Btu/(h*ft*°F)	0.0144891	0.365709 ?	0.115795 ?	0.018592	0.106878 ?
Surface Tension	lbf/ft		0.00465474 ?	0.00244709 ?		0.00203551 ?
Net Ideal Gas Heating Value	Btu/ft^3	305.768	2.46718	2759.9	282.747	3472.02
Net Liquid Heating Value	Btu/lb	4309.87	-1004.9	8878.49	3172.56	9201.42
Gross Ideal Gas Heating Value	Btu/ft^3	369.771	52.7425	3030.07	354.907	3799.12
Gross Liquid Heating Value	Btu/lb	5381.29	54.5644	9776.38	4172.24	10093.5

Remarks

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	TEG Dehydration	

Connections

	18	20 - Makeup	21 - Blowdown	22	23
From Block	Lean/Rich Glycol Exch	--	TEG Makeup	TEG Makeup	Circulation Pump
To Block	TEG Recycle	TEG Makeup	--	Circulation Pump	Lean Glycol Cooler

Stream Composition

Mole Fraction	18 %	20 - Makeup %	21 - Blowdown %	22 %	23 %
N2	0	0	0	0	0
CO2	3.50897E-13	0	3.5078E-13	0	0
H2S	2.55066E-11	0	2.5502E-11	0	0
C1	8.58828E-15	0	0	0	0
C2	8.36299E-13	0	8.35744E-13	0	0
C3	1.11476E-11	0	1.11386E-11	0	0
iC4	5.42756E-12	0	5.42275E-12	0	0
C4	7.8977E-11	0	7.89043E-11	0	0
iC5	1.44383E-10	0	1.44244E-10	0	0
C5	2.92788E-10	0	2.925E-10	0	0
C6	4.80587E-09	0	4.80161E-09	0	0
nC7	2.71248E-09	0	2.70957E-09	0	0
Octane	9.79507E-09	0	9.78402E-09	9.78157E-09	9.78157E-09
Water	7.70371	7.76615	7.70432	7.70434	7.70434
EG	0.000197384	0	0.000195164	0.000195115	0.000195115
TEG	91.2285	92.2338	91.2375	91.2378	91.2378
DEA	0	0	0	0	0
MDEA	0.804905	0	0.795513	0.795314	0.795314
PZ	0.260255	0	0.260076	0.260011	0.260011
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	4.31184E-08	0	4.308E-08	4.30692E-08	4.30692E-08
2-Methylpentane	2.07316E-09	0	2.07138E-09	0	0
3-Methylpentane	3.07313E-09	0	3.07047E-09	0	0
Methylcyclopentane	7.49493E-08	0	7.48752E-08	7.48564E-08	7.48564E-08
Benzene	0.000187191	0	0.000187052	0.000187006	0.000187006
Cyclohexane	2.51052E-07	0	2.5078E-07	2.50717E-07	2.50717E-07
2-Methylhexane	2.91139E-10	0	2.90835E-10	0	0
3-Methylhexane	1.18333E-09	0	1.18209E-09	0	0
Methylcyclohexane	1.7825E-07	0	1.78047E-07	1.78002E-07	1.78002E-07
2,5-Xylenol	2.06967E-05	0	2.23606E-05	2.2355E-05	2.2355E-05
Toluene	0.000644074	0	0.00064355	0.000643388	0.000643388
2-Methylheptane	8.6306E-10	0	8.62112E-10	0	0
Ethylcyclohexane	1.5681E-07	0	1.56631E-07	1.56592E-07	1.56592E-07
Ethylbenzene	0.000373065	0	0.000372749	0.000372655	0.000372655
o-Xylene	0.00116504	0	0.00116406	0.00116377	0.00116377
Nonane	1.05989E-08	0	1.05866E-08	1.05839E-08	1.05839E-08
Decane	5.71554E-09	0	5.70894E-09	5.70751E-09	5.70751E-09

Mass Fraction	18 %	20 - Makeup %	21 - Blowdown %	22 %	23 %
N2	0	0	0	0	0
CO2	1.10642E-13	0	1.10603E-13	0	0
H2S	6.22814E-12	0	6.22692E-12	0	0
C1	9.87124E-16	0	0	0	0
C2	1.80167E-13	0	1.80045E-13	0	0
C3	3.52186E-12	0	3.51895E-12	0	0
iC4	2.26017E-12	0	2.25813E-12	0	0
C4	3.2888E-11	0	3.28572E-11	0	0
iC5	7.46343E-11	0	7.45616E-11	0	0

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Process Streams Report
All Streams
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Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	TEG Dehydration	

Mass Fraction	18 %	20 - Makeup %	21 - Blowdown %	22 %	23 %
C5	1.51348E-10	0	1.51197E-10	0	0
C6	2.96722E-09	0	2.96454E-09	0	0
nC7	1.94732E-09	0	1.9452E-09	0	0
Octane	8.01635E-09	0	8.00718E-09	8.00517E-09	8.00517E-09
Water	0.994341	1	0.994404	0.994406	0.994406
EG	8.77753E-05	0	8.67868E-05	8.6765E-05	8.6765E-05
TEG	98.156	99	98.1641	98.1643	98.1643
DEA	0	0	0	0	0
MDEA	0.687192	0	0.679162	0.678992	0.678992
PZ	0.160611	0	0.160498	0.160458	0.160458
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	2.1666E-08	0	2.16464E-08	2.1641E-08	2.1641E-08
2-Methylpentane	1.28E-09	0	1.27888E-09	0	0
3-Methylpentane	1.8974E-09	0	1.89572E-09	0	0
Methylcyclopentane	4.51924E-08	0	4.5147E-08	4.51356E-08	4.51356E-08
Benzene	0.00010476	0	0.000104681	0.000104655	0.000104655
Cyclohexane	1.51377E-07	0	1.51211E-07	1.51173E-07	1.51173E-07
2-Methylhexane	2.09012E-10	0	2.08791E-10	0	0
3-Methylhexane	8.49526E-10	0	8.48623E-10	0	0
Methylcyclohexane	1.25393E-07	0	1.25248E-07	1.25217E-07	1.25217E-07
2,5-Xylenol	1.81151E-05	0	1.95711E-05	1.95662E-05	1.95662E-05
Toluene	0.000425178	0	0.000424825	0.000424719	0.000424719
2-Methylheptane	7.06334E-10	0	7.05547E-10	0	0
Ethylcyclohexane	1.2607E-07	0	1.25924E-07	1.25892E-07	1.25892E-07
Ethylbenzene	0.000283766	0	0.000283521	0.00028345	0.00028345
o-Xylene	0.00088617	0	0.000885409	0.000885186	0.000885186
Nonane	9.73931E-09	0	9.7279E-09	9.72545E-09	9.72545E-09
Decane	5.8264E-09	0	5.81959E-09	5.81813E-09	5.81813E-09

Mass Flow	18 lb/h	20 - Makeup lb/h	21 - Blowdown lb/h	22 lb/h	23 lb/h
N2	0	0	0	0	0
CO2	2.22248E-11	0	0	0	0
H2S	1.25106E-09	0	0	0	0
C1	1.98285E-13	0	0	0	0
C2	3.61905E-11	0	0	0	0
C3	7.07442E-10	0	0	0	0
iC4	4.54004E-10	0	0	0	0
C4	6.60626E-09	0	0	0	0
iC5	1.49919E-08	0	0	0	0
C5	3.04015E-08	0	0	0	0
C6	5.96029E-07	0	0	0	0
nC7	3.91161E-07	0	0	0	0
Octane	1.61026E-06	0	0	1.60843E-06	1.60843E-06
Water	199.735	0.0505136	0	199.8	199.8
EG	0.0176315	0	0	0.0174332	0.0174332
TEG	19716.7	5.00085	0	19723.6	19723.6
DEA	0	0	0	0	0
MDEA	138.037	0	0	136.426	136.426
PZ	32.2622	0	0	32.2399	32.2399
2,2-Dimethylpropane	0	0	0	0	0
Cyclopentane	4.35208E-06	0	0	4.34818E-06	4.34818E-06
2-Methylpentane	2.57116E-07	0	0	0	0
3-Methylpentane	3.81133E-07	0	0	0	0
Methylcyclopentane	9.07786E-06	0	0	9.06883E-06	9.06883E-06
Benzene	0.0210434	0	0	0.0210276	0.0210276
Cyclohexane	3.04074E-05	0	0	3.03742E-05	3.03742E-05
2-Methylhexane	4.19846E-08	0	0	0	0
3-Methylhexane	1.70645E-07	0	0	0	0

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	TEG Dehydration	

Mass Flow	18 lb/h	20 - Makeup lb/h	21 - Blowdown lb/h	22 lb/h	23 lb/h
Methylcyclohexane	2.51879E-05	0	0	2.5159E-05	2.5159E-05
2,5-Xylenol	0.00363881	0	0	0.00393131	0.00393131
Toluene	0.0854062	0	0	0.0853361	0.0853361
2-Methylheptane	1.41882E-07	0	0	0	0
Ethylcyclohexane	2.53238E-05	0	0	2.52947E-05	2.52947E-05
Ethylbenzene	0.0570005	0	0	0.0569518	0.0569518
o-Xylene	0.178006	0	0	0.177855	0.177855
Nonane	1.95635E-06	0	0	1.95408E-06	1.95408E-06
Decane	1.17036E-06	0	0	1.169E-06	1.169E-06

Stream Properties

Property	Units	18	20 - Makeup	21 - Blowdown	22	23
Temperature	°F	254.467	80 *		254.424	257.469
Pressure	psig	0.34	26.54 *	0.34	0.34	986.54 *
Mole Fraction Vapor	%	0	0		0	0
Mole Fraction Light Liquid	%	100	100		100	100
Mole Fraction Heavy Liquid	%	0	0		0	0
Phase Mole Fraction	%	100	100	100	100	100
Molecular Weight	lb/lbmol	139.574	139.909	139.577	139.577	139.577
Mass Density	lb/ft^3	63.6179	70.0125		63.62	63.6084
Molar Flow	lbmol/h	143.917	0.0361045	0	143.952	143.952
Mass Flow	lb/h	20087.1	5.05136	0	20092.4	20092.4
Vapor Volumetric Flow	ft^3/h	315.747	0.0721494	0	315.819	315.876
Liquid Volumetric Flow	gpm	39.3658	0.00899525	0	39.3748	39.382
Std Vapor Volumetric Flow	MMSCFD	1.31485	0.000329858	0	1.31518	1.31518
Std Liquid Volumetric Flow	sgpm	35.6474	0.00895111	0	35.6564 *	35.6564
Compressibility		0.00395058	0.0138019		0.00395075	0.285122
Specific Gravity		1.02003	1.12256		1.02006	1.01988
API Gravity		-6.54586	-6.68649		-6.54658	-6.68722
Enthalpy	Btu/h	-4.50493E+07	-11882.9	0	-4.50628E+07	-4.49742E+07
Mass Enthalpy	Btu/lb	-2242.69	-2352.41	-2242.75	-2242.78	-2238.37
Mass Cp	Btu/(lb*°F)	0.615231	0.539627		0.615206	0.614404
Ideal Gas CpCv Ratio		1.03185	1.03918		1.03185	1.03177
Dynamic Viscosity	cP	2.25701	34.8791		2.25789	2.27619
Kinematic Viscosity	cSt	2.2148	31.1006		2.21558	2.23394
Thermal Conductivity	Btu/(h*ft*°F)	0.112583 ?	0.112953		0.112586 ?	0.11251 ?
Surface Tension	lbf/ft	0.00250815 ?	0.00306997		0.00250836	0.00249963
Net Ideal Gas Heating Value	Btu/ft^3	3472.02	3472.79	3472.02	3472.02	3472.02
Net Liquid Heating Value	Btu/lb	9201.42	9181.33	9201.27	9201.27	9201.27
Gross Ideal Gas Heating Value	Btu/ft^3	3799.12	3800.16	3799.12	3799.12	3799.12
Gross Liquid Heating Value	Btu/lb	10093.5	10072.1	10093.4	10093.4	10093.4

Remarks

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	TEG Dehydration	

Connections

	26				
From Block	Rich Flash Heater				
To Block	Flash Tank				

Stream Composition

Mole Fraction	26 %				
N2	0.0298104				
CO2	0.0120986				
H2S	0.000681325				
C1	2.09024				
C2	1.13321				
C3	0.880975				
iC4	0.104994				
C4	0.340139				
iC5	0.0905948				
C5	0.0948857				
C6	0.0273328				
nC7	0.0105963				
Octane	0.0070924				
Water	25.9525				
EG	0.000145489				
TEG	67.1055				
DEA	0				
MDEA	0.597948				
PZ	0.200007				
2,2-Dimethylpropane	0				
Cyclopentane	0.0481713				
2-Methylpentane	0.0248134				
3-Methylpentane	0.0172256				
Methylcyclopentane	0.0583849				
Benzene	0.664828				
Cyclohexane	0.0767363				
2-Methylhexane	0.0028259				
3-Methylhexane	0.00568566				
Methylcyclohexane	0.0317177				
2,5-Xylenol	1.59184E-05				
Toluene	0.312896				
2-Methylheptane	0.00150871				
Ethylcyclohexane	0.00268134				
Ethylbenzene	0.0335699				
o-Xylene	0.0386565				
Nonane	0.0013739				
Decane	0.000107349				

Mass Fraction	26 %				
N2	0.00766403				
CO2	0.00488658				
H2S	0.000213103				
C1	0.307745				
C2	0.312719				
C3	0.356519				
iC4	0.0560056				
C4	0.181435				
iC5	0.0599868				
C5	0.062828				
C6	0.0216168				
nC7	0.00974434				
Octane	0.00743518				

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	TEG Dehydration	

Mass Fraction	26 %				
Water	4.29086				
EG	8.28742E-05				
TEG	92.4855				
DEA	0				
MDEA	0.653922				
PZ	0.158107				
2,2-Dimethylpropane	0				
Cyclopentane	0.0310052				
2-Methylpentane	0.0196243				
3-Methylpentane	0.0136233				
Methylcyclopentane	0.0450949				
Benzene	0.476595				
Cyclohexane	0.059269				
2-Methylhexane	0.0025987				
3-Methylhexane	0.00522854				
Methylcyclohexane	0.0285809				
2,5-Xylenol	1.78471E-05				
Toluene	0.264585				
2-Methylheptane	0.00158162				
Ethylcyclohexane	0.00276132				
Ethylbenzene	0.0327081				
o-Xylene	0.0376641				
Nonane	0.00161716				
Decane	0.000140175				

Mass Flow	26 lb/h				
N2	1.63388				
CO2	1.04176				
H2S	0.045431				
C1	65.6077				
C2	66.6681				
C3	76.0058				
iC4	11.9398				
C4	38.6799				
iC5	12.7885				
C5	13.3942				
C6	4.60845				
nC7	2.07738				
Octane	1.5851				
Water	914.763				
EG	0.0176678				
TEG	19716.9				
DEA	0				
MDEA	139.409				
PZ	33.7067				
2,2-Dimethylpropane	0				
Cyclopentane	6.60995				
2-Methylpentane	4.18367				
3-Methylpentane	2.90433				
Methylcyclopentane	9.61371				
Benzene	101.605				
Cyclohexane	12.6355				
2-Methylhexane	0.554014				
3-Methylhexane	1.11467				
Methylcyclohexane	6.09312				
2,5-Xylenol	0.00380479				
Toluene	56.4065				
2-Methylheptane	0.337184				
Ethylcyclohexane	0.588683				
Ethylbenzene	6.973				

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Process Streams Report
All Streams
Tabulated by Total Phase

Client Name:	Trinity	Job: Fuel Gas Quality
Location:	Lea County	
Flowsheet:	TEG Dehydration	

Mass Flow	26 lb/h				
o-Xylene	8.02956				
Nonane	0.34476				
Decane	0.0298837				

Stream Properties

Property	Units	26				
Temperature	°F	166.623				
Pressure	psig	987.54				
Mole Fraction Vapor	%	0				
Mole Fraction Light Liquid	%	100				
Mole Fraction Heavy Liquid	%	0				
Phase Mole Fraction	%	100				
Molecular Weight	lb/lbmol	108.962				
Mass Density	lb/ft^3	65.1699				
Molar Flow	lbmol/h	195.654				
Mass Flow	lb/h	21318.9				
Vapor Volumetric Flow	ft^3/h	327.128				
Liquid Volumetric Flow	gpm	40.7847				
Std Vapor Volumetric Flow	MMSCFD	1.78753				
Std Liquid Volumetric Flow	sgpm	38.997				
Compressibility		0.249013				
Specific Gravity		1.04491				
API Gravity		-2.73794				
Enthalpy	Btu/h	-5.12853E+07				
Mass Enthalpy	Btu/lb	-2405.63				
Mass Cp	Btu/(lb*°F)	0.604398				
Ideal Gas CpCv Ratio		1.0449				
Dynamic Viscosity	cP	4.26619				
Kinematic Viscosity	cSt	4.0867				
Thermal Conductivity	Btu/(h*ft*°F)	0.114695 ?				
Surface Tension	lbf/ft	0.00269218 ?				
Net Ideal Gas Heating Value	Btu/ft^3	2686.42				
Net Liquid Heating Value	Btu/lb	9093.74				
Gross Ideal Gas Heating Value	Btu/ft^3	2947.31				
Gross Liquid Heating Value	Btu/lb	10005.2				

Remarks

ProMax 6.0.24302.0
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Inlet Gas Analysis

Component	Mole%	GPM REAL	GPM IDEAL
H2S	0.010		
Nitrogen	2.924		
Methane	65.970		
CO2	4.000		
Ethane	14.474	4.008	3.999
Propane	7.736	2.207	2.202
Isobutane	0.871	0.295	0.294
N-Butane	2.052	0.670	0.668
Isopentane	0.495	0.188	0.187
N-Pentane	0.456	0.171	0.171
Hexanes+	1.011	0.399	0.397
Total	100.000	7.938	7.918

BTEX Summary

WT% Bezene	15.535
WT% Toluene	8.287
WT% E Benzene	1.25
WT%Xylenes	1.25

***ANALYSIS OF HEXANES PLUS**

Component	MOLE%	WT%
2,2 DIMETHYL BUTANE	0.002	0.008
CYCLOPENTANE	0.061	0.203
2-METHYLPENTANE	0.106	0.389
3-METHYLPENTANE	0.062	0.229
HEXANE (C6)	0.104	0.381
DIMETHYLPENTANES	0.010	0.043
METHYLCYCLOPENTANE	0.084	0.300
2,2,3 TRIMETHYLBUTANE	0.000	0.001
BENZENE	0.176	0.583
CYCLOHEXANE	0.113	0.403
2-METHYLHEXANE	0.013	0.057
3-METHYLHEXANE	0.022	0.092
DIMETHYCYCLOPENTANES	0.009	0.036
HEPTANE (C7)	0.025	0.108
METHYLCYCLOHEXANE	0.062	0.262
2,5 DIMETHYLHEXANE	0.001	0.005
TOLUENE	0.084	0.331
2-METHYLHEPTANE	0.008	0.039
OTHER OCTANES	0.027	0.124
OCTANE (C8)	0.007	0.033
ETHYLCYCLOHEXANE	0.006	0.026
ETHYL BENZENE	0.011	0.051
M,P-XYLENE	0.008	0.036
O-XYLENE	0.003	0.014
OTHER NONANES	0.007	0.039
NONANE (C-9)	0.003	0.016
IC3 BENZENE	0.001	0.005
CYCLOOCTANE	0.001	0.005
NC3 BENZENE	0.001	0.004
TM BENZENE(S)	0.001	0.007
IC4 BENZENE	0.000	0.000
NC4 BENZENE	0.000	0.000
DECANES + (C10+)	0.007	0.047

Remarks: spot

* Hexane+ portion calculated by Allocation Process

***HEXANES PLUS SUMMARY**

AVG MOLE WT	89.237
VAPOR PRESS PSIA	9.860
API GRAVITY @ 60F	57.9
SPECIFIC GRAVITY	
AIR = 1 (IDEAL):	2.975
H2O = 1 (IDEAL):	0.747

COMPONENT RATIOS

HEXANES (C6)	MOLE%	32.081
HEPTANES (C7)	MOLE%	45.091
OCTANES (C8)	MOLE%	18.069
NONANES (C9)	MOLE%	3.610
DECANES+ (C10+)	MOLE%	1.149
HEXANES (C6)	WT%	30.456
HEPTANES (C7)	WT%	43.273
OCTANES (C8)	WT%	19.997
NONANES (C9)	WT%	4.558
DECANES+ (C10+)	WT%	1.716

Fuel Gas

Process Streams	Fuel Gas
Composition	**Status:** Solved
Phase: **Total**	**From Block:** SPLT-103
	To Block: --
Mole Fraction	**%**
N2	4.86422
CO2	1.17981E-05
H2S	0
C1	93.2904
C2	1.76365
C3	0.0781998
iC4	0.00128402
C4	0.00210661
iC5	4.47041E-05
C5	4.63626E-05
C6	1.61700E-06
nC7	2.86758E-07
Octane	0
Water	0
EG	0
TEG	0
DEA	0
MDEA	0
PZ	0
2,2-Dimethylpropane	0
Cyclopentane	0
2-Methylpentane	0
3-Methylpentane	0
Methylcyclopentane	0
Benzene	0
Cyclohexane	0
2-Methylhexane	0
3-Methylhexane	0
Methylcyclohexane	0
2,5-Xylenol	0
Toluene	0
2-Methylheptane	0
Ethylcyclohexane	0
Ethyl Benzyl Ether	0
o-Xylene	0
Nonane	0
Decane	0
Mass Fraction	**%**
N2	8.06505
CO2	3.07316E-05
H2S	0
C1	88.5800
C2	3.13876
C3	0.204093
iC4	0.00441716
C4	0.00724693
iC5	0.000190899
C5	0.000197981
C6	8.24746E-06
nC7	1.70066E-06
Octane	0
Water	0
EG	0
TEG	0
DEA	0
MDEA	0
PZ	0
2,2-Dimethylpropane	0
Cyclopentane	0
2-Methylpentane	0
3-Methylpentane	0
Methylcyclopentane	0
Benzene	0
Cyclohexane	0
2-Methylhexane	0
3-Methylhexane	0
Methylcyclohexane	0
2,5-Xylenol	0
Toluene	0
2-Methylheptane	0
Ethylcyclohexane	0
Ethyl Benzyl Ether	0
o-Xylene	0
Nonane	0
Decane	0

Mass Flow	lb/h
N2	223.721
CO2	0.000852480
H2S	0
C1	2457.17
C2	87.0678
C3	5.66145
iC4	0.122530
C4	0.201026
iC5	0.00529545
C5	0.00549191
C6	0.000228781
nC7	4.71756E-05
Octane	0
Water	0
EG	0
TEG	0
DEA	0
MDEA	0
PZ	0
2,2-Dimethylpropane	0
Cyclopentane	0
2-Methylpentane	0
3-Methylpentane	0
Methylcyclopentane	0
Benzene	0
Cyclohexane	0
2-Methylhexane	0
3-Methylhexane	0
Methylcyclohexane	0
2,5-Xylenol	0
Toluene	0
2-Methylheptane	0
Ethylcyclohexane	0
Ethyl Benzyl Ether	0
o-Xylene	0
Nonane	0
Decane	0

Process Streams		Fuel Gas
Properties	**Status:**	Solved
Phase: **Total**	**From Block:**	**SPLT-103**
	To Block:	**--**
Property	**Units**	
Temperature	°F	70
Pressure	psig	255
Mole Fraction Vapo	%	100
Mole Fraction Light	%	0
Mole Fraction Heav	%	0
Phase Mole Fractio	%	100
Molecular Weight	lb/lbmol	16.8956
Mass Density	lb/ft^3	0.830140
Molar Flow	lbmol/h	164.182
Mass Flow	lb/h	2773.95
Vapor Volumetric Fl	ft^3/h	3341.55
Liquid Volumetric Fl	gpm	416.608
Std Vapor Volumetri	MMSCFD	1.5*
Std Liquid Volumetri	sgpm	17.4474
Compressibility		0.961239
Specific Gravity		0.583360
API Gravity		
Enthalpy	Btu/h	-5.05781E+06
Mass Enthalpy	Btu/lb	-1823.32
Mass Cp	Btu/(lb*°F)	0.530898
Ideal Gas CpCv Rat		1.30557
Dynamic Viscosity	cP	0.0115886
Kinematic Viscosity	cSt	0.871482
Thermal Conductivit	Btu/(h*ft*°F)	0.0196062
Surface Tension	lbf/ft	
Net Ideal Gas Heati	Btu/ft^3	876.104
Net Liquid Heating \	Btu/lb	19734.4
Gross Ideal Gas He	Btu/ft^3	972.476
Gross Liquid Heatin	Btu/lb	21905.9

Caterpillar G3612 Manufacturer Specification Sheets

September 26, 2016

Emission Control Application Data Sheet

Maxim Silencers
6545 N. Eldridge Pkwy
Houston, TX 77041
Phone: 713-682-6777
Fax: 713-682-3628

Customer: **Enerflex** | Project: **Q2250259 Producers Midstream** | Date: **6/20/2025**

Customer Contact **Jessica Olvera** | Powertherm Contact: **Matthew Long** | Order/Quote #: **0**

Engine Data:

Engine Model:	**Caterpillar G3612**		Speed:	**1000**	RPM
Fuel & Operating Type:	**Natural Gas Lean Burn**		Engine Power:	**3750** **2800**	Hp KW
Exhaust Flow Rate:	**23965** **40717** **45335**	**acfm** **m^3/hr** **lbs/hr**	Exhaust Temperature:	**796** **424**	°F °C

Catalyst Data:

Number of Core layers:	**1**				
Model:	**MACC4-F8-3026C2-20210**		Inlet Size:	**26**	in
Grade:	**Super Critical/Hospital**		Outlet Size:	**30**	in
Body Diameter:	**78.5**	in	Body Length:	**345**	in
Estimated weight:	**9877** Kg	lbs	Estimated Back Pressure of the unit:	**5.83** **14.5**	in of WC mbar
Core Part Number:	**APX1-OX-SQ-1500-3600-350**	Qty **3**	Speed through inlet:	**5049**	ft/min
Cell Density	300	cpsi	Back Pressure across Element(s) only	2.29 **5.7**	in of WC mbar

Emission:

Min. Temp. at Core Face: **752** °F **400** °C
Max. Temp. at Core Face: **938** °F **503** °C

Catalyst Type: **Oxidation**

O_2 in Exhaust 11.8 vol %
H_2O in Exhaust vol %

	Pollutant					
	NOx	CO	NMNEHC/VOC	CH_2O/CHCO	ORGANIC PM10	
Engine Out / Pre Emission:	**0.3**	**2.73**	**0.53**	**0.13**	**0**	g/bhp-hr
	70.53	**641.86**	**124.61**	**30.56**	**0.00**	mg/Nm3
Post Emission:	**0.299**	**0.250**	**0.530**	**0.040**	**0.000**	g/bhp-hr
	70.32	**58.78**	**124.61**	**9.40**	**0.00**	mg/Nm3
	0.3	***90.8***	***0.0***	***69.2***	***50.0***	% Reduction
	2.47	2.07	4.38	0.33		lb/hr
	10.83	9.05	19.19	1.45		tons/year operation **8760** hr/year
	33.8	28.2	59.8	4.5		ppmv
						ppmvd @ 15% O2

Acoustics:

Frequency Band (Hz):	31.5	63	125	250	500	1000	2000	4000	8000	
Raw Noise SPL (dB) at 3.28 ft.:	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	7 dBA
Estimated Attenuation (dB):	**30**	**42**	**41**	**38**	**39**	**36**	**33**	**37**	**39**	No Element
Plus:	**30**	**43**	**43**	**40**	**43**	**41**	**39**	**43**	**44**	One Element Layer
Silenced SPL (dB) at 3.28 ft.:	**-30**	**-43**	**-43**	**-40**	**-43**	**-41**	**-39**	**-43**	**-44**	-34.2 dBA

Warranty & Notes:

- **If Pre-Emission levels are not as noted above, contact Maxim Silencers for a re-quote.**
- To achieve Post Emissions levels detailed above, exhaust temperature and Pre-Emission data must be as specified.
- Maximum allowable exhaust temperature at core face is 1350°F.
- If applicable, the engine will require an air/fuel ratio controller to meet above emission levels. For Rich Burn engines λ must be 0.96 - 0.99.
- Catalyst cleaning/regeneration required, if initial backpressure increases by 2" of WC.
- Engine operation to be stable and reproducible.
- QAC is not designed to withstand a backfire, therefore measures should be taken prior to QAC unit to alleviate backfire pressure.
- Maximum lubrication oil consumption rate to be less than 0.0015 lb/bhp/hr.
- Lube oil sulfate ash contents should not exceed 0.5%.
- Phosphorus and/or Zinc should not exceed 5 ppmv in the exhaust stream.
- A high temperature alarm/shutdown to be maintained at downstream of catalyst at 1300°F.
- Fuel not to contain heavy or transition metals such as Pb, Ar, Zn, Cu, Sn, Fe, Ba, Ni, Cr etc.
- Chlorinated or Silicone containing compounds in the exhaust not to exceed 1 ppmv.
- Sulfur compounds in the exhaust gas stream not to exceed 25 ppmv.
- Performance guarantee is voided should the catalyst become masked or de-activated by any contaminant in the exhaust stream.
- Engine to be maintained and operated in accordance within manufacturer's recommended practice.
- Under no condition will Maxim Silencers assume any contingent liabilities.
- Operating manual is available online at www.maximsilencers.com or contact a Maxim sales representative.
- Nomenclature: QAC4-292-8, 4 is grade (Super Critical), 29 is catalyst block size, 2 is no. of catalyst(s) and 8 is flange diameter.
- Organic PM10 are estimate only and not a guarantee because of the variability in fuels and additives which change PM10.
- Maxim Silencers standard one year warranty applies.

Rev level: 86

G3516

GAS ENGINE TECHNICAL DATA

CATERPILLAR®

ENGINE SPEED (rpm):	1400	FUEL:	Nat Gas
COMPRESSION RATIO:	8:1	FUEL SYSTEM:	HPG IMPCO
AFTERCOOLER - STAGE 2 INLET (°F):	130		WITH AIR FUEL RATIO CONTROL
AFTERCOOLER - STAGE 1 INLET (°F):	201	FUEL PRESSURE RANGE(psig):	40.0-45.0
JACKET WATER OUTLET (°F):	210	FUEL METHANE NUMBER:	80
ASPIRATION:	TA	FUEL LHV (Btu/scf):	905
COOLING SYSTEM:	JW□OC□1AC, 2AC	ALTITUDE CAPABILITY AT 77°F INLET AIR TEMP. (ft):	5700
IGNITION SYSTEM:	ADEM3	APPLICATION:	Gas Compression
EXHAUST MANIFOLD:	ASWC		
COMBUSTION:	Low Emission		
NOx EMISSION LEVEL (g/bhp-hr NOx):	0.5		

RATIN□		NOTES	LOAD	100%	□5%	50%
ENGINE POWER	(WITHOUT FAN)	(1)	bhp	1340	1005	671
ENGINE EFFICIENCY	(ISO 3046/1)	(2)	%	31.0	29.8	28.7
ENGINE EFFICIENCY	(NOMINAL)	(2)	%	30.4	29.3	28.1

EN□INE DATA						
FUEL CONSUMPTION	(ISO 3046/1)	(3)	Btu/bhp-hr	8199	8532	8867
FUEL CONSUMPTION	(NOMINAL)	(3)	Btu/bhp-hr	8359	8697	9039
AIR FLOW (77°F, 14.7 psia)	(WET)	(4) (5)	scfm	3281	2543	1708
AIR FLOW	(WET)	(4) (5)	lb/hr	14547	11275	7573
COMPRESSOR OUT PRESSURE			in Hg(abs)	92.2	79.8	60.6
COMPRESSOR OUT TEMPERATURE			°F	349	304	235
AFTERCOOLER AIR OUT TEMPERATURE			°F	142	138	131
INLET MAN. PRESSURE		(6)	in Hg(abs)	81.9	64.1	44.0
INLET MAN. TEMPERATURE	(MEASURED IN PLENUM)	(7)	°F	140	136	129
TIMING		(8)	°BTDC	33	33	33
EXHAUST TEMPERATURE ENGINE OUTLET		(9	F	1035	042	959
EXHAUST GAS FLOW (@engine outlet temp, 14.5 psia)	(WET)	(10) 5)	ft3/min	9875	7[illegible]04	4893
EXHAUST GAS MASS FLOW	WET	(10) 5)	lb/hr	1511	117[illegible]	7878

EMISSIONS DATA - EN□INE OUT					
NOx (as NO2)	(11)(12)	g/bhp-hr	0.50	0.50	0.50
CO	(11)(13)	g/bhp-hr	3.05	3.07	2.99
THC (mol. wt. of 15.84)	(11)(13)	g/bhp-hr	4.56	5.01	5.18
NMHC (mol. wt. of 15.84)	(11)(13)	g/bhp-hr	0.68	0.75	0.78
NMNEHC (VOCs) (mol. wt. of 15.84)	(11)(13)(14)	g/bhp-hr	0.46	0.50	0.52
HCHO (Formaldehyde)	(11)(13)	g/bhp-hr	0.28	0.56	0.59
CO2	(11)(13)	g/bhp-hr	532	550	560
EXHAUST OXYGEN	(11)(15)	% DRY	8.5	8.4	8.0
LAMBDA	(11)(15)		1.62	1.61	1.56

ENER□Y BALANCE DATA					
LHV INPUT	(16)	Btu/min	186633	145647	101011
HEAT REJECTION TO JACKET WATER (JW)	(17)(24)	Btu/min	46235	39207	33937
HEAT REJECTION TO ATMOSPHERE	(18)	Btu/min	5313	4428	3545
HEAT REJECTION TO LUBE OIL (OC)	(19)(24)	Btu/min	5937	5089	4432
HEAT REJECTION TO EXHAUST (LHV TO 77°F)	(20)	Btu/min	58577	45563	26567
HEAT REJECTION TO EXHAUST (LHV TO 350°F)	(20)	Btu/min	46822	36710	21670
HEAT REJECTION TO A/C - STAGE 1 (1AC)	(21)(24)	Btu/min	8527	4585	1024
HEAT REJECTION TO A/C - STAGE 2 (2AC)	(22)(25)	Btu/min	4761	3636	2450
PUMP POWER	(23)	Btu/min	833	833	833

PRELIMINARY

CONDITIONS AND DEFINITIONS

Engine rating obtained and presented in accordance with ISO 3046/1. (Standard reference conditions of 77°F, 29.60 in Hg barometric pressure.) No overload permitted at rating shown. Consult the altitude deration factor chart for applications that exceed the rated altitude or temperature.

Emission levels are at engine exhaust flange prior to any after treatment. Values are based on engine operating at steady state conditions, adjusted to the specified NOx level at 100% load. Tolerances specified are dependent upon fuel quality. Fuel methane number cannot vary more than □3.

For notes information consult page three.

ICE CATALYST SIZING PROGRAM

rev 2.1.3

Report Date: 8/22/2024

Customer	Producers Midstream	Housing	
Sales Person	MG	Element	APXP-OX-SQ-1500-2400-350
Project	New Mexico G3516	Contact	Trevin White
Engine Name	Caterpillar G3516LE G3516LE - 1340bhp -1400RPM		

Engine Power	1340.0	BHP	ACFM	9875.0	CU. FT/MIN	Exhaust O2	8.5	%
Exhaust Mass Flow	15112.0	LBS/HR	ACFH	592500	CU. FT/HR	Exhaust CO2	6.4	%
Process Temperature	1035.0	F	SCFM	3440.1	CU. FT/MIN	Exhaust H2O	11.6	%
Exhaust Pressure	14.5	PSI	SCFH	206407	CU. FT/HR	Exhaust N2	73.5	%
Exhaust Density	0.0255	LBS/FT^3	Std Temp	68.0	F	Max Pressure Drop	27.0	in wc
Molecular Weight	28.22	AMU	Std Pressure	14.6959	PSI	Propane in Fuel	0.00	%

ACS Part Name	R14.875X23.875X3.500-400					
OEM Part Name	ERZ-1524-3-400					
Type	NG/Diesel (Lean)	Layers	1			
Geometry	Rectangular	Modules/Layer	2	Cell Count	400cpsi	
X	14.875in	Guard Bed	No	Depth	3.500in	
Y	23.875in					

Open Area	4.408	ft^2	Part Volume	0.643	ft^3	Part Weight	47	lbs
Linear Velocity	2240	ft/min	Total Volume	1.286	ft^3	Total Weight	95	lbs
Pressure Drop	4.4	in wc	Space Velocity	160538	GHSV			

Inlet Emissions

	g/bhp-hr	lb/hr	tons/year	ppmv	ppmvd	ppmvd%O2
NOx	0.50	1.48	6.47	59.94	67.80	35.45
CO	3.05	9.01	39.49	600.53	679.33	355.18
VOC	0.46	1.36	5.96	57.53	65.07	34.02
H2CO	0.28	0.83	3.63	51.42	58.17	30.41

Target Emissions

	min %DRE	g/bhp-hr	lb/hr	tons/year	ppmv	ppmvd	ppmvd%O2
NOx	0.00	0.50	1.48	6.47	59.94	67.80	35.45
CO	96.07	0.12	0.35	1.55	23.63	26.73	13.97
VOC	13.04	0.40	1.18	5.18	50.02	56.59	29.59
H2CO	71.43	0.08	0.24	1.04	14.69	16.62	8.69

Emissions with Catalyst

	%DRE	g/bhp-hr	lb/hr	tons/year	ppmv	ppmvd	ppmvd%O2
NOx	0.00	<0.50	<1.48	<6.47	<59.94	<67.80	<35.45
CO	96.07	<0.12	<0.35	<1.55	<23.63	<26.73	<13.97
VOC	13.04	<0.40	<1.18	<5.18	<50.02	<56.59	<29.59
H2CO	71.43	<0.08	<0.24	<1.04	<14.69	<16.62	<8.69

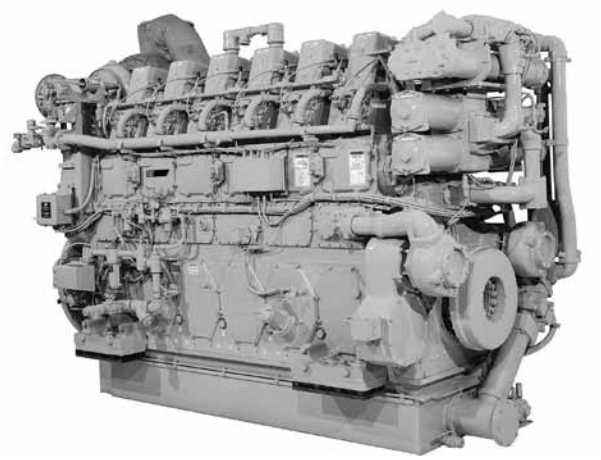
Safety Value: 2 VOC Molecular Weight: 44.1 O2 Reference Value: 15 Uptime (TPY): 100% (8760 hours)

Caterpillar G3606 LE Manufacturer Specification Sheets

G3606 LE Gas Petroleum Engine

1324-1413 bkW (1775-1895 bhp) 1000 rpm

0.5 g/bhp-hr NOx or 0.7 g/bhp-hr NOx (NTE)



Shown with Optional Equipment

CAT® ENGINE SPECIFICATIONS

In-Line 6, 4-Stroke-Cycle

Bore	300 mm (11.8 in.)
Stroke	300 mm (11.8 in.)
Displacement	127.2 L (7,762 cu. in.)
Aspiration	Turbocharged-Aftercooled
Digital Engine Management Governor and Protection	Electronic (ADEM™ A3)
Combustion	Low Emission (Lean Burn)
Engine Weight net dry (approx)	15,676 kg (34,560 lb)
Power Density	11.1 kg/kW (18.2 lb/hp)
Power per Displacement	14.9 bhp/L
Total Cooling System Capacity	401.3 L (106 gal)
Jacket Water	340.7 L (90 gal)
Aftercooler Circuit	60.6 L (16 gal)
Lube Oil System (refill)	707.9 L (187 gal)
Oil Change Interval	5000 hours
Rotation (from flywheel end)	Counterclockwise
Flywheel Teeth	255

FEATURES

Engine Design
- Proven reliability and durability
- Ability to burn a wide spectrum of gaseous fuels
- Robust diesel strength design prolongs life and lowers owning and operating costs
- Broad operating speed range

Emissions
Meets U.S. EPA Spark Ignited Stationary NSPS Emissions for 2010/11 with the use of an oxidation catalyst

Lean Burn Engine Technology
Lean-burn engines operate with large amounts of excess air. The excess air absorbs heat during combustion reducing the combustion temperature and pressure, greatly reducing levels of NOx. Lean-burn design also provides longer component life and excellent fuel consumption.

Ease of Operation
- High-strength pan and rails for excellent mounting and stability
- Side covers on block allow for inspection of internal components

Advanced Digital Engine Management
ADEM A3 engine management system integrates speed control, air/fuel ratio control, and ignition/detonation controls into a complete engine management system. ADEM A3 has improved: user interface, display system, shutdown controls, and system diagnostics.

Full Range of Attachments
Large variety of factory-installed engine attachments reduces packaging time.

Testing
Every engine is full-load tested to ensure proper engine performance.

Gas Engine Rating Pro
GERP is a PC-based program designed to provide site performance capabilities for Cat® natural gas engines for the gas compression industry. GERP provides engine data for your site's altitude, ambient temperature, fuel, engine coolant heat rejection, performance data, installation drawings, spec sheets, and pump curves.

Product Support Offered Through Global Cat Dealer Network
More than 2,200 dealer outlets

Cat factory-trained dealer technicians service every aspect of your petroleum engine

Cat parts and labor warranty

Preventive maintenance agreements available for repair-before-failure options

S•O•S℠ program matches your oil and coolant samples against Caterpillar set standards to determine:
- Internal engine component condition
- Presence of unwanted fluids
- Presence of combustion by-products
- Site-specific oil change interval

Over 80 Years of Engine Manufacturing Experience
Over 60 years of natural gas engine production

Ownership of these manufacturing processes enables Caterpillar to produce high quality, dependable products
- Cast engine blocks, heads, cylinder liners, and flywheel housings
- Machine critical components
- Assemble complete engine

Web Site
For all your petroleum power requirements, visit www.catoilandgas.cat.com.

STANDARD EQUIPMENT

Air Inlet System
Air cleaner — standard-duty inlet air adapter

Control System
ADEM A3 control system provides electronic governing integrated with air/fuel ratio control and individual cylinder ignition timing control

Cooling System
Jacket water pump
Jacket water thermostats and housing
Aftercooler pump
Aftercooler water thermostats and housing
Single-stage aftercooler

Exhaust System
Dry wrapped exhaust manifolds
Vertical outlet adapter

Flywheels and Flywheel Housing
SAE standard rotation

Fuel System
Gas admission valves with electronically controlled fuel supply pressure

Ignition System
A3 control system senses individual cylinder detonation and controls individual cylinder timing

Instrumentation
LCD display panel monitors engine parameters and displays diagnostic codes

Lube System
Crankcase breathers (top mounted)
Oil cooler
Oil filter
Oil pan drain valve

Mounting System
Engine mounting feet (four total)

Protection
Electronic shutoff system with purge cycle
Crankcase explosion relief valves
Gas shutoff valve

Starting System
Air starting system

General
Paint — Cat yellow
Vibration dampers

OPTIONAL EQUIPMENT

Air Inlet System
Heavy-duty air cleaner with precleaners
Heavy-duty air cleaner with rain protection

Charging System
Charging alternators

Control System
Custom control system software is available for non-standard ratings. Software is field programmable using flash memory.

Cooling System
Expansion tank
Flexible connections
Jacket water heater

Exhaust System
Flexible bellows adapters
Exhaust expander
Weld flanges

Fuel System
Fuel filter
Gas pressure regulator
Flexible connection
Low energy fuel system
Corrosive gas fuel system

Ignition System
CSA certification

Instrumentation
Remote data monitoring and speed control
Compatible with Cat® Electronic Technician (ET) and Data View
Communication Device — PL1000T/E
Display panel deletion is optional

Lube System
Air or electric motor-driven prelube
Duplex oil filter
LH or RH service
Lube oil makeup system

Mounting System
Mounting plates (set of six)

Power Take-Offs
Front stub shafts

Starting System
Air pressure reducing valve
Natural gas starting system

General
Engine barring device
Damper guard

TECHNICAL DATA

G3606 LE Gas Petroleum Engine — 1000 rpm

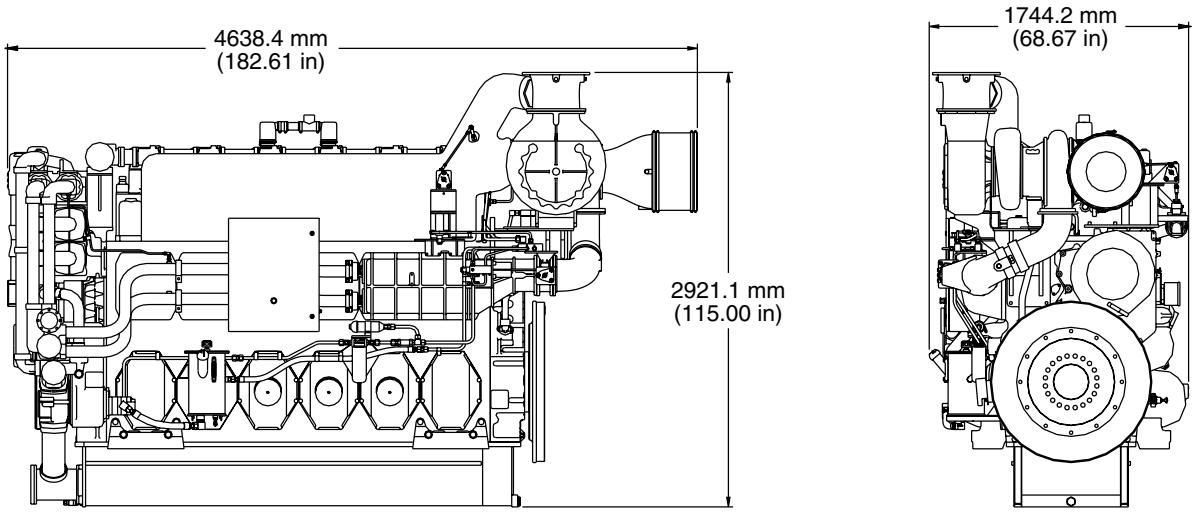
		DM5137-03	DM5432-05	DM5433-05	DM8605-02
Engine Power					
@ 100% Load	bkW (bhp)	1368 (1835)	1413 (1895)	1324 (1775)	1324 (1775)
@ 75% Load	bkW (bhp)	1026 (1376)	1060 (1421)	993 (1331)	993 (1331)
Engine Speed	rpm	**1000**	**1000**	**1000**	**1000**
Max Altitude @ Rated Torque and 38°C (100°F)	m (ft)	1219.2 (4000)	1219.2 (4000)	609.6 (2000)	609.6 (2000)
Speed Turndown @ Max Altitude, Rated Torque, and 38°C (100°F)	%	20	20	23	22
SCAC Temperature	°C (°F)	43 (110)	32 (90)	54 (130)	54 (130)
Emissions*					
NOx	g/bkW-hr (g/bhp-hr)	.94 (0.7)	.94 (0.7)	.94 (0.7)	.67 (0.5)
CO	g/bkW-hr (g/bhp-hr)	3.4 (2.5)	3.4 (2.5)	3.4 (2.5)	3.69 (2.75)
CO_2	g/bkW-hr (g/bhp-hr)	589 (439)	589 (438)	590 (440)	593 (442)
VOC**	g/bkW-hr (g/bhp-hr)	0.8 (0.6)	0.79 (0.59)	0.81 (0.6)	0.85 (0.63)
Fuel Consumption***					
@ 100% Load	MJ/bkW-hr (Btu/bhp-hr)	9.34 (6600)	9.31 (6580)	9.37 (6620)	9.41 (6649)
@ 75% Load	MJ/bkW-hr (Btu/bhp-hr)	9.73 (6876)	9.69 (6849)	9.77 (6903)	9.81 (6933)
Heat Balance					
Heat Rejection to Jacket Water					
@ 100% Load	bkW (Btu/mn)	321 (18,281)	327 (18,645)	314 (17,894)	314 (17,875)
@ 75% Load	bkW (Btu/mn)	278 (15,801)	283 (16,145)	270 (15,400)	272 (15,473)
Heat Rejection to Aftercooler					
@ 100% Load	bkW (Btu/mn)	269 (15,297)	305 (17,339)	235 (13,350)	244 (13,912)
@ 75% Load	bkW (Btu/mn)	149 (8466)	170 (9679)	128 (7300)	134 (7633)
Heat Rejection to Exhaust LHV to 25°C (77° F)					
@ 100% Load		1334 (75,883)	1346 (76,571)	1320 (75,085)	1325 (75,359)
@ 75% Load	bkW (Btu/mn)	1061 (60,310)	1073 (61,021)	1047 (59,560)	1051 (59,787)
Exhaust System					
Exhaust Gas Flow Rate					
@ 100% Load	m^3/min (cfm)	346.48 (12,236)	352.77 (12,458)	339.92 (12,004)	343.94 (12,146)
@ 75% Load	m^3/min (cfm)	273.97 (9675)	278.35 (9830)	269.49 (9517)	272.69 (9630)
Exhaust Stack Temperature					
@ 100% Load	°C (°F)	454 (850)	445 (832)	464 (867)	453 (847)
@ 75% Load	°C (°F)	471 (880)	465 (869)	477 (891)	466 (870)
Intake System					
Air Inlet Flow Rate					
@ 100% Load	m^3/min (scfm)	133.29 (4707)	137.53 (4857)	129.01 (4556)	132.69 (4686)
@ 75% Load	m^3/min (scfm)	102.96 (3636)	105.42 (3723)	100.50 (3549)	103.36 (3650)
Gas Pressure	kPag (psig)	295-324 (42.8-47)	295-324 (42.8-47)	295-324 (42.8-47)	295-324 (42.8-47)

*at 100% load and speed, all values are listed as not to exceed
**Volatile organic compounds as defined in U.S. EPA 40 CFR 60, subpart JJJJ
***ISO 3046/1

G3606 LE GAS PETROLEUM ENGINE

1324-1413 bkW (1775-1895 bhp)

GAS PETROLEUM ENGINE



DIMENSIONS		
Length	mm (in.)	4638.4 (182.61)
Width	mm (in.)	1744.2 (68.67)
Height	mm (in.)	2921.1 (115.00)
Shipping Weight	kg (lb)	15,676 (34,560)

Note: General configuration not to be used for installation. See general dimension drawings for detail.

RATING DEFINITIONS AND CONDITIONS

Engine performance is obtained in accordance with SAE J1995, ISO3046/1, BS5514/1, and DIN6271/1 standards.

Transient response data is acquired from an engine/generator combination at normal operating temperature and in accordance with ISO3046/1 standard ambient conditions. Also in accordance with SAE J1995, BS5514/1, and DIN6271/1 standard reference conditions.

Conditions: Power for gas engines is based on fuel having an LHV of 33.74 kJ/L (905 Btu/cu ft) at 101 kPa (29.91 in. Hg) and 15° C (59° F). Fuel rate is based on a cubic meter at 100 kPa (29.61 in. Hg) and 15.6° C (60.1° F). Air flow is based on a cubic foot at 100 kPa (29.61 in. Hg) and 25° C (77° F). Exhaust flow is based on a cubic foot at 100 kPa (29.61 in. Hg) and stack temperature.

Materials and specifications are subject to change without notice. The International System of Units (SI) is used in this publication.
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Performance Numbers: DM5137-03, DM5432-05, DM5433-05, DM8605-02
LEHW0039-02 (8-10)

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Application & Performance Warranty Data

Project Information

Site Location:	Snyder
Project Name:	Producers (Elk City) - G3606 Eng-2, Eng-2, Eng-7
Application:	Gas Compression
Number Of Engines:	1
Operating Hours per Year:	8760

Engine Specifications

Engine Manufacturer:	Caterpillar
Model Number:	G 3606 LE TA
Rated Speed:	1000 RPM
Type of Fuel:	Natural Gas
Type of Lube Oil:	1 wt% sulfated ash or less
Lube Oil Consumption:	0.1 % Fuel Consumption
Number of Exhaust Manifolds:	1

Engine Cycle Data

Load	Speed	Power	Exhaust Flow	Exhaust Temp.	Fuel Cons.	NO_x	CO	NMHC	NMNEHC	CH_2O	O_2	H_2O
%		*bhp*	*acfm (cfm)*	*° F*		*g/bhp-hr*	*g/bhp-hr*	*g/bhp-hr*	*g/bhp-hr*	*g/bhp-hr*	*%*	*%*
100	Rated	1,775	12,146	847		0.5	2.75	0.63	0.63	0.26	12.8	17

Emission Data (100% Load)

Emission	Raw Engine Emissions						Target Outlet Emissions						Calculated Reduction
	g/bhp-hr	*tons/yr*	*ppmvd @ 15% O_2*	*ppmvd*	*g/kW-hr*	*lb/MW-hr*	*g/bhp-hr*	*tons/yr*	*ppmvd @ 15% O_2*	*ppmvd*	*g/kW-hr*	*lb/MW-hr*	
NO_x*	0.5	8.57	49	67	0.671	1.48	0.5	8.57	49	67	0.671	1.48	
CO	2.75	47.13	441	606	3.688	8.13	0.12	2.06	19	26	0.161	0.35	95.6%
NMNEHC**	0.63	10.8	176	242	0.845	1.86	0.3	5.14	84	115	0.402	0.89	52.4%
CH_2O	0.26	4.46	39	53	0.349	0.77	0.08	1.37	12	16	0.107	0.24	69.2%

System Specifications

Catalyst System Specifications (Replacement Catalyst)

Element Model Number:	APX3-OX-SQ-1500-2400-350
Number of Catalyst Elements per Engine:	3
Design Exhaust Flow Rate:	12,146 acfm (cfm)
Design Exhaust Temperature[1]:	847° F
Dimensions:	15 in x 24 in
Exhaust Temperature Limits***:	550° F – 1250° F (catalyst inlet); 1350° F (catalyst outlet)
System Pressure Loss:	3.0 inH_2O (Clean)

* MW referenced as NO_2

** MW referenced as CH_4. Propane in the exhaust shall not exceed 15% by volume of the NMHC compounds in the exhaust, excluding aldehydes. The 15% (vol.) shall be established on a wet basis, reported on a methane molecular weight basis. The measurement of exhaust NMHC composition shall be based upon EPA method 320 (FTIR), and shall exclude formaldehyde.

*** General catalyst temperature operating range. Performance is based on the Design Exhaust Temperature.

MIRATECH Scope of Supply & Equipment Details

	Model Number	Quantity
Replacement Catalyst	**Replacement Catalyst**	**1 / engine**
Oxidation Catalyst	APX3-OX-SQ-1500-2400-350	3 / engine

Customer Scope Of Supply

- Support Structure
- Attachment to Support Structure (Bolts, Nuts, Levels, etc.)
- Expansion Joints
- Exhaust Piping
- Inlet Pipe Bolts, Nuts, & Gasket
- Outlet Pipe Bolts, Nuts, & Gasket

Special Notes & Conditions

1. Carbon steel is suitable for temperatures up to 900° F / 482° C continuously, when covered with external insulation or a heat shield. For continuous operation above 900° F / 482° C, where the equipment is externally insulated or has a heat shield, stainless steel should be used.

- A packed silencer installed upstream of the MIRATECH catalyst system will void MIRATECH's limited warranty.
- Final catalyst housings are dependent on engine output and required emission reductions. Changes may be made to optimize the system design at the time of order.
- Any drawings included with this proposal are preliminary in nature and could change depending on final product selection.
- Any sound attenuation listed in this proposal is based on housing with catalyst elements installed.
- Any emission reductions listed in this proposal are based on housing with catalyst elements installed.
- MIRATECH will confirm shipping location upon placement of order.

Waukesha P9394GSI S5 Manufacturer Specification Sheets

Waukesha

VHP - P9394GSI S5

Power Generation

ENGINE SPEED (rpm):	1200	NOx SELECTION (g/bhp-hr):	Customer Catalyst
DISPLACEMENT (in3):	9388	COOLING SYSTEM:	JW, IC + OC
COMPRESSION RATIO:	9.7:1	INTERCOOLER WATER INLET (°F):	130
IGNITION SYSTEM:	ESM2	JACKET WATER OUTLET (°F):	180
EXHAUST MANIFOLD:	Water Cooled	JACKET WATER CAPACITY (gal):	148
COMBUSTION:	Rich Burn, Turbocharged	AUXILIARY WATER CAPACITY (gal):	16
ENGINE DRY WEIGHT (lbs):	33900	LUBE OIL CAPACITY (gal):	259
AIR/FUEL RATIO SETTING:	ESM2	MAX. EXHAUST BACKPRESSURE (in. H2O):	20
ENGINE SOUND LEVEL (dBA)	105	MAX. AIR INLET RESTRICTION (in. H2O):	15
IGNITION TIMING:	ESM2 Controlled	EXHAUST SOUND LEVEL (dBA)	108
FREQUENCY (Hz):	60	PHASE:	3
GENERATOR TYPE:	Synchronous	PHASE ROTATION:	T1-T2-T3
VOLTAGE:	480		

SITE CONDITIONS:

FUEL:	Natural Gas	ALTITUDE (ft):	4000
FUEL PRESSURE RANGE (psig):	40 - 60	MAXIMUM INLET AIR TEMPERATURE (°F):	115
FUEL HHV (BTU/ft3):	1,035.2	FUEL WKI:	91.8
FUEL LHV (BTU/ft3):	935.8		

SITE SPECIFIC TECHNICAL DATA

POWER RATING	UNITS	SITE DATA (See note 15)	MAX RATING AT 100 °F AIR TEMP	SITE RATING AT MAXIMUM INLET AIR TEMPERATURE OF 115 °F 100%	75%	51%
CONTINUOUS ENGINE POWER	BHP		2500	2466	1850	1250
OVERLOAD	% 2/24 hr		0	0	-	-
ELECTRICAL EFFICIENCY (LHV)	%		34.6	34.7	34.5	32.5
GENERATOR OUTPUT	kWe		1788	1764	1323	894
GENERATOR kVA	kVA		2235	2205	1654	1118
GENERATOR CURRENT *based on 95.9% generator efficiency at 0.8 PF, no auxiliary engine driven equipment*	Amps		2691	2655	1992	1346
FUEL CONSUMPTION						
FUEL CONSUMPTION (LHV)	BTU/kWe-hr		9875	9850	9895	10502
FUEL CONSUMPTION (HHV)	BTU/kWe-hr		10924	10896	10946	11617
FUEL FLOW *based on fuel analysis LHV*	SCFM		314	309	233	167
HEAT REJECTION						
JACKET WATER (JW)	BTU/hr x 1000		5046	5053	3919	2972
LUBE OIL (OC)	BTU/hr x 1000		707	699	630	563
INTERCOOLER (IC)	BTU/hr x 1000		909	941	493	194
EXHAUST	BTU/hr x 1000		4446	4266	3138	2217
RADIATION	BTU/hr x 1000		529	479	457	444
EMISSIONS (ENGINE OUT):						
NOx (NO + NO2)	g/bhp-hr		11.9	12.0	12.9	12.9
CO	g/bhp-hr		5.9	5.6	5.4	5.1
THC	g/bhp-hr		0.5	0.6	0.7	0.9
NMHC	g/bhp-hr		0.054	0.055	0.071	0.092
NM,NEHC (VOC)	g/bhp-hr		0.014	0.015	0.019	0.025
CO2	g/bhp-hr		437	436	438	465
CO2e (Methane GWP: 25)	g/bhp-hr		450	449	454	486
CH2O	g/bhp-hr		0.050	0.050	0.050	0.050
CH4	g/bhp-hr		0.49	0.50	0.65	0.83
AIR INTAKE / EXHAUST GAS						
INDUCTION AIR FLOW	SCFM		3305	3252	2450	1757
EXHAUST GAS MASS FLOW	lb/hr		15364	15122	11390	8170
EXHAUST GAS FLOW *at exhaust temp, 14.5 psia*	ACFM		10393	10169	7533	5349
EXHAUST TEMPERATURE	°F		1062	1053	1028	1013

HEAT EXCHANGER SIZING[12]			
TOTAL JACKET WATER CIRCUIT (JW)	BTU/hr x 1000		5730
TOTAL AUXILIARY WATER CIRCUIT (IC + OC)	BTU/hr x 1000		1869

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

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

Data Generated by EngCalc Program Version 5.0 INNIO Waukesha Gas Engines, Inc.

10/23/2024 6:13 PM

FUEL COMPOSITION

HYDROCARBONS:		Mole or Volume %
Methane	CH4	93
Ethane	C2H6	4
Propane	C3H8	1
Iso-Butane	I-C4H10	0
Normal Butane	N-C4H10	0
Iso-Pentane	I-C5H12	0
Normal Pentane	N-C5H12	0
Hexane	C6H14	0
Heptane	C7H16	0
Ethene	C2H4	0
Propene	C3H6	0
	SUM HYDROCARBONS	98
NON-HYDROCARBONS:		
Nitrogen	N2	0
Oxygen	O2	0
Helium	He	0
Carbon Dioxide	CO2	2
Carbon Monoxide	CO	0
Hydrogen	H2	0
Water Vapor	H2O	0
	TOTAL FUEL	100

FUEL:	Natural Gas
FUEL PRESSURE RANGE (psig):	40 - 60
FUEL WKI:	91.8
FUEL SLHV (BTU/ft3):	919.50
FUEL SLHV (MJ/Nm3):	36.16
FUEL LHV (BTU/ft3):	935.78
FUEL LHV (MJ/Nm3):	36.80
FUEL HHV (BTU/ft3):	1035.15
FUEL HHV (MJ/Nm3):	40.71
FUEL DENSITY (SG):	0.60

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

FUEL CONTAMINANTS

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

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

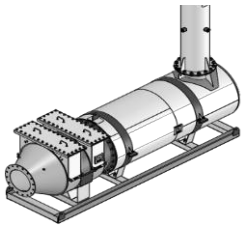
Calculated fuel contaminant analysis will depend on the entered fuel composition and selected engine model.

NOTES

1. All data is based on engines with standard configurations unless noted otherwise.
2. Power rating is adjusted for fuel, site altitude, and site air inlet temperature, in accordance with ISO 3046/1 with tolerance of ± 3%.
3. Fuel consumption is presented in accordance with ISO 3046/1 with a tolerance of -0 / +5% at maximum rating. Fuel flow calculation based on fuel LHV and fuel consumption with a tolerance of -0/+5 %. For sizing piping and fuel equipment, it is recommended to include the 5% tolerance.
4. Heat rejection tolerances are ± 30% for radiation, and ± 8% for jacket water, lube oil, intercooler, and exhaust energy.
5. Emission levels for engines with Waukesha supplied 3-way catalyst are given at catalyst outlet flange. For all other engine models, emission levels are given at engine exhaust outlet flange prior to any after treatment. Values are based on a new engine operating at indicated site conditions, and adjusted to the specified timing and air/fuel ratio at rated load. Catalyst out emission levels represent emission levels the catalyst is sized to achieve. Manual adjustment may be necessary to achieve compliance as catalyst/engine age. Catalyst-out emission levels are valid for the duration of the engine warranty. Emissions are at an absolute humidity of 75 grains H2O/lb (10.71 g H2O/kg) of dry air. Emission levels may vary subject to instrumentation, measurement, ambient conditions, fuel quality, and engine variation. Engine may require adjustment on-site to meet emission values, which may affect engine performance and heat output. NOx, CO, THC, NMHC, CO2, and CO2e emission levels are listed as a not to exceed limit, all other emission levels are estimated. CO2 emissions based on EPA Federal Register/Vol. 74, No. 209/Friday, October 30, 2009 Rules and Regulations 56398, 56399 (3) Tier 3 Calculation Methodology, Equation C-5.
6. Air flow is based on undried air with a tolerance of ± 7%.
7. Exhaust temperature given at engine exhaust outlet flange with a tolerance of ± 50°F (28°C).
8. Exhaust gas mass flow value is based on a "wet basis" with a tolerance of ± 7%.
9. Inlet air restrictions based on full rated engine load. Exhaust backpressure based on 175.76 PSI BMEP and 1200 RPM. Refer to the engine specification section of Waukesha's standard technical data for more information.
10. Cooling circuit capacity, lube oil capacity, and engine dry weight values are typical.
11. Fuel must conform to Waukesha's "Gaseous Fuel Specification" S7884-7 or most current version. Fuel may require treatment to meet current fuel specification.
12. Heat exchanger sizing values given as the maximum heat rejection of the circuit, with applied tolerances and an additional 5% reserve factor.
13. Fuel volume flow calculation in english units is based on 100% relative humidity of the fuel gas at standard conditions of 60°F and 14.696 psia (29.92 inches of mercury; 101.325 kPa).
14. Fuel volume flow calculation in metric units is based on 100% relative humidity of the fuel gas at a combustion temperature of 25°C and metering conditions of 0°C and 101.325 kPa (14.696 psia; 29.92 inches of mercury). This is expressed as [25, V(0;101.325)].
15. Engine sound data taken with the microphone at 1 m (3.3 ft) from the side of the engine at the approximate front-to-back centerline. Microphone height was at intake manifold level. Engine sound pressure data may be different at front, back and opposite side locations. Exhaust sound data taken with microphone 1 meter (3.3 ft) away and 1 meter (3.3 ft) to the side of the exhaust outlet.
16. Due to variation between test conditions and final site conditions, such as exhaust configuration and background sound level, sound pressure levels under site conditions may be different than those tabulated above.
17. Cooling system design flow is based on minimum allowable cooling system flow. Cooling system maximum external restriction is defined as the allowable restriction at the minimum cooling system flow.
18. Continuous Power Rating: The highest load and speed that can be applied 24 hours per day, seven days per week, 365 days per year except for normal maintenance at indicated ambient reference conditions and fuel. No engine overload power rating is available.
19. emPact emission compliance available for entire range of operable fuels; however, fuel system and/or O2 set point may need to be adjusted in order to maintain compliance. VHP emPact particulate emissions measured as condensable PM2.5 per 40 CFR Part 1065 gravimetric reference method.
20. In cold ambient temperatures, heating of the engine jacket water, lube oil and combustion air may be required. See Waukesha Technical Data.
21. Available Turndown Speed Range refers to the constant torque speed range available. Reduced power may be available at speeds outside of this range. Contact application engineering.

SPECIAL REQUIREMENTS

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



Catalytic Silencer (Table 1A)

Application	Power Generation	
Engine Model	Waukesha P9394GSI S5	
Engine Mechanical Power	2500 hp	
Fuel	Natural Gas (PQNG)	
Exhaust Flowrate	15193 lb/h	
Exhaust Temperature	1079 deg. F	
Catalytic Silencer Model	3DC78.1-18IGS	
Catalyst Model	DC78.1	
Number of Elements	3 (capacity of 4)	
Coating Code	96 / 300 cpsi	
Housing Material	304 Stainless steel	
Silencer Material	Carbon steel	
Silencer Grade	DCL Industrial 15 dBA	
Jacket Diameter (Approx.)	36 inches	
Overall Length (Approx.)	160 inches	
Inlet Connection	18 inches	
Outlet Connection	18 inches	
Flow Direction	Horizontal	
Backpressure	7.6 inches H2O	
Pre-Catalyst Emissions TPY	NOx	291.6
	CO	145.3
	NMNEHC	0.33
	CH2O	1.21
Post-Catalyst TPY	NOx	2.70
	CO	1.16
	NMNEHC	0.02
	CH2O	0.07
Limited Warranty	(doc. X0000-0000-K1) one year or 8000 hours operation, whichever first	
Additional Notes		

Amine Hot Oil Heater (HO-1) Manufacturer Specification Sheets

PROPERTY	PROCESS OPERATING CONDITIONS					
	1	2	3	4	5	6
STREAM	FUEL GAS	FUEL GAS	COMBUSTION AIR	FUEL GAS	COMBUSTION AIR	FGR
TEMPERATURE	70 °F	70 °F	60 °F	70 °F	132 °F	542 °F
PRESSURE	100 PSIG	36 INWC	ATM	10 INWC	14 INWC	ATM
FLOWRATE (OPERATING)	34,762 SCFH		5,557 ACFM	168 SCFH	8,574 ACFM	2,195 ACFM
FLOWRATE (DESIGN)	36,501 SCFH		6,391 ACFM		9,003 ACFM	2,305 ACFM

M-25002
COMBUSTION AIR BLOWER MOTOR
3600 RPM
75 HP
460/3/60

B-25002
COMBUSTION AIR BLOWER
9800 ACFM
16 INWC

BRN-20001
WEBSTER HDSX9G-750H
FIRING@DESIGN 37.1 MMBTU/HR
FIRING@OPERATING 35.3 MMBTU/HR
PILOT@ 168,000 BTU/HR

CUSTOMER DCS
BURNER RUN STATUS — BY 20001
COMMON ALARM — BA 20001
REMOTE START/STOP — BC 20001
REMOTE E-STOP — HS 27001
PUMP PERMISSIVE — YS 45001

SIGMA CONTROL PANEL — BIC 20001
HEAT DEMAND — FROM SHT 1 | TIC27002
PURGE CONTROL COMMANDS — TO SHT 1 | TIC27002

CUSTOMER MCC PANEL
PUMP RUNNING — YS 30001
PUMP RUNNING — YS 30002
BLOWER RUNNING — YS 25002
BLOWER START/STOP — CC 25002

CONTROL VARIABLE — FROM SHT 1 | TIC27002
TZ 25001 · ZSC 25001 · ZSO 25001
FROM SHT 1 | FGR
FCV 25001 · FL
FCV 25002 · FL
ATM AIR INLET
TZ 25002 · ZSO 25002 · ZSC 25002

M-25002 · B-25002
XS 20001 · XE 20001 · BE 20001

CONTROL VARIABLE — FROM SHT 1 | TIC27002
CONTROL VARIABLE — FROM SHT 1 | TIC27002
SET@ 13 INWC — PSL 25003
SET@ 1 INWC — PSL 25002

ZSC 20000 · TZ 20000 · FCV 20000 · FL · 3"
IGNITOR · SCANNER · MAIN GAS · SIGHT GLASS · PILOT
1/2" 3000# NPT · TEST PORTS
1/2" 3000# NPT · 1/2"x3/8" · TEST PORTS
1/2" NV1NPT1

BRN-20001

RANGE 0-200 PSIG — PG 20000
TP B1 20 · BY OTHERS · BY SIGMA B31.3
1/4" B7NPT1
NG FUEL GAS INLET — 3"-40-NG-201 — 3" B7F20
S-3"F7-1 · 3"x2" · 150# RF
3" 150# RF
SET@2.2 PSIG RANGE 1,6 - 2,3 PSIG
PCV 20001 · SET@ 5PSIG · 2"x4" · 2"

RANGE 0-5 PSIG — PG 20001 — 1/4" B7NPT21
SET@ 45 INWC RANGE 0-150 INWC — PSL 20001
4"x3"
FC · ZSC 20001 · YV 20001 · 3"
3"-40-NG-010

FO · 1 1/2" · XV 20003
OTHERS BY · SIGMA BY · TP B2 20
1 1/2"-80-NG-204

FC · ZSC 20002 · YV 20002 · 3"
RANGE 0-5 PSIG — PG 20002 — 1/4" B7NPT21
SET@56 INWC RANGE 0-150 INWC — PSH 20002
3" B7F4

RANGE 0-30 INWC — PG 20004 — 1/4" B7NPT1
RANGE 6-14 INWC SET@ 10.1 INWC
1/2" B7NPT3 · 1/2" · PCV 20003
FC · 1/2" · XV 20004 · 1/2"-80-NG-203

FO · 3/4" · XV 20006 · OTHERS BY · SIGMA BY · TP B3 20
3/4"-80-NG-205

FC · 1/2" · XV 20005 · 1/2" B1NPT8

BURNER SAFETY INTERLOCKS		
TAG NO.	INTERLOCK DEFINITION	INTERLOCK TYPE
PSL 20001	MAIN FUEL GAS LOW PRESSURE	BURNER
PSH 20002	MAIN FUEL GAS HIGH PRESSURE	BURNER
ZSC 20001	MAIN GAS SSOV PROOF OF CLOSURE SWITCH-1	BURNER
ZSC 20002	MAIN GAS SSOV PROOF OF CLOSURE SWITCH-2	BURNER
ZSC 25001	FGR DAMPER LOW FIRE END OF TRAVEL SWITCH	BURNER
ZSO 25001	FGR DAMPER HIGH FIRE END OF TRAVEL SWITCH	BURNER
ZSC 25002	CA DAMPER LOW FIRE END OF TRAVEL SWITCH	BURNER
ZSO 25002	CA DAMPER HIGH FIRE END OF TRAVEL SWITCH	BURNER
ZSC 20000	GAS CONTROL VALVE LOW FIRE END OF TRAVEL SWITCH	BURNER
BE 20001	FLAME SCANNER / FLAME FAILURE	BURNER
PSL 25002	CA LOW PRESSURE	BURNER
PSL 25003	CA LOW PURGE PRESSURE	BURNER
YS 25002	CA BLOWER RUNNING	BURNER
YS 30001	PUMP RUNNING	BURNER
YS 30002	PUMP RUNNING	BURNER

SIGMA THERMAL INCORPORATED

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SIGMA THERMAL

NOTES

1. FINAL DEVICE SETTING TO BE DETERMINED AT THE TIME OF COMMISSIONING.
2. ALL VENT PIPING BY OTHERS, VENT TO ATMOSPHERE TO A SAFE LOCATION.
3. MOTOR STARTERS BY OTHERS.
4. CLEAN GAS SUPPLY AT THE NOTED PRESSURE IS BY OTHERS.
5. AREA CLASSIFICATION IS GENERAL AREA.
6. PRESSURE REGULATOR INTERNAL SLAM SHUT OFF VALVE.

DWG TITLE: THERMAL FLUID SYSTEM P&ID
EQUIPMENT TYPE: THERMAL FLUID HEATER
EQUIPMENT SIZE: HC2-20.0-H-SF
DATE: 10/01/2024 · SCALE: NONE · SHEET: 4 OF 4 · REV: 0
DWG NUMBER: 1062686 · DWG CLASSIFICATION:

WEBSTER COMBUSTION
A Selas Heat Technology Company

Estimated Emissions -HDS and HDSX Burners

The following emissions apply to all HDS and HDSX burners firing the fuels shown.

Estimated Emission Levels Firing Natural Gas				
Pollutant		**Model HDS**	**Model HDSX**	**Model HDSX**
NOx (B)	ppm lb/mmbtu	80 0.096	25 0.03	20 0.024
CO (A)	ppm lb/mmbtu	50 0.037	50 0.037	50 0.037
SOx (C)	ppm lb/mmbtu	1 0.001	1 0.001	1 0.001
HC / VOC	ppm lb/mmbtu	20 0.008	20 0.008	20 0.008
PM	ppm lb/mmbtu	na 0.0048	na 0.0048	na 0.0048

Estimated Emission Levels Firing #2 Oil (D)			
Pollutant		**Model HDS**	**Model HDSX**
NOx (B)	ppm lb/mmbtu	135 0.176	88 0.115
CO (A)	ppm lb/mmbtu	50 0.04	50 0.04
SOx (C)	ppm lb/mmbtu	278 0.52	278 0.52
HC / VOC	ppm lb/mmbtu	25 0.013	25 0.013
PM	ppm lb/mmbtu	na 0.014	na 0.014

Assumption used for above (Contact Webster if different assumptions required)

A. CO varies with firing rate. Lower levels available, contact sales.
B. The ppm levels are corrected to 3% Oxygen (15% excess air) and dry volume basis.
C. Maximum sulfur in natural gas is 0.0006% wt.
D. ASTM #2 fuel, 0.02% Nitrogen, 0.5% Sulfur and 0.01% Ash (% by weight).
E. All levels are above backround (ambient) conditions.
F. Emission levels are based on a properly maintained and tuned burner.

HP-FLARE and LP-FLARE Manufacturer Specification Sheets

Combustion Engineering
& Design

GBA CORONA
Flares For The Future

Equipment Quotation

Producers Midstream

White Wing Cryo Facility
Flare and KOD Package

Customer RFQ #: SC-1900-2012-11 Dual Flare RFQ

GBA-CORONA REF: CF 21.2863

TENDER DOCUMENTS
for
Design, Material Supply and Fabrication of
Flare System Package

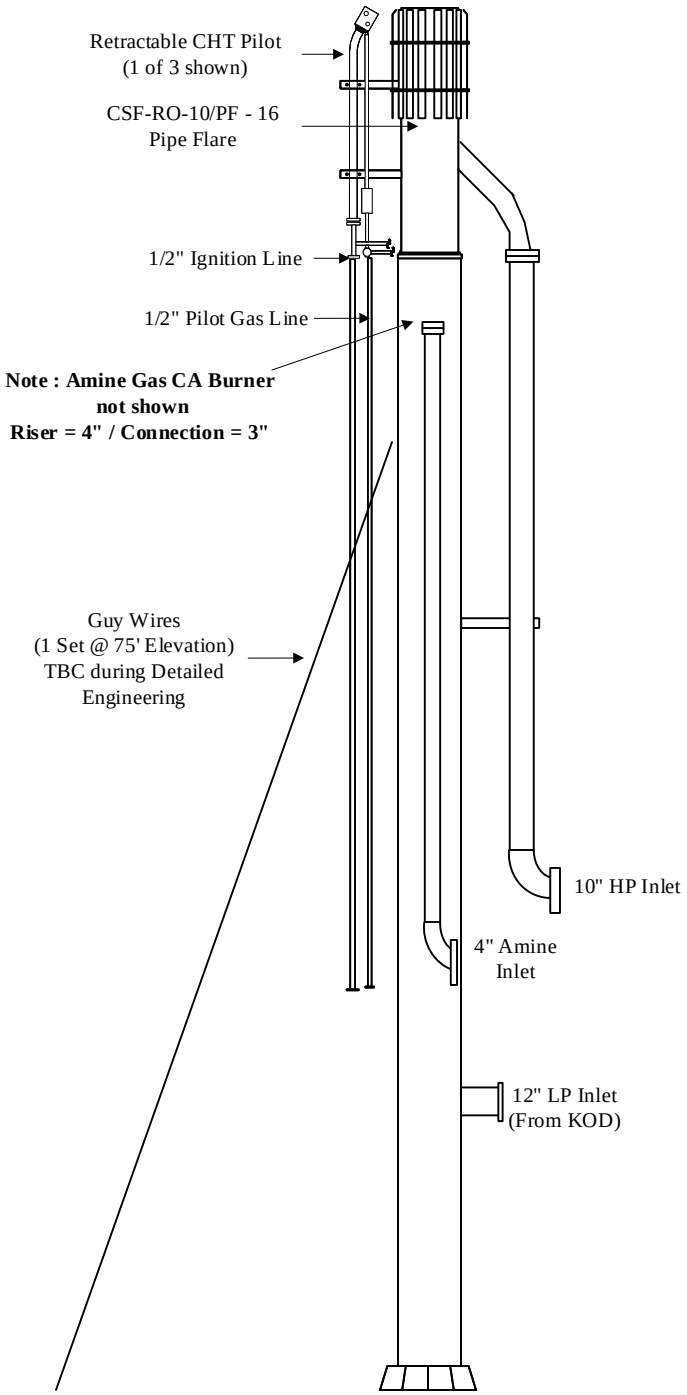
29 March 2021

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GBA-Corona, Inc.
77 Sugar Creek Center Blvd., Sugar Land, TX 77478
Tel. (713)-773-9933- Fax (713)-773-9940

Producers Midstream – White Wing Cryo Facility
Dual Flare - Guy Supported Stack
CSF-RO-10 HP / PF – 16 LP / CA-3 – Continuous Purge Option
115' Tall (overall height)

Ref: CF21.2863
Date: March 25, 2021



Stack Design Specifications

Design Code:	ANSI / ASCE 7-10
Overall Height:	115 ft
Support Structure Type:	Guy Supported
Max. Wind Speed:	90 MPH
Exposure:	"C"
Importance Factor:	1.0
Earthquake Zone:	Zone 0
Deflection Criteria:	Not Applicable
External Nozzle Loads:	Assumed Zero
Corrosion Allowance:	None

Material Specifications

Utility Piping:	A-106 Gr B
Flanges:	Class 150 A-105
Gas Risers:	API 5L or Equal
Guy Wires:	Wire Rope

Surface Preparation Specifications

Sandblast:	SSSP SP-6
Primer Coat:	One(1) Inorganic Zinc Silicate 2 - 3 mils DFT
Intermediate Coat:	Not Applicable
Finish Coat:	High Heat Aluminum

Inspection & Testing Specifications

Radiography:	10% Random X-ray
Other Weld Exam:	100% Dye Pen.
Pressure Test:	Not Applicable (no hydro)
Allignment Check:	Trial Fitup of Riser & Attachments at Shop
Coat Film Thickness:	Nordson Dry Film Gage

Note: Nozzle Loads will be designed to 1.0x the API 537 Loads

Note: Thermal expansion movement to be accounted for in customer pipework

Note: Purge will be fed from pilot gas manifold at bottom of stack. All fittings and piping for this provided by GBA-Corona

COMBO FLARE SPECIFICATIONS: PF-16 / CSF-RO-10 (FX or VSF)

GBA Corona
Flares for the Future

CORONA
REF. NO:
CF21.2863
March 24, 2021

PROCESS DATA

GAS STREAM	HP	LP
FLOW MAXIMUM	60 mmscfd	75 mmscfd
FLOW MINIMUM	PURGE	
MOLECULAR WEIGHT	18.4	23 to 32
TEMPERATURE	97 ^{0} F	0 ^{0} F
INLET PRESSURE	40 psig	10 psig
SMOKELESS CAPACITY	60 mmscfd	0 mmscfd

DIMENSIONS (approx.)

HEIGHT	10' - 0"	WIDTH	3' - 10"
WEIGHT	2500 LBS		

MATERIALS

MAIN BODY	316 SS
HP BODY	316 SS
PILOT	316L SS
PILOT NOZZLE	CK20
LIFTING LUGS	316 SS
PILOT MANIFOLD	n/a
IGNITION MANIFOLD	n/a

NON DESTRUCTIVE EXAMINATION

RADIOGRAPHY	10 % of butt welds
OTHER NDE	none

SURFACE FINISH / PAINT (carbon steel)

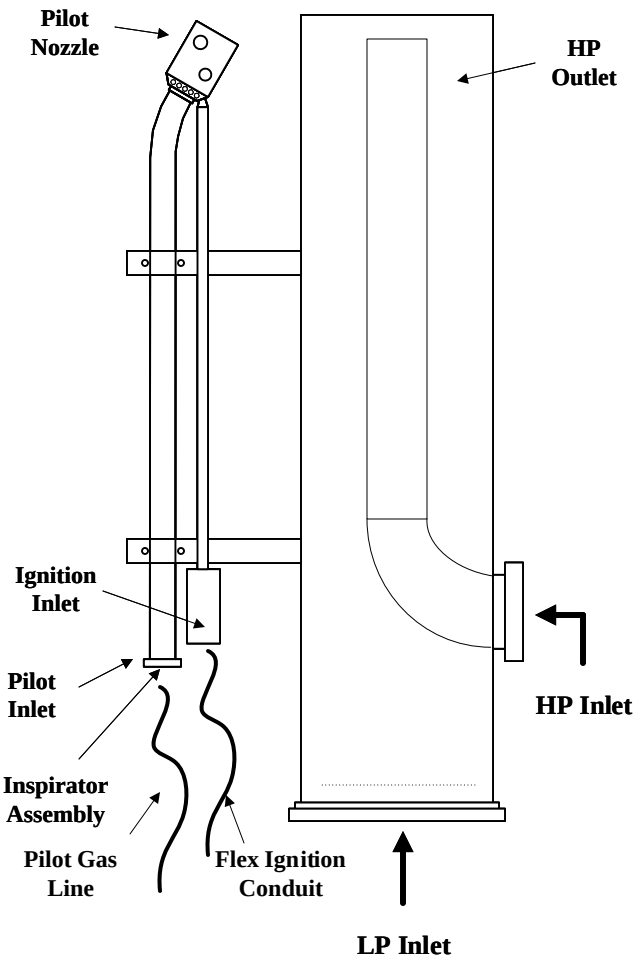
SANDBLAST	SP-6
PRIMER	CZ-11 2-3 mil
TOP COAT	none

UTILITIES

PILOT FUEL GAS	100 SCFH (per pilot)
PURGE GAS (HP / LP)	30 SCFH / 90 SCFH

PILOTS

QUANTITY	Two - Retractable	TYPE	CHT-Electronic
THERMOCOUPLES	n/a	TYPE	n/a



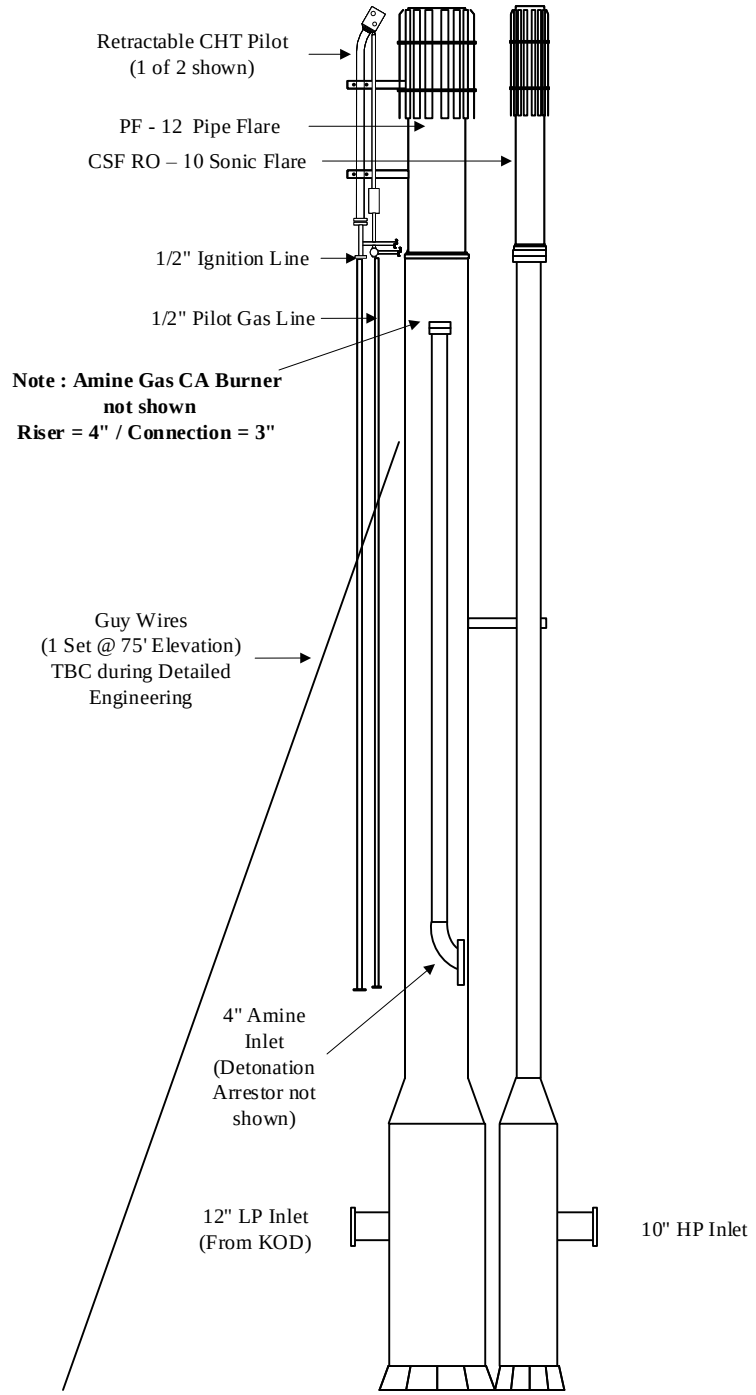
This offer may not include all items show.

TERMINAL POINTS

HP GAS INLET	10"	Class 150 RFWN A-105
LP GAS INLET	16"	Class 150 RFWN A-105
PILOT MANIFOLD INLET	1"	Class 150 RFWN A-105
IGNITION MANIFOLD INLET	1-1/2"	FNPT

Producers Midstream – White Wing Cryo Facility
Dual Flare - Guy Supported Stack
CSF-RO-10 HP / PF – 12 LP / CA-3 – Water Seal Option
115' Tall (overall height)

Ref: CF21.2863
Date: March 25, 2021



Stack Design Specifications

Design Code:	ANSI / ASCE 7-10
Overall Height:	115 ft
Support Structure Type:	Guy Supported
Max. Wind Speed:	90 MPH
Exposure:	"C"
Importance Factor:	1.0
Earthquake Zone:	Zone 0
Deflection Criteria:	Not Applicable
External Nozzle Loads:	Assumed Zero
Corrosion Allowance:	None

Material Specifications

Utility Piping:	A-106 Gr B
Flanges:	Class 150 A-105
Gas Risers:	API 5L or Equal
Guy Wires:	Wire Rope

Surface Preparation Specifications

Sandblast:	SSSP SP-6
Primer Coat:	One(1) Inorganic Zinc Silicate 2 - 3 mils DFT
Intermediate Coat:	Not Applicable
Finish Coat:	High Heat Aluminum

Inspection & Testing Specifications

Radiography:	10% Random X-ray
Other Weld Exam:	100% Dye Pen.
Pressure Test:	Not Applicable (no hydro)
Allignment Check:	Trial Fitup of Riser & Attachments at Shop
Coat Film Thickness:	Nordson Dry Film Gage

Note: Nozzle Loads will be designed to 1.0x the API 537 Loads

Note: Thermal expansion movement to be accounted for in customer pipework

Note: Purge will be fed from pilot gas manifold at bottom of stack. All fittings and piping for this provided by GBA-Corona

CSF SPECIFICATIONS:

CSF-10-RO - Sonic Flare (Fixed or Variable)

CORONA
REF. NO:
CF21.2863
March 24, 2021

PROCESS DATA

GAS STREAM	
FLOW MAXIMUM	*60 mmscfd*
FLOW MINIMUM	*PURGE*
MOLECULAR WEIGHT	*18.4*
TEMPERATURE	*97 ^{0} F*
INLET PRESSURE	*40 psig*
SMOKELESS CAPACITY	*60 mmscfd*

DIMENSIONS (approx.)

HEIGHT	*10' - 0"*	**WIDTH**	*1' - 0"*
WEIGHT	*450 lbs (fixed) / 650 lbs (variable)*		

MATERIALS

MAIN BODY	*316L SS*
CSF INSERT	*316L SS*
PILOT	*316L SS*
PILOT NOZZLE	*CK20*
LIFTING LUGS	*316L SS*
PILOT MANIFOLD	*n/a*
IGNITION MANIFOLD	*n/a*

NON DESTRUCTIVE EXAMINATION

RADIOGRAPHY	*10% of butt welds*
OTHER NDE	*none*

SURFACE FINISH / PAINT (carbon steel)

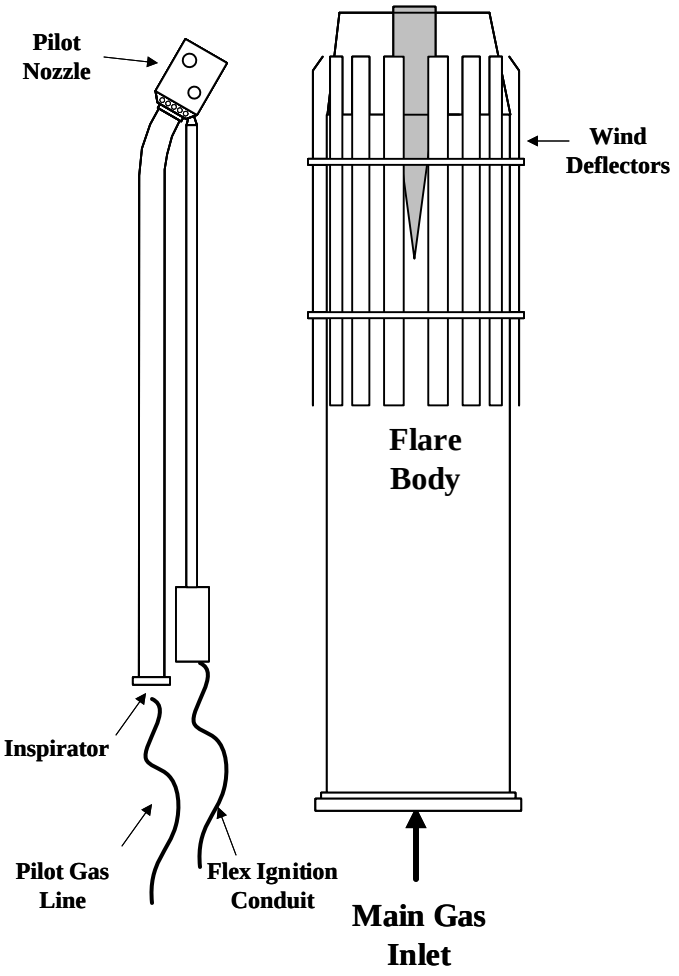
SANDBLAST	*SP-6*
PRIMER	*CZ-11 2-3 mil*
TOP COAT	*High Heat Aluminum*

UTILITIES

PILOT FUEL GAS	*100 scfh (per pilot)*
PURGE GAS	*n/a (water seal at base)*

PILOTS

QUANTITY	*One*	**TYPE**	*CHT Electronic*
THERMOCOUPLES	*n/a*	**TYPE**	*n/a*



This offer may not include all items show.

TERMINAL POINTS

GAS INLET	*10"*	*Class 150 RFWN A-105*
IGNITION INLET	*1-1/2"*	*FNPT*
PILOT INLET	*1"*	*Class 150 RFWN A-105*

PIPEFLARE SPECIFICATIONS: PF-12

GBA Corona
Flares for the Future

CORONA
REF. NO:
CF 21.2863
March 24, 2021

PROCESS DATA

GAS STREAM	
FLOW MAXIMUM	*75 mmscfd*
FLOW MINIMUM	*PURGE*
MOLECULAR WEIGHT	*23 to 32*
TEMPERATURE	*0 ^{0} F*
INLET PRESSURE	*10 psig*
SMOKELESS CAPACITY	*n/a*

DIMENSIONS (approx.)

HEIGHT	*10' - 0"*	**WIDTH**	*3' - 0"*
WEIGHT	*600 LBS*		

MATERIALS

UPPER BODY (4')	*316L SS*
LOWER BODY (4')	*316L SS*
PILOT	*316L SS*
PILOT NOZZLE	*CK20*
LIFTING LUGS	*316 SS*
PILOT MANIFOLD	*n/a*
IGNITION MANIFOLD	*n/a*

NON DESTRUCTIVE EXAMINATION

RADIOGRAPHY	*10 % of butt welds*
OTHER NDE	*none*

SURFACE FINISH / PAINT (carbon steel)

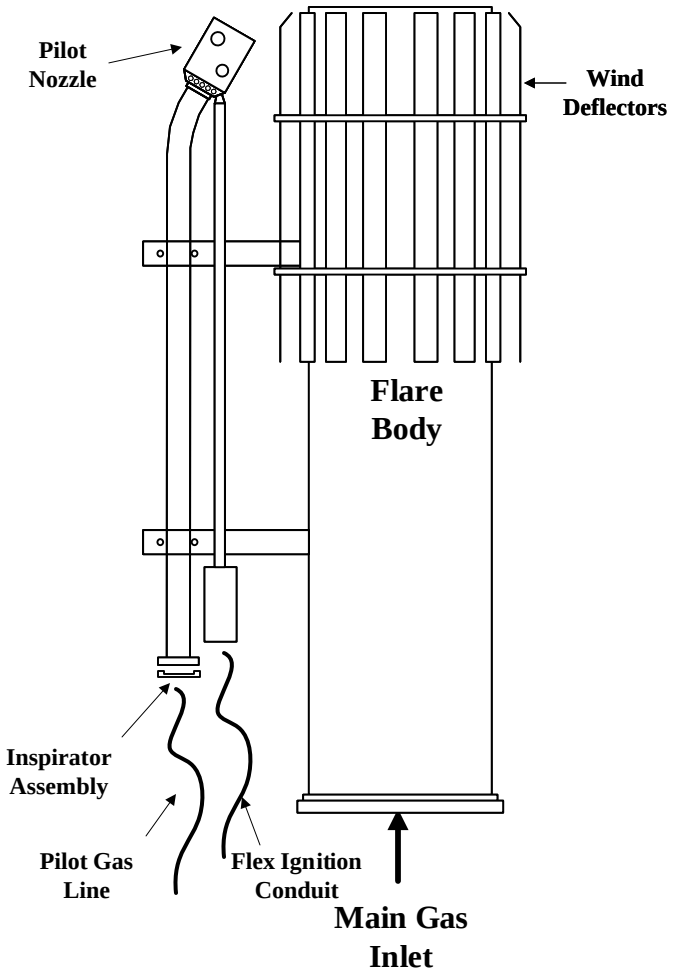
SANDBLAST	*SP-6*
PRIMER	*CZ-11 2-3 mil*
TOP COAT	*High-Heat Aluminum*

UTILITIES

PILOT FUEL GAS	*100 SCFH (per pilot)*
PURGE GAS	*n/a (water seal at base)*

PILOTS

QUANTITY	*One*	**TYPE**	*CHT - electronic*
THERMOCOUPLES	*n/a*	**TYPE**	*n/a*



This offer may not include all items show.

TERMINAL POINTS

GAS INLET	*12"*	*Class 150 RFWN A-105*
IGNITION INLET	*1-1/2"*	*FNPT*
PILOT INLET	*1"*	*Class 150 RFWN A-105*

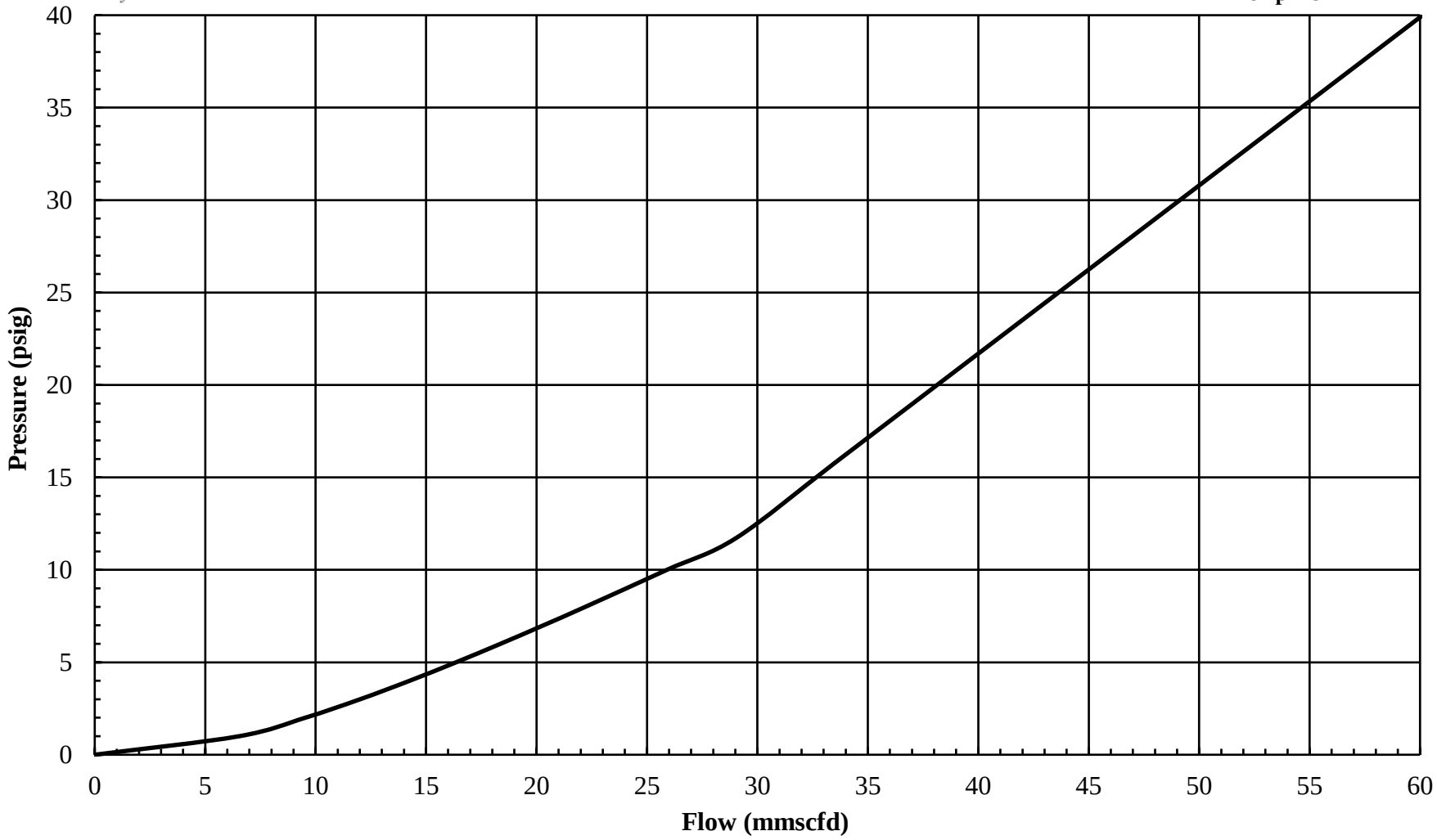
GBA Corona
Flares for the Future

Producers Midstream - White Wing Cryo Facility

CSF-RO-10 Sonic HP Flare Tip - Fixed Area

Pressure vs. Flow Curve

MW = 21
Temp = 97°F



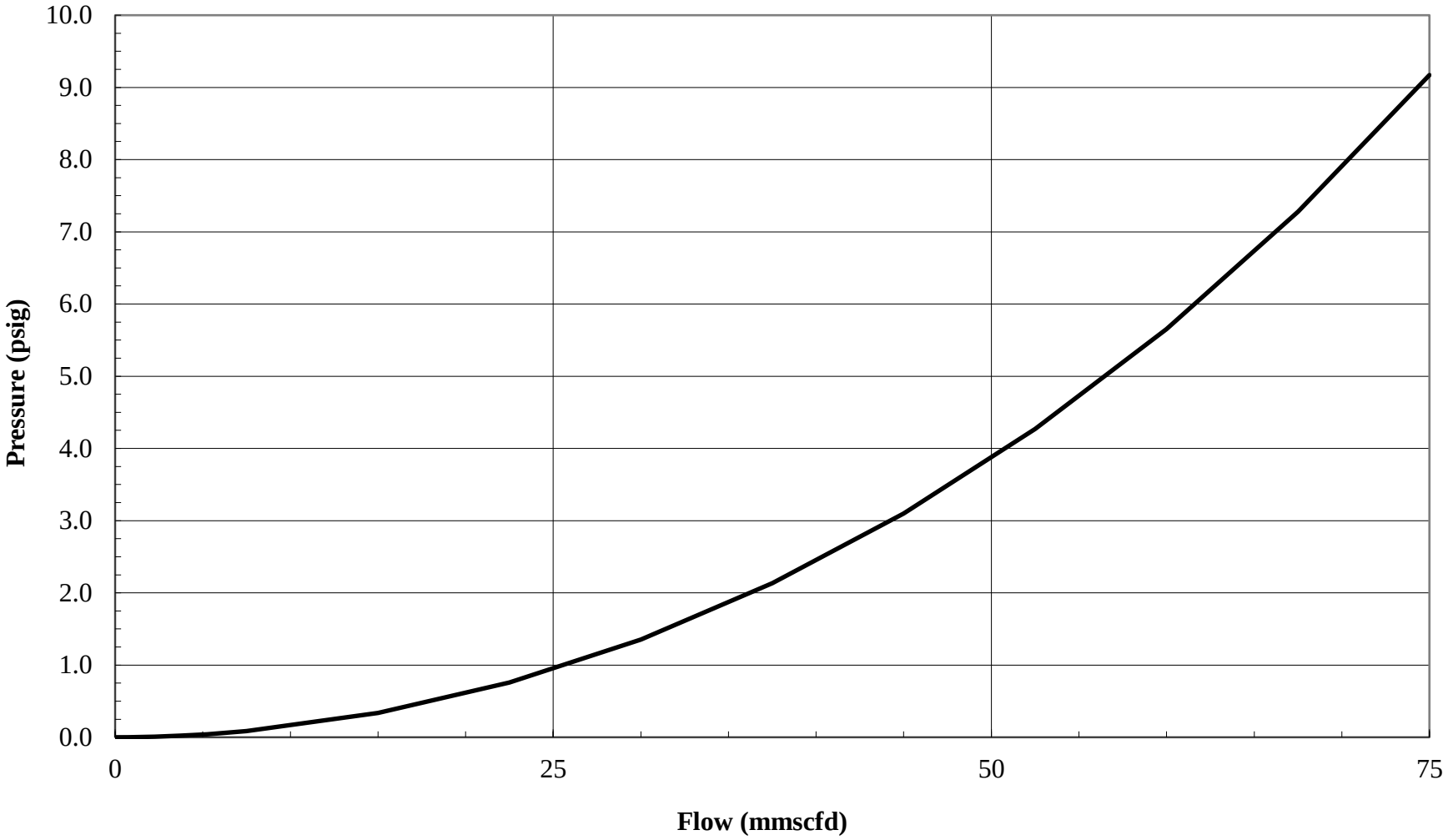
GBA Corona
Flares for the Future

Producers Midstream

White Wing Cryo Facility

Pressure vs. Flow Curve - LP 1

MW = 23
Temp = 0 deg F



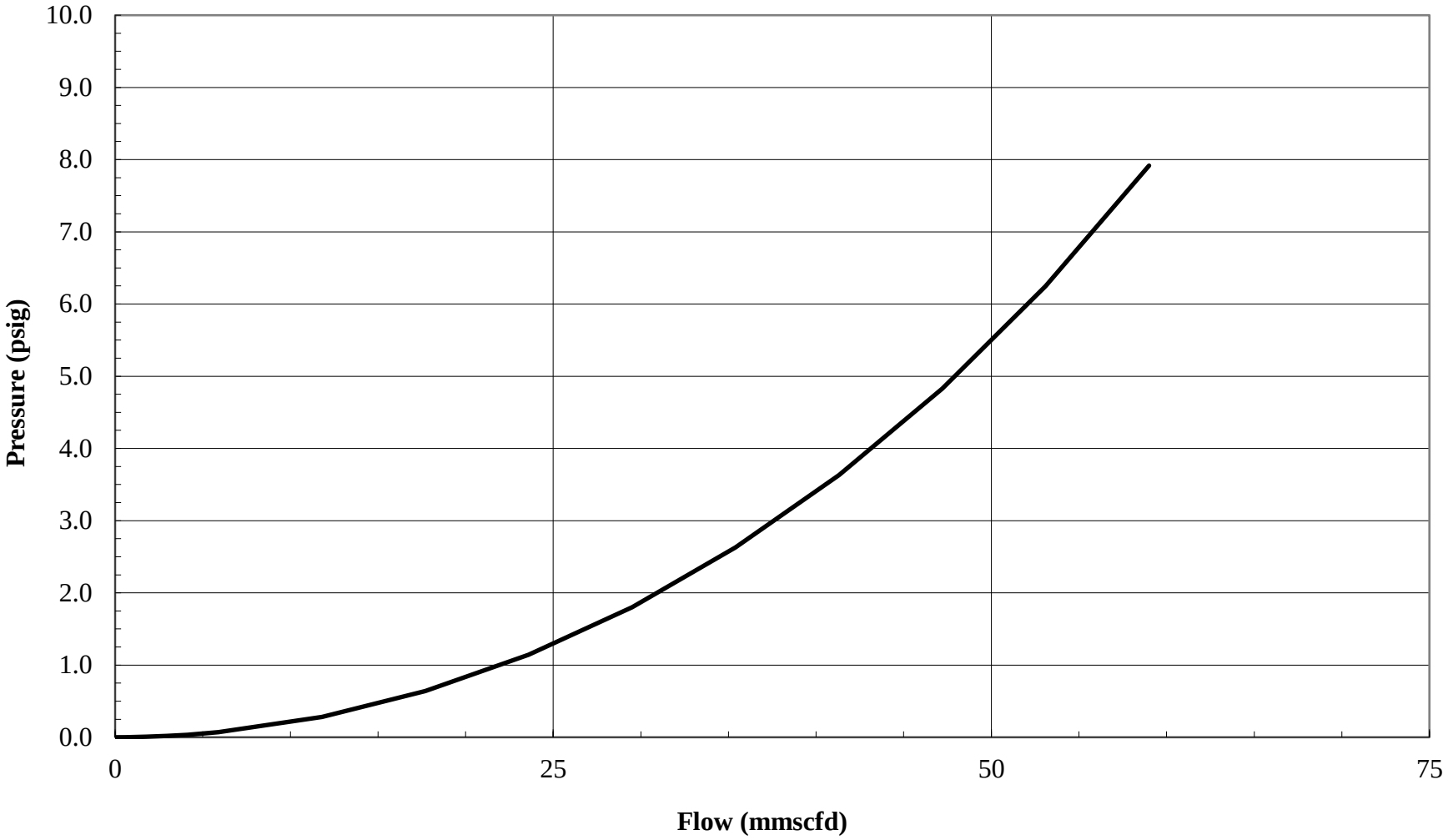
GBA Corona
Flares for the Future

Producers Midstream

White Wing Cryo Facility

Pressure vs. Flow Curve - LP 2

MW = 23
Temp = 0 deg F



GBA Corona
Flares for the Future

PANEL SPECIFICATIONS:
CHT-FI Electronic Ignitor

CORONA
REF. NO:
CF21.2863
March 24, 2021

PANEL TYPE

Ignition Method	*Electronic*
Auto Relight	*yes*
Flame Detection	*Flame Ionization*
Area Classification	*Unclassified*
Mounting	*Wall Mount*
Enclosure Material	*Stainless NEMA 4X*
Panel Purge	*none*

DIMENSIONS/WEIGHT (approx.)

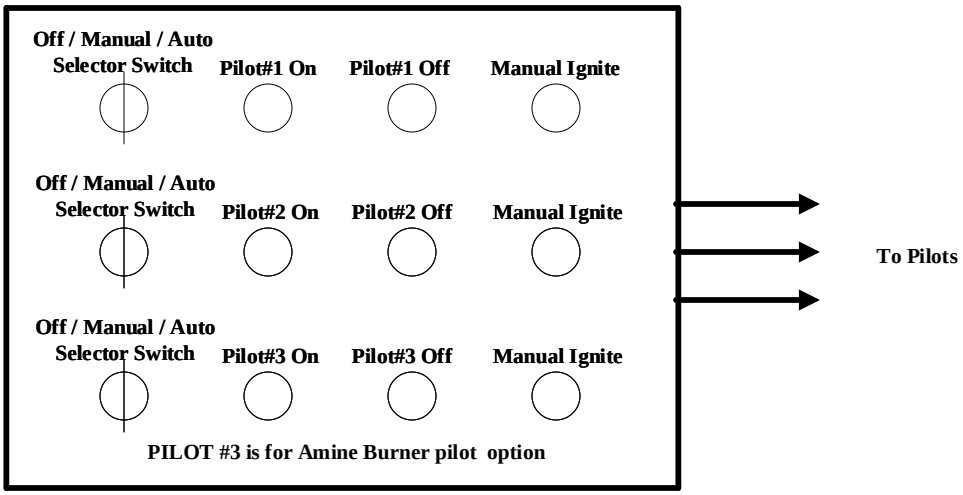
Weight	*250 LBS*
Dimensions (L x W x H)	*30" x 30" x 8"*

TERMINAL POINTS

Fuel Gas Inlet	*n/a*	**Ignition Cable**	*Binding Post*
Pilot Gas Inlet	*n/a*	**Terminal Strip**	*Allen Bradley 1492-4_*
Pilot Gas Out	*n/a*	**Remote Alarms**	*Dry Contacts*
Purge Gas Out	*n/a*	**Ignition Output**	*6 KV*
Flame Front Out	*n/a*		

PIPE SPECIFICATIONS

Pipe Size and Material	*n/a*
Connections / Fittings	*n/a*



This offer may not include all items show.

UTILITY REQUIREMENTS

Ignition Fuel Gas (ignition cycle)	*n/a*
Ignition Air (ignition cycle)	*n/a*
Pilot Fuel Gas (per pilot)	*n/a*
Purge Gas	*n/a*
Electric	*120VAC / 1 / 60Hz*

NON DESTRUCTIVE EXAMINATION

RADIOGRAPHY	*n/a*
ADDITIONAL NDE	*none*

SURFACE FINISH / PAINT (carbon steel)

SANDBLAST	*n/a*
PRIMER	*n/a*
TOP COAT	*none*

PANEL EQUIPMENT / INSTRUMENTS

Pilot Status Lights	*Six*
Manual Ignite Switch	*Three*
Selector Switch	*Three*
Alarms	*yes*
Wire Type	*16 AWG THHN*
Relays	*Allen Bradley Series 700*
Cerification Standards	*UL / FM*
3rd Party Certification	*none*
Purge Supplier	*n/a*
Ignition Control Module	*AB 1400/RSLogix500*
Flame Ionization	*Three*
Operators	*Killark*

PILOT SPECIFICATIONS:
CHT – CA (Combustion Assist LP)

GBA Corona
Flares for the Future

CORONA
REF. NO:
CF21.2863
February 12, 2021

UTILITIES

PILOT GAS FLOW (per pilot)	*100 SCFH*
PRESSURE	*15 - 25 psig*
MOLECULAR WEIGHT	*Clean Fuel Gas*
ELECTRICAL	*Ignition Cable for Panel - 6 kV*

DIMENSIONS (approx.)

HEIGHT	*6' - 0"*	**WIDTH**	*1' - 0"*
WEIGHT	*65 LBS*		

MATERIALS

PLOT NOZZLE / CA NOZZLE	*316L SS*
PILOT LINE	*316L SS*
IGNITION ROD	*Ceramic / Stainless Steel*

NON DESTRUCTIVE EXAMINATION

RADIOGRAPHY	*10 % of butt welds*
OTHER NDE	*none*

SURFACE FINISH / PAINT (carbon steel)

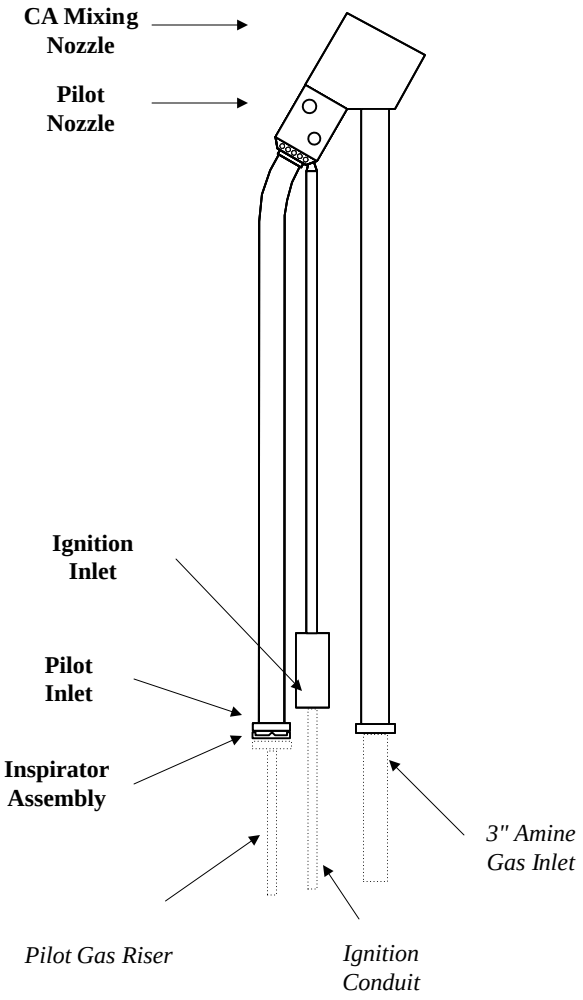
SANDBLAST	*SP-6*
PRIMER	*CZ-11 2-3 mil*
TOP COAT	*none*

GAS STREAM

LP Gas Flow	*0.2 mmscfd*
Molecular Weight	*21.0*
Pressure (Base of Stack) / Temperature	*0.6 psig / 100 deg F*

PILOTS

QUANTITY	*One*	**TYPE**	*Electronic*
THERMOCOUPLES	*n/a*	**TYPE**	*n/a*



This offer may not include all items show.

TERMINAL POINTS

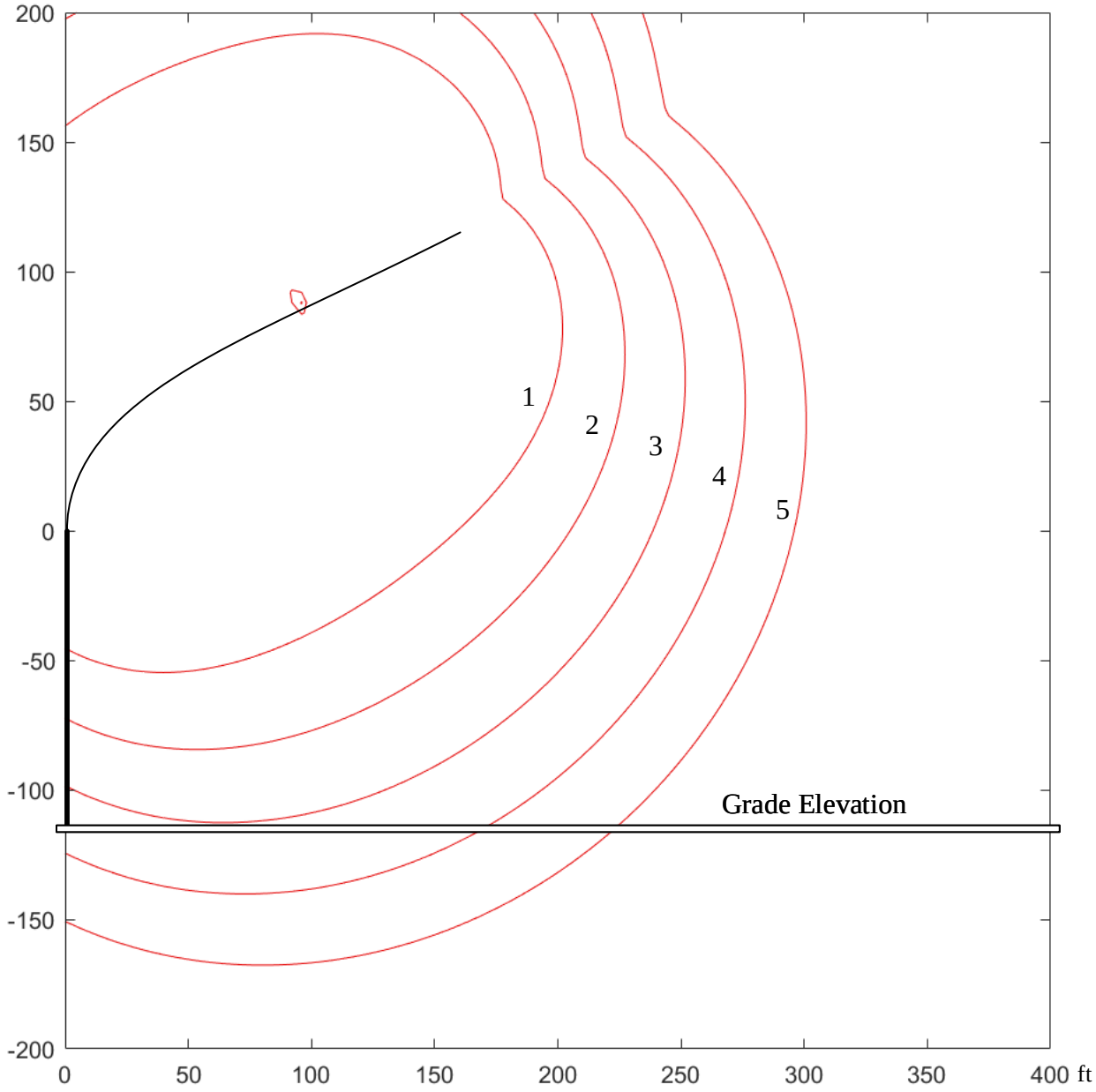
PILOT GAS INLET	*1-1/2"*	*Class 150 RFWN A-105*
IGNITION MANIFOLD INLET	*1/2"*	*FNPT*

Producers Midstream

White Wing Cryo Facility

CSF-RO-10 HP / PF-24 LP - 115' Overall Height

GBA-Corona Radiation Study



Flare	MW	Flow(mmscfd)
1	32	59

Wind = 20 MPH

Relative Humidity = 50%

Contour	Radiation
1:	3000
2:	2000
3:	1500
4:	1200
5:	1000
6:	500

Contours include 300 Btu/hr*ft2 solar

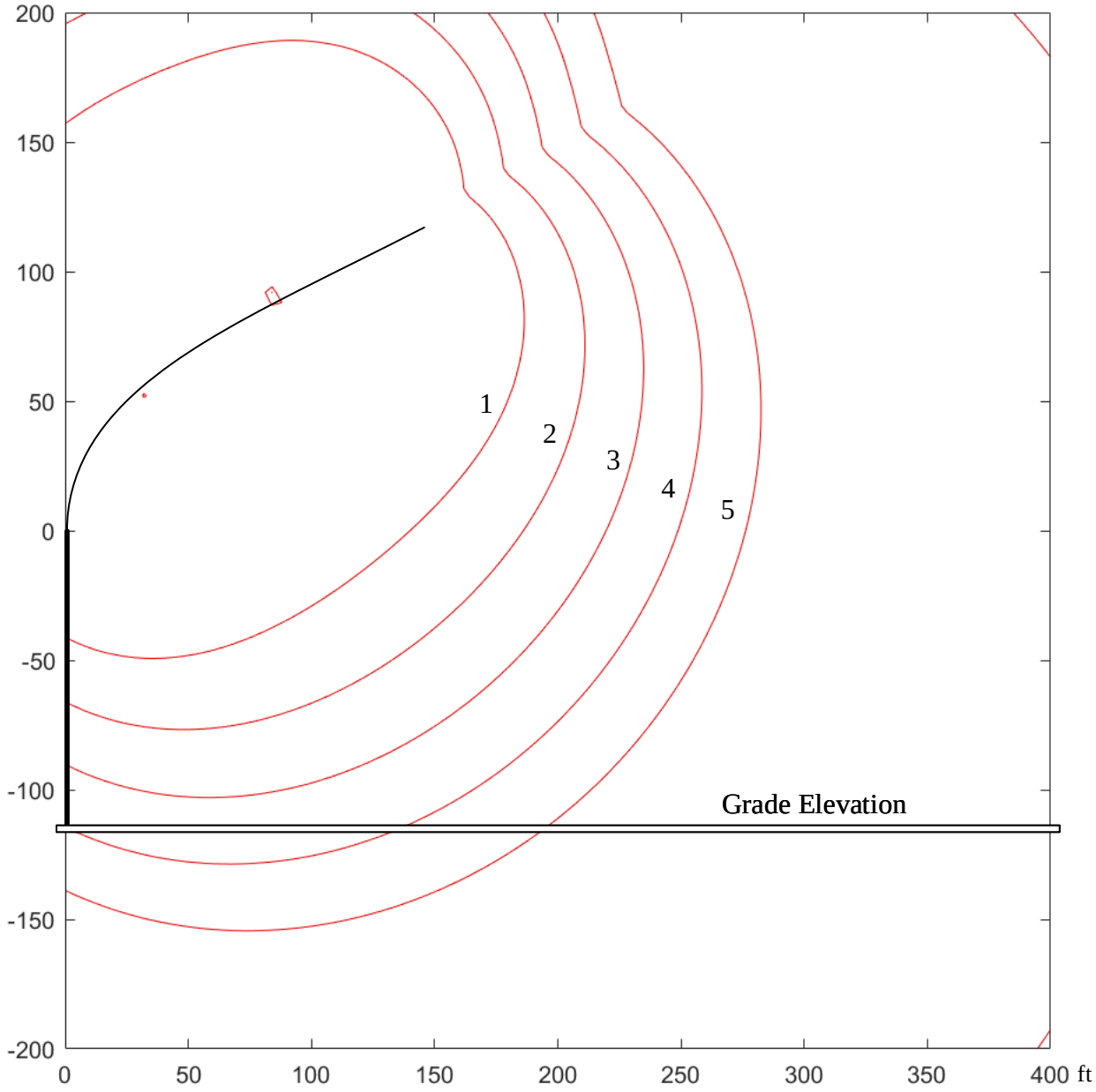
INQUIRY: CF 21.2863
2/10/2021
PLOT REF: 3-A LP Inlet 2

Producers Midstream

White Wing Cryo Facility

CSF-RO-10 HP / PF-24 LP - 115' Overall Height

GBA-Corona Radiation Study



Flare	MW	Flow(mmscfd)
1	23	75

Wind = 20 MPH

Relative Humidity = 50%

Contour	Radiation
1:	3000
2:	2000
3:	1500
4:	1200
5:	1000
6:	500

Contours include 300 Btu/hr*ft2 solar

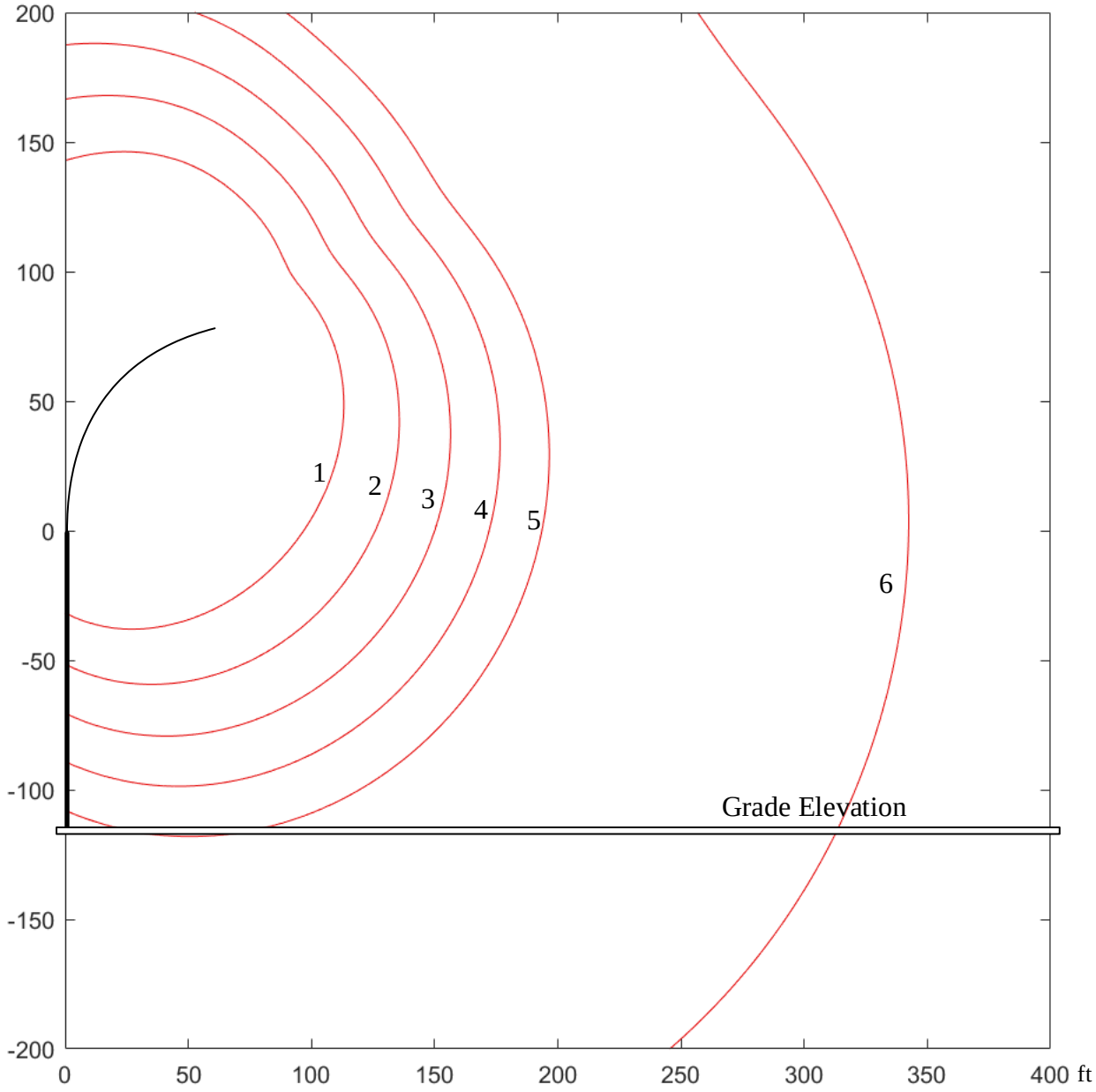
INQUIRY: CF 21.2863
2/10/2021
PLOT REF: 2-A LP Inlet 1

Producers Midstream

White Wing Cryo Facility

CSF-RO-10 HP / PF-24 LP - 115' Overall Height

GBA-Corona Radiation Study



Flare	MW	Flow(mmscfd)
1	21	60

Wind = 20 MPH

Relative Humidity = 50%

Contour	Radiation
1:	3000
2:	2000
3:	1500
4:	1200
5:	1000
6:	500

Contours include 300 Btu/hr*ft2 solar

INQUIRY: CF 21.2863
2/10/2021
PLOT REF: 1-A Max HP

GBA Corona
Flares for the Future

CSF SPECIFICATIONS:

CSF-12-RO - Sonic Flare – Variable Option

CORONA
REF. NO:
CF21.2863
March 24, 2021

PROCESS DATA

GAS STREAM	
FLOW MAXIMUM	*60 mmscfd*
FLOW MINIMUM	*PURGE*
MOLECULAR WEIGHT	*18.4*
TEMPERATURE	*97 ^{0} F*
INLET PRESSURE	*40 psig*
SMOKELESS CAPACITY	*60 mmscfd*

DIMENSIONS (approx.)

HEIGHT	*10' - 0"*	**WIDTH**	*1' - 0"*
WEIGHT	*450 lbs (fixed) / 650 lbs (variable)*		

MATERIALS

MAIN BODY	*316L SS*
CSF INSERT	*316L SS*
PILOT	*316L SS*
PILOT NOZZLE	*CK20*
LIFTING LUGS	*316L SS*
PILOT MANIFOLD	*n/a*
IGNITION MANIFOLD	*n/a*

NON DESTRUCTIVE EXAMINATION

RADIOGRAPHY	*10% of butt welds*
OTHER NDE	*none*

SURFACE FINISH / PAINT (carbon steel)

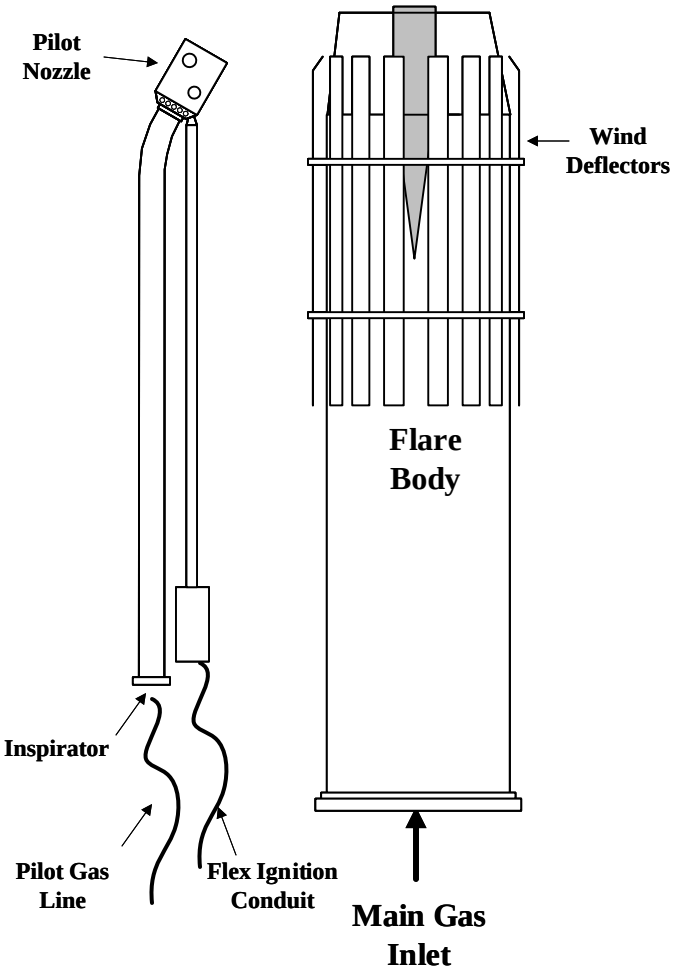
SANDBLAST	*SP-6*
PRIMER	*CZ-11 2-3 mil*
TOP COAT	*High Heat Aluminum*

UTILITIES

PILOT FUEL GAS	*100 scfh (per pilot)*
PURGE GAS	*n/a (water seal at base)*

PILOTS

QUANTITY	*One*	**TYPE**	*CHT Electronic*
THERMOCOUPLES	*n/a*	**TYPE**	*n/a*



This offer may not include all items show.

TERMINAL POINTS

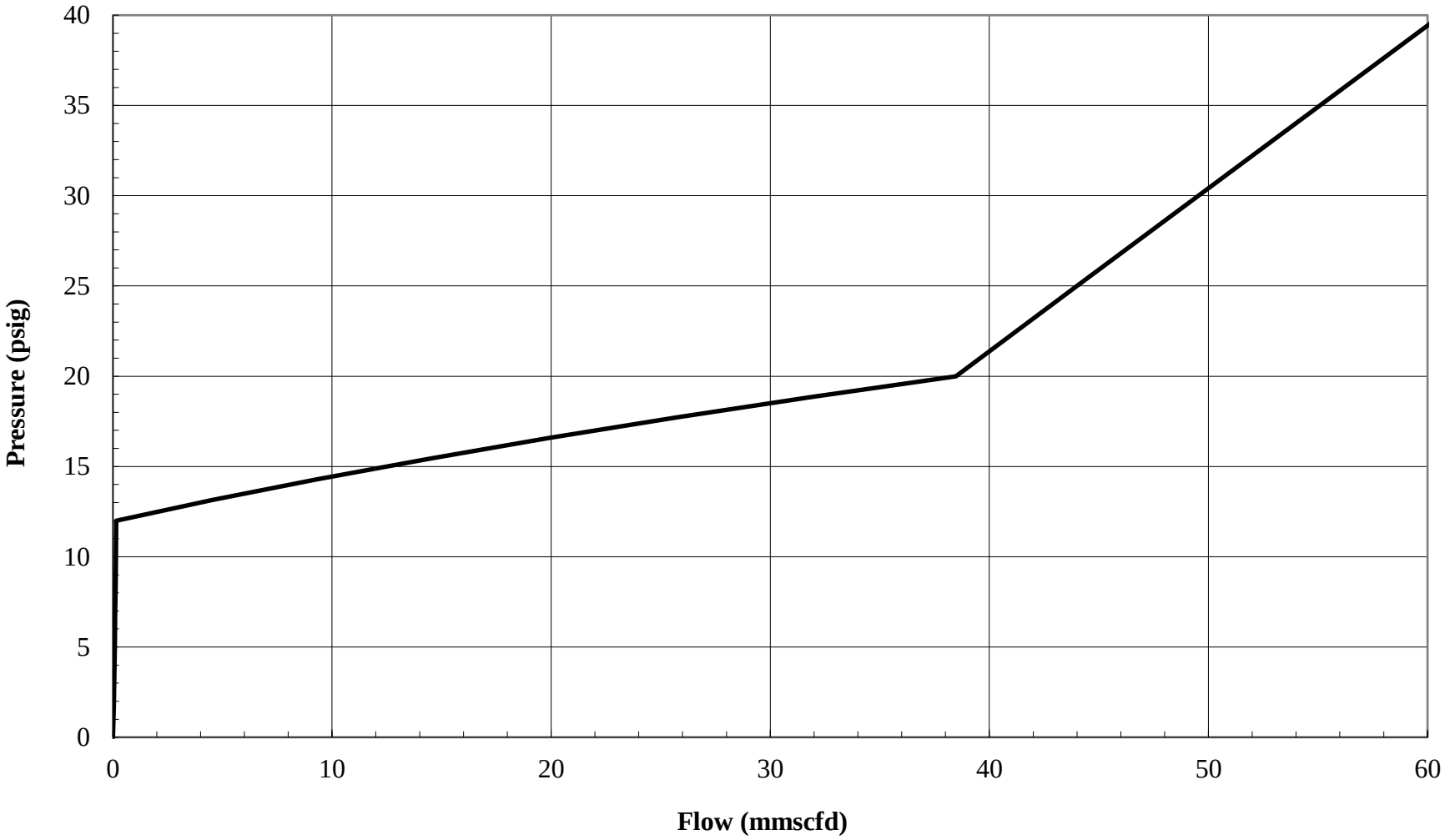
GAS INLET	*12"*	*Class 150 RFWN A-105*
IGNITION INLET	*1-1/2"*	*FNPT*
PILOT INLET	*1"*	*Class 150 RFWN A-105*

Producers Midstream - White Wing Cryo Facility

CSF RO-10 VSF Sonic Flare

Pressure vs. Flow Curve

MW = 21
Temp = 97 deg F



INSPECTION TEST PLAN

ITP No.: Sample
Rev. 0 **Date:** 6/4/2020

Purchase Order No.: TBD
Requisition No.: TBD
Tag No.: TBD

Client: TBD
Project Name: TBD
Site / Facility: TBD
Project No.: TBD
DRL Code: -

Item	INSPECTION ITEM	BA Insp. Code	Initial & Date	CLIENT Insp. Code	Initial & Date	END USER Insp. Code	Initial & Date	Type of Cert	Remarks / Acceptance Criteria
1	Pre-Production Meeting	H		H				Q2	Purchase Order and PPM Agenda
2	Materials (MTR's)	R		R				M1	Cert per ASME
3	WPS & PQR & WQR	R		R				C1	Per AMSE IX, Approved procedures and Welder Records.
4	Trace, Cut & Weld preparation	S		S				C1	Dimensional check, Visual, per project drawings
5	Trace, Cut & Welding	R		R				C1	Visual check, per Weld Procedures
6	Dimensional check after Weld	R		R				T1	Dimensional check, per project drawings
7	PT	R		R				C1	As applicable
8	RT	R		R				T1	As applicable
9	Small Bore Piping - Hydro	W		R				T1	GBA-Corona Hydro Procedure
10	Blast Profile	R		R				T1	As applicable
11	Paint coat	R		R				T1	As applicable
12	Trial Assembly	H		R				T1	Per Drawings
13	Weight	H		R				T1	In Shop
14	Ignition Control Panel - Assembly	R		R				T1	Per Drawings
15	Ignition Control Panel - FAT	H		R				T1	GBA-Corona FAT Procedure
16	Ignition Control Panel - NRTL	R		R				M1	If needed
17	Miscellaneous (Cables, Instruments, Etc.)	R		R				C1	Per PO's and BOL
18	Crating and Shipping	R		R				C1	As applicable
19	Quality Book	R		R				C1	Per GBA Standard
20	Final Inspection	H		H					
21	Inspection Release	H		H				C1	

INSPECTION TEST PLAN

ITP No.: Sample
Rev. 0 **Date:** 6/4/2020

Purchase Order No.: TBD
Requisition No.: TBD
Tag No.: TBD

Client: TBD
Project Name: TBD
Site / Facility: TBD
Project No.: TBD
DRL Code: -

Item	INSPECTION ITEM	BA Insp. Code	Initial & Date	CLIENT Insp. Code	Initial & Date	END USER Insp. Code	Initial & Date	Type of Cert	Remarks / Acceptance Criteria
22	Withness Shipping	H		H				C1	

Comments:

Sign: _____ Date: _____

( )ACTIITY

R:	Certification Review
S:	Surveillance Point
M:	Monitor
W:	Witness point; request to be transmitted 03 working days in advance.
H:	Hold point; request to be transmitted 05 working days in advance.
A/N	Not Applicable

( ) TYPE OF CERTIFICATE

M --	Material Certificate
C --	Conformance
T --	Test and check
Q --	Qualify
1 --	To be add in the final quality book
2 --	GBA record only

This list is provided to identify documents to be prepared. Documents will be provided for information purposes. No review process is considered.

Combustion Engineering & Design

GBA CORONA

Flares For The Future

□BA-Corona □□ENDOR□DOCUMENT RE□ISTER

VDR Issue Date::	MM/DD/YYYY
Document Number:	□DR-YR
VDR Revision:	□
GBA Corona Project Number:	CP YR □□□
GBA Corona Quote Number:	CF YR RE□ □
Purchase Order Receipt Date:	MM/DD/YYYY

Customer Name:	
Project Name:	
Customer PO No:	A□□A□□

□BA Corona (a/k/a Corona Flares)
77 Sugar Creek Center Blvd. Suite 180
Sugar Land, Texas 77478
Phone: 713-773-9933 and Fax: 713-773-9940

□BA Corona Contacts		Customer Contacts	
Name	email	Name	email
Name	email	Name	email

Color Status Key □□□ Approved | Customer Pending | Need to Submit / Resubmit | OPEN - Not Yet Actioned

□BA-Corona Document Number	□BA-Corona Document Name	Submitted for:	Customer Document Code	Current Revision	Planned Submittal Date	□endor Comments: Transmittal History / Status (always include dates)	Status
	PRO□ECT CONTROL DOCUMENTS						**S0**
	Vendor Document Register	For Information	-		2 Weeks ARO		
	Project Schedule	For Approval	-		2 Weeks ARO		
	FLARE SYSTEMS OPERATIONS and DATASHEETS						**S1**
	Installation, Operation and Installation	For Approval	-		6 weeks ARO		
	Equipment Datasheets for Flares, CHT	For Approval	-		6 weeks ARO		
	Final Data Book (Includes IOM, MTR's,	For Information	-		6 weeks ARO		
	FLARE SYSTEM DESI□N DATA & CALCULATIONS						**S2**
	Design Data: Radiation, Pressure vs.	For Approval	-		6 weeks ARO		
	Calculations (Flare Stack Design Report)	For Approval	-		6 weeks ARO		
	Utility List	For Approval	-		6 weeks ARO		
	Piping & Instrumentation Diagram	For Approval	-		6 weeks ARO		
			-				
	SPARE PARTS AND CUSTOMER SER□ICE						**S□**
	Spare Parts List (includes	For Approval			6 weeks ARO		
	Technical / Engineering POC:	For Information			Final Data Book		
	Project Manager POC:	For Information			Final Data Book		
	Project Coordinator POC:	For Information			Final Data Book		
	QA / QC INSPECTIONS and PROCEDURES						**S4**
	Weld Procedures with supporting PQR's	For Approval	-		6 weeks ARO		
	Paint Procedures / Specification	For Approval	-		6 weeks ARO		
	Inspection Test Plan	For Approval	-		6 weeks ARO		
	NDE Procedures (RT, UT, PT, VT, PMI,	For Approval	-		6 weeks ARO		
	Factory Acceptance Test Procedures-	For Approval	-		6 weeks ARO		
	Factory Inspection Procedure Pilot for	For Approval	-		6 weeks ARO		
	Hydostatic Test Procedure	For Approval	-		6 weeks ARO		
	Quality Assurance Plan	For Approval	-		6 weeks ARO		
	QA / QC INSPECTION REPORTS						**S5**
	Factory Acceptance Tests Reports:	For Information			Included in Final		
	Production QA/QC Documents and	For Information			Included in Final		
	3rd party Certification (if applicable)	For Information			Included in Final		
	NTRL Certificates for Components (If	For Information			Included in Final		
	ISO9000:2015 Certificate	For Information			Included in Final		

Combustion Engineering & Design

GBA CORONA

Flares For The Future

□BA-Corona □□ENDOR□DOCUMENT RE□ISTER

Customer Name:		VDR Issue Date::	MM/DD/YYYY
Project Name:		Document Number:	□DR-YR
Customer PO No:	A□□A□□	VDR Revision:	□
		GBA Corona Project Number:	**CP** YR □□□
		GBA Corona Quote Number:	**CF** YR **RE**□ □
		Purchase Order Receipt Date:	MM/DD/YYYY

□BA Corona (a/k/a Corona Flares)
77 Sugar Creek Center Blvd. Suite 180
Sugar Land, Texas 77478
Phone: 713-773-9933 and Fax: 713-773-9940

□BA Corona Contacts		Customer Contacts	
Name	email	Name	email
Name	email	Name	email

Color Status Key □□□ — Approved | Customer Pending | Need to Submit / Resubmit | OPEN - Not Yet Actioned

□BA-Corona Document Number	□BA-Corona Document Name	Submitted for:	Customer Document Code	Current Revision	Planned Submittal Date	□endor Comments: Transmittal History / Status (always include dates)	Status
	Final Factory Inspection (Mechanical	For Information			Included in Final		
	Bolt Torque Report (if required)	For Information			Included in Final		
	Weight / Lifting Report (if required)	For Information			Included in Final		
DRAWIN□ PACAK□E							**S6**
	General Arrangement (Equipment per the	For Approval	-		6 weeks ARO		
	Flare - Bill of Materials	For Approval			6 weeks ARO		
	Flare - Pilot(s)	For Approval			6 weeks ARO		
	Flame Front Generator	For Approval			6 weeks ARO		
	Weld Map	For Approval			6 weeks ARO		
	NDE Map	For Approval			6 weeks ARO		
	Lifting Diagram	For Approval			6 weeks ARO		
	Nameplate(s)	For Approval			6 weeks ARO		
	Ignition Control Panel - MECH	For Approval			6 weeks ARO		
	Ignition Control Panel - ELEC	For Approval			6 weeks ARO		
	Snuffing System P& ID	For Approval			6 weeks ARO		
	Sunffing System General Arrangement	For Approval			6 weeks ARO		
	Snuffing System Electrical	For Approval			6 weeks ARO		
SUB-□ENDOR EQUIPMENT / COMPONENTS							**S□**
	Blower data package including motor	For Approval			6 weeks ARO		
	Sub Vendor Component Information	For Information			Included in Final		

Combustion Engineering
& Design

GBA CORONA
Flares For The Future

February 5, 2025

Producers Midstream
10810 County Road 4105
Hermleigh, TX 79526

Attn: Jake Matheson

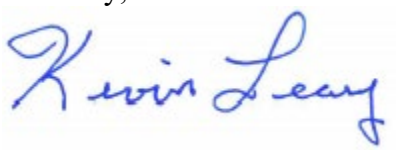
Subject: The Dude Processing Plant Flare
GBA Corona Project No CP21.707

Dear Matheson,

GBA-Corona is the OEM of the flare system. This HP Flare is a pressure assisted flare. Pressure assisted flares have been incorporated in the MACT CC requirements as of 2020. This requires that the flare gas be >800 BTU/SCF with a continuous monitored pilot. This provides assurance of > 98% DRE and meets the requirements for elevated flares per QUAD O requirements.

If you have any questions, please feel free to contact us.

Sincerely,



Kevin Leary
Director, Flare Applications

AGI-FLARE Manufacturer Specification Sheets

Design Data Sheet

Design Flow Rate

Flare Rate Case	Flow (MMSCFD) / #/hr	Molecular Weight	LHV (Btu/scf)	Pressure @ Max Flowrate	Temp. (°F)
CO2	15 / 68,000	41.37	35*	< 15	Amb.
Assist Gas*	2.5 / 6,200 *(rev 1)*	22	1,250		
*Assist gas required to raise LHV to 200 Btu/scf per EPA guidelines. Hero has found over the years that regardless of the flare mfg., often times the flare will perform better in high wind conditions utilizing a LHV between 250 to 300 Btu/scf.					

Site Conditions

Wind	120 MPH	Temperature	0 to 120 °F	Elevation	14.5 Psi

Site Utilities Required

Pilot Gas (per pilot)	Natural Gas: 55 scfh @ 18 psig OR Propane: 25 scfh @ 9 psig (Clean, dry gas)	
Plant Air	No Plant Air Required	
Pilot Panel Electricity	120V / 1 Phase / 10 Amps is required to operate pilot ignition system	
Blower / VFD Electricity	No blower included with this offer	Blower Size: N/A

Emission / Flare Performance

Destruction	A 98% or greater hydrocarbon destruction efficiency will be achieved
Smokeless Rate	100% Smokeless
Max Radiation	Less than 500 Btu/hr/SF at normal & 1500 Btu/hr at max flow rates
Tip Velocity	Meets EPA regulations over full operating range

Pilot Construction

Electrical / Classification	120VAC / Non-classified area
Control Panel Type	Nema 4 (Painted)
Pilot(s)	Three (3) Stainless Steel Gas Pilot with Retractable T/C & HEI Probe
Pilot Construction	Stainless Steel
Pilot Monitoring	Type K Thermocouple
Pilot Gas Connection	½" FNPT Located at Base of Flare

Flare Construction

Component	Dimension	Material
Stack Height	198'	Carbon Steel
Flare tip	5' Long	Stainless
Tank Vapor Flare Inlet	18" Flanged (note 1)	Carbon
note 1: Hero can adjust inlet flange to match flare header size.		

Equipment Description *(Ignition System)*

Sentinel Pilot Ignition System (HS)

Our Sentinel ignition system is engineered to provide the most reliable flare pilot ignition source for unforgiving harsh environments. The ignition system utilizes High Energy Ignition (HEI) technology which is superior to traditional high voltage systems that other flare suppliers provide.

The Sentinel ignition system consists of a pilot that is constructed out of stainless steel and is controlled by an ignition panel that will automatically monitor and re-ignite the pilot in the event of a pilot flame failure. The Hotspot Ignition System consists of the following:

- Pilot construction 100% stainless steel.
- High stability pilot flame in the most severe environments (i.e., high winds, snow, rain).
- Automatic spark ignition system with continuous 24/7 flame monitoring.
- Modbus interface capabilities with remote pilot status.
- An Ignition control panel mounted on a self-supported control rack.
- Ignition control panel to operate on 120VAC.
- Pilot gas regulator with gauge shop mounted at base of the flare.
- Operates on natural gas or propane (no hardware changes required).
- Fully EPA compliant.

Retractable System (EZ-TC)

The Sentinel pilot ignition system is designed to allow operations to access the HEI and thermocouple from grade level without the need for manlift. The retraction system utilizes a pusher that is positioned at the base and flare and allows operation to remove and / or install new consumables (i.e. HEI & Type K thermocouple) as needed throughout the operation of the flare system.

Equipment Description *(Flare Technology)*

Flare Tip (U30)

The flare system is equipped with a stainless-steel utility flare tip that includes flame stabilizers to ensure flame stability over the full operating range. This design has been used on thousands of gas flares and has proven to be extremely reliable. The flare tip includes:

- Stainless steel upper tip section for temperature and corrosion resistance.
- Flame stabilizers for good destruction efficiency at high Mach flow rates.
- Pilot support brackets.

Guy Supported Utility Flare Stack (G198)

The flare height for the given flow rate conditions *(see design datasheet above)* is properly sized to not exceed industry standards for ground level radiation. The flare stack will include:

- Guy wire supported stack.
- Sandblast, prime and finish coat (color: Tannery).
- Mechanical drawings and operating manual.
- Complete structural calculations for the stack, lifting trunnions and base ring. Finite element analysis of the inlet nozzle and lifting trunnions. For the record, not for approval.

Guy Wire Kit

The flare system is provided with a guy wire kit to ensure the site crew has everything needed to properly secure the flare stack in-place during the erection process. The guy wire kit also includes screw auger anchors to allow for easy installation without the need for digging holes and / or pouring concrete.

- Four (4) guy wire cables with all necessary turn buckles, wire clamps and clips.
- Four (4) Deadman guy wire ground screw anchors (by others).

Optional Equipment *(Pilot Scrubber)*

Design Parameters	
Scrubber length:	36”
Scrubber Diameter:	8”
Support System:	Bolt to skid
Design:	ASME Section VIII
Code Stamp:	None
MAWP:	250 psig
Paint System:	Blast / 2 Coat Mfg. Std.

Connections Included	
Inlet:	1/2” NPT
Outlet:	1/2” NPT
Drain:	1/2” NPT

Flare Manufacturing Standards

The fabrication shop maintains quality control documentation and welder's qualifications which are available for our client's review. Inspectors have access to the facility upon short notice.

General Industry Standards

Welding - Structural:	ASME B31.3 AWS D1.1	Pipe Flange: Pipe Threads:	150 Lb. ANSI NPT
Weld Inspection: Drawing Dimensions:	ASME V English	Electrical Wiring: Structural Design:	NEC ASCE latest version

Non-Destructive Testing

Dimensional Check:	All exterior and mounting dimensions
All Welds:	100% Visual Inspection
Radiography/NDT	Per client spec at client cost
Hydrostatic testing:	Not applicable for flares.
Material certificates:	All stainless steel.

Painting

Component	Sandblast	Shop Paint
Carbon Steel Stack	SSPC-SP 6	Prime Coat /Topcoat
Valves and Control Panel	Manuf. Std.	Manufacturers Standard
Stainless steel	None	None

Documentation

Supplied by HERO with Each Job	Supplied Upon Request
Complete Drawing Package	Fabrication Specification
Operating & Maintenance Manual	Paint Specification
Radiation Curves	Structural Calculations *(For Record Only)*
	Design Summary Specification
	Welding WPS / PQR
	Material Certificates

Flare Design

Date:	6/2/2025
Engineer:	C Rosencutter

End User:	Producers Midstream	
Gas Case:	Mix - Case 1	Sales Gas

Design Basis (Site Conditions)		
Wind Speed	20	mph
Patm	14.696	psia
RH	50	%

Flare Design	Flare Type	
Stack Height	198	ft
Flare Tip Dia	30 STD	inch

Operating Parameters

Q (MMSCFD)	Mdot (lb/hr)	MW (lb/lbmol)	P (psig)	Temp (˚F)	LHV (btu/scf)	LHV (Btu/lb)	Q (Btu/hr)
17.5	74,214.1	38.7	15.0	113	207.67	2037	1.51E+08

Arrestor Pressure Drop @ Design Flow Rate

Connection Size	Arrestor Model	Type	Model Name	dP (psig)	P (psig)
-	None	-	-	0.0000	0

Flare Performance		
Tip Delta P :	0.056	P (psig)
Flare Pstatic at Inlet	0.08	P (psig)
Flare + Arrestor Delta P:	0.08	P (psig)
Mach No. :	0.05	Mach
Tip Velocity:	51.1	Standard ft/s
Flare Technology Type:	Utility	

Recommended Purge Rate		
Seal Type:	Velocity Seal	Type
Flow:	712.50	SCFH

Destruction Efficiency (DRE)		
DRE	98%	Maximum
DRE	95%	Minimum

Radiation at Grade POI Including 300 btu/hr-ft2 of Solar	
Radiation Level (btu/hr-ft^2)	Distance from Stack (ft)
500	Not Experienced at Grade
1000	Not Experienced at Grade
1500	Not Experienced at Grade

Radiation Calculations		
API Simple Method		
Fl Midpoint	24	ft - Horizontal
Fl Midpoint	202	ft - Vertical
API Flame L	52	ft
Solar Radiation	300	btu/hr-ft^2

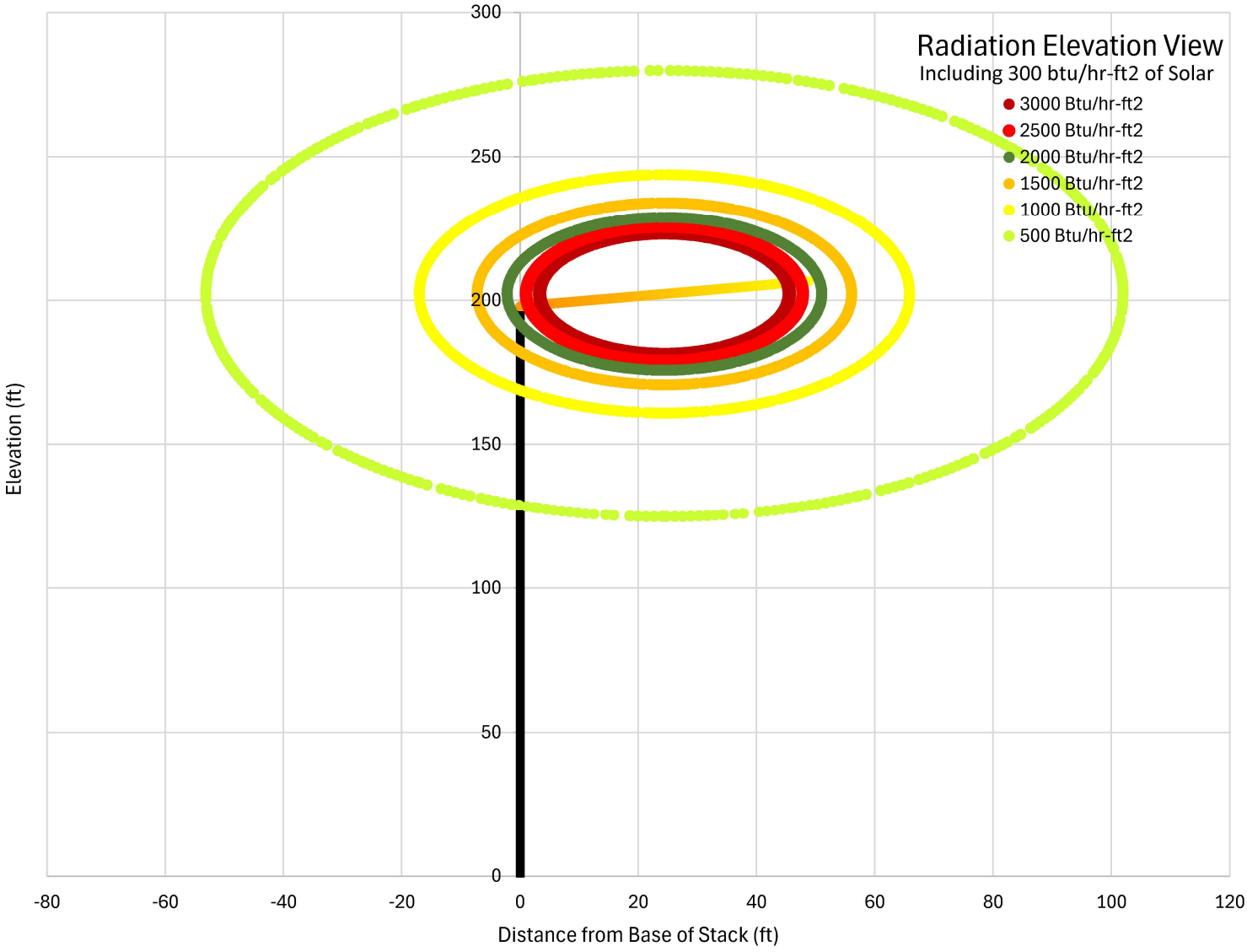
Maximum Radiation at Grade Excluding 300 btu/hr-ft2 of Solar

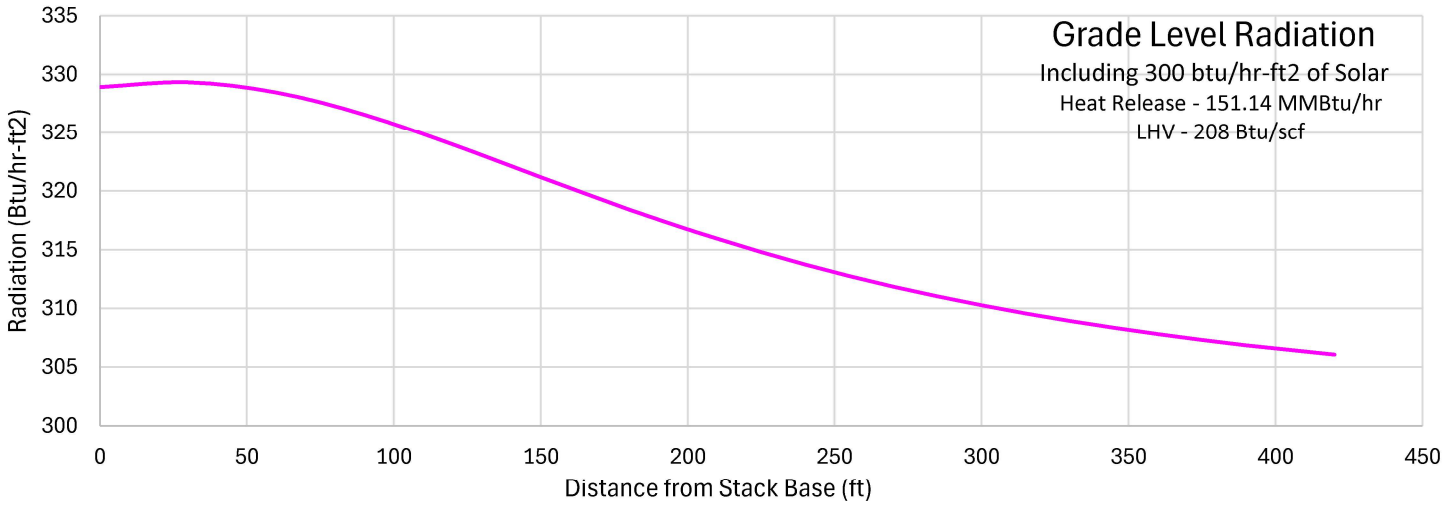
Maximum Radiation	30	btu/hr-ft2	24	ft from Stack

Radiation POI w/ Elevation Including 300 btu/hr-ft2 of Solar

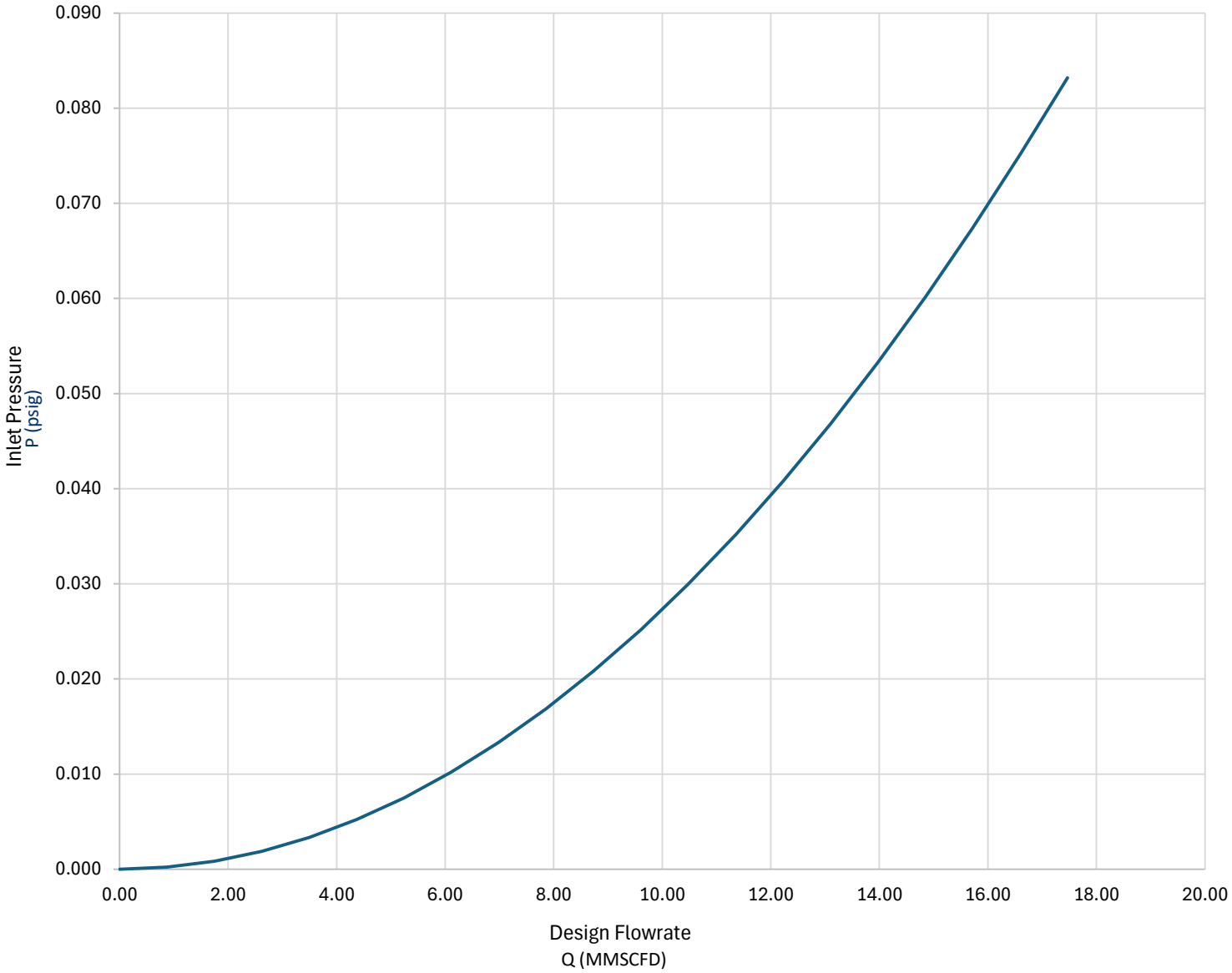
Location	Distance from Stack (ft)	Elevation (ft)	Radiation (btu/hr-ft2)	Distance from Midpoint (ft)
Max Radiation	24	0	330	202

Additional Notes


Radiation Elevation View
Including 300 btu/hr-ft2 of Solar
3000 Btu/hr-ft2
2500 Btu/hr-ft2
2000 Btu/hr-ft2
1500 Btu/hr-ft2
1000 Btu/hr-ft2
500 Btu/hr-ft2
Elevation (ft)
300
250
200
150
100
50
0
-80
-60
-40
-20
0
20
40
60
80
100
120
Distance from Base of Stack (ft)


Grade Level Radiation
Including 300 btu/hr-ft2 of Solar
Heat Release - 151.14 MMBtu/hr
LHV - 208 Btu/scf
Radiation (Btu/hr-ft2)
335
330
325
320
315
310
305
300
0
50
100
150
200
250
300
350
400
450
Distance from Stack Base (ft)

Pressure Versus Flow



Flow versus Pressure Parameters					
Flare Type	Flare Type		Inlet Pressure at Max Flow	0.1	P (psig)
Design Flowrate	17.5	Q (MMSCFD)	Based on a MW of	38.69	lb/lbmol
Does Not Include Arrestor					
Please note pressure versus flow curve above is a preliminary estimate based on quote design					

Additional Notes

COMB-1 and COMB-2 Manufacturer Specification Sheets



30PFC

30-INCH COMBUSTOR
EMISSIONS PERMITTING DATA

Table of Contents

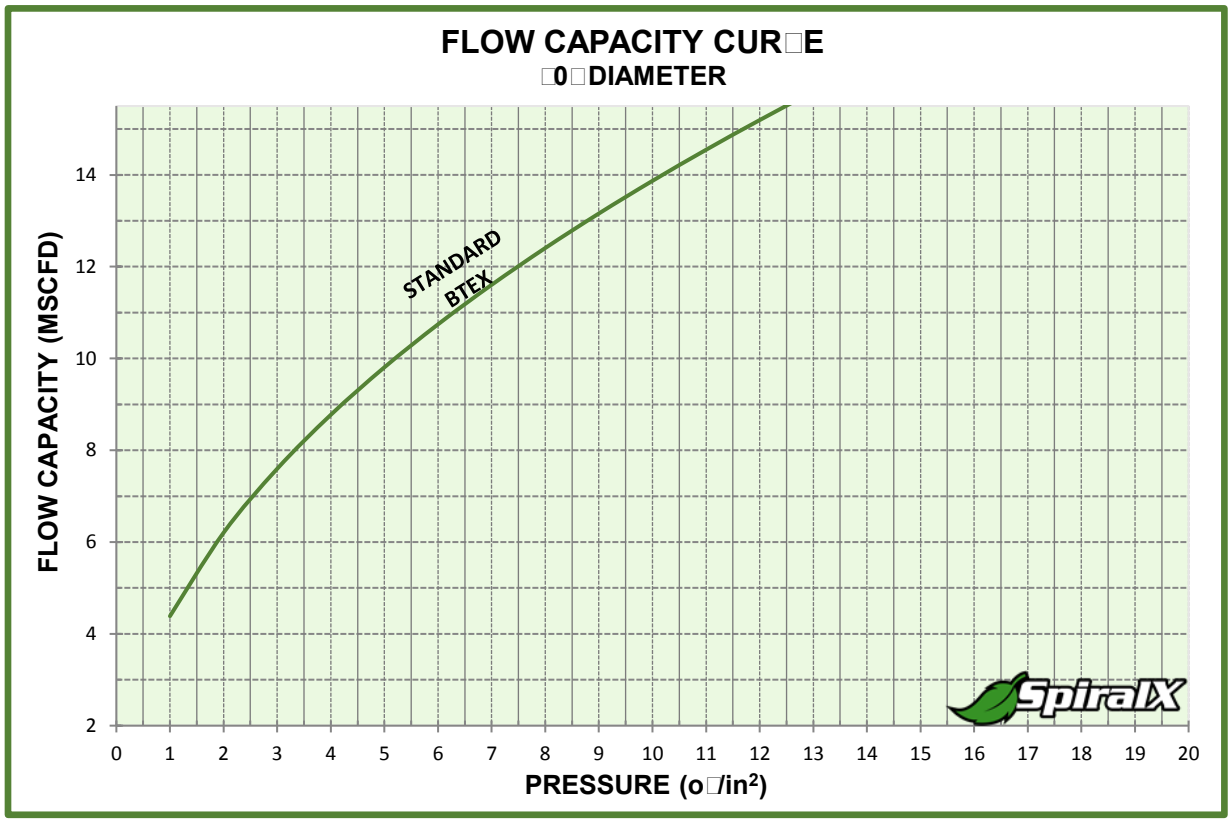
1 | INTRODUCTION 3
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2 | DIAGRAMS & DRAWINGS 4
2.1 | Piping and Instrumentation Diagram (P&ID) 4
2.2 | General Arrangement of Unit 6

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1 □INTRODUCTION
□0PFC

SpiralX LLC 30” enclosed combustors designed for the destruction of volatile organic compounds (VOCs) at rates greater than 95%, and compliant with regulations governing upstream oil and gas facilities (40 CFR 60, Subpart OOOOa) and gas dehydration facilities (40 CFR 63, Subparts HH and HHH). Profire™ Burner Management System used for pilot flame.

1.1 □Performance Curves



Flow capacity curve of BTEX for 30” diameter combustor as a function of pressure.

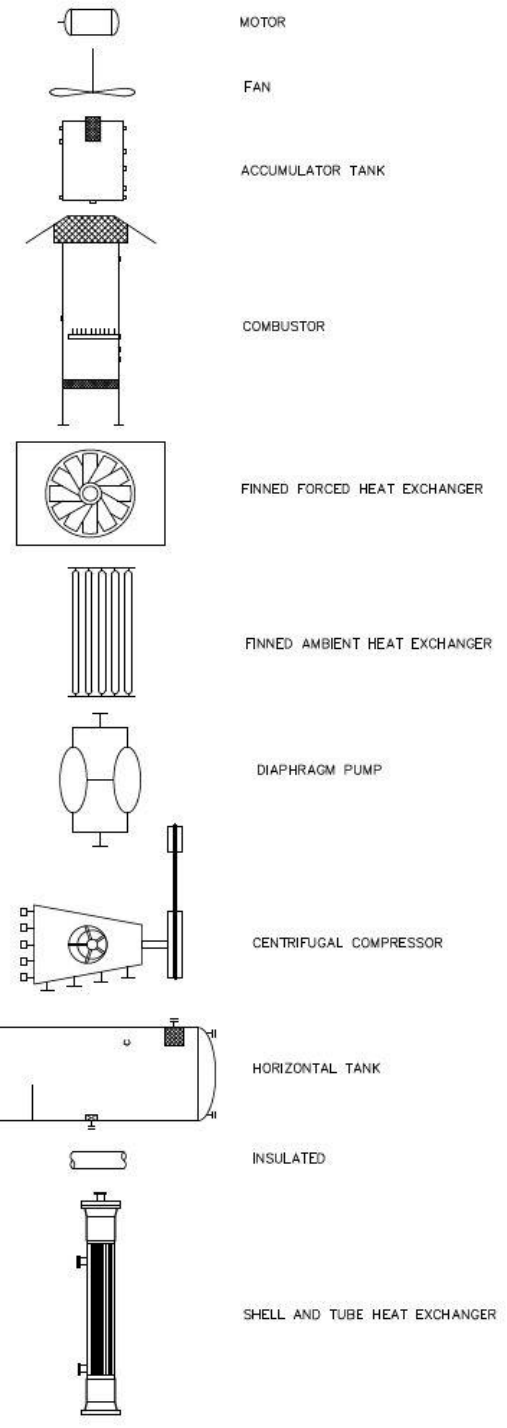
1.2 □Specifications

Pilot Gas Used: 14-17 CFH @ 5-7 PSIG

Destruction Efficiency: TESTED to 99% efficiency, USED at 95% efficiency.

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BALL VALVE
NEEDLE VALVE
CHECK VALVE
THREE WAY VALVE
PLUG VALVE
SOLENOID MANUAL RESET
BACK PRESSURE REGULATOR
GATE VALVE
GLOBE VALVE
KNIFE VALVE
STOP CHECK VALVE
DIAPHRAGM VALVE
SOLENOID VALVE
ANGLE VALVE
FOUR WAY VALVE
PINCH VALVE
BUTTERFLY VALVE
GRAVITY FLOW
GAP
FLOW ARROW
INCOMING/DEPARTING THE FACILITY
WATER LEVEL
CONCENTRIC REDUCER
ECCENTRIC REDUCER
CAP
FLANGED CONNECTION
HOSE CONNECTION
FLAME ARRESTOR
PRESSURE SAFETY VALVE
SCREWED UNION CONNECTION



VALVE IDENTIFICATION

VALVE FACING
VALVE TYPE
VALVE SIZE
VALVE CLASSIFICATION (FLG OR PRESSURE RATING)
VALVE SPECIALITY TYPE (OPTIONAL)

2" B J E (F)

VALVE TYPE CODE	TYPE
B	BALL
C	CHECK
D	DIAPHGRAM
G	GATE
M	MULTIPORT
N	NEEDLE
O	GLOBE
P	PLUG
Y	BUTTERFLY
X	CHOKE

VALVE FACING CODE	TYPE
F	FLAT FACE
J	RING JOINT
R	RAISE FACE
S	SCREWED
U	UNION
W	WELDED
X	SPECIAL (VITUALIC GRAY LOC ETC.)
Y	SOLDER
Z	SOCKET WELD

CLASSIFICATION CODE	TYPE
A	ANSI 150
B	ANSI 300
C	ANSI 400
D	ANSI 600
E	ANSI 900
F	ANSI 1500
G	ANSI 2500
H	API 2000
I	API 3000
J	API 5000
K	API 10000
L	API 15000

VALVE SPECIALITY CODE	TYPE
B	BALL CHECK
F	FULL PORT
G	GEAR OPERATED
H	HIGH TEMP. TRIM
L	LUG TYPE
M	MNPT X FNPT
N	TRUNNION
O	MNPT X MNPT
P	PISTON CHECK
R	REDUCED PORT
S	SWING CHECK
T	FNPT X FNPT
W	WATER CHECK
X	SPECIAL

LINE IDENTIFICATION

PIPING CLASSIFICATION
PIPE SIZE — 4" LH – A1 – 101 – B1"– SR — INSULATION AND THICKNESS
FLOW MEDIUM
MATERIAL CLASSIFICATION
OPTIONAL
LINE NUMBER

FLOW MEDIUM IDENTIFIER CODE	FLOWING MEDIUM
AD	ATMOSPHERIC DRAIN
AF	AVIATION FUEL
AV	ATMOSPHERIC VENT
BW	BOILER FEED WATER
BP	BULK PRODUCTION
CI	CHEMICAL INJECTION
CW	COOLING WATER OR JACKET WATER
DF	DIESEL FUEL
DR	DRAIN
EX	EXHAUST
FG	FUEL GAS
FL	FLARE
FW	FIRE WATER
GH	GAS, HYDROCARBON
GL	GLYCOL
HF	HYDRAULIC FLUID
HM	HEAT MEDIUM
HR	HIGH PRESSURE RELIEF
IA	INTRUMENT AIR
IG	INSTRUMENT GAS
LH	LIQUID HYDROCARBON
LO	LUBE OIL
LR	LOW PRESSURE RELIEF
MD	MUD OR MUD AND CEMENT
NI	NITROGEN
OX	OXYGEN
PW	PRODUCED WATER
DW	POTABLE WATER
SA	START AIR
SC	STEAM CONDENSATE
SD	SANITARY DRAIN
SG	START GAS
ST	STEAM
UW	UTILITY WATER
WH	WATER AND HYDROCARBONS
ZA THRU ZZ	MISCELLANEOUS FLOW MEDIA

PIPING CLASSIFICATION CODE	RATING
A	ANSI 150
B	ANSI 300
C	ANSI 400
D	ANSI 600
E	ANSI 900
F	ANSI 1500
G	ANSI 2500
H	API 2000
I	API 3000
J	API 5000
K	API 10000
L	API 15000
M	API 20000

INSULATION IDENTIFIERS CODE	INSULATION TYPE
A	PERSONNEL PROTECTION
B	HEAT TRACING
C	FREEZE PROTECTION
D	HEAT CONSERVATION
E	COLD CONSERVATION
F	ANTI – SWEAT

MATERIAL CLASSIFICATION

CODE	CLASS
1(FL)	831.8 SWEET CARBON STEEL BULK PRODUCTION (FLOWLINE) (NOTE1)
1	SWEET CARBON STEEL
1M	SWEET CARBON STEEL MARINE SERVICE
2	SWEET 316 STAINLESS STEEL (EXCEPT K2 IS 10,000 PSIG SWEET CARBON STEEL)
2M	SWEET 316 STAINLESS STEEL MARINE SERVICE
3	LOW TEMPERATURE CARBON STEEL
4	FIBERGLASS OR 90/10 COPPER NICKEL
4M	FIBERGLASS OR 90/10 COPPER NICKEL – MARINE SERVICE
5M	90/10 COPPER NICKEL MARINE SERVICE
6	HIGH TEMPERATURE CARBON STEEL
7	MID TEMPERATURE CARBON STEEL
8	GALVANIZED CARBON STEEL
9	CPVC
10	NACE CARBON STEEL
11M	GALVANIZED CARBON STEEL MARINE SERVICE
12M	WROUGHT COPPER TUBING MARINE SERVICE
14	LOW TEMPERATURE NACE CARBON STEEL

INST GAS
PROCESS
ELECTRIC TRACE PIPE
ELECTRICAL
ENCLOSURE LIMITS
SKID LIMITS

DISCRETE INSTRUMENT

INSTRUMENT (LOCAL MOUNT)
MASTER PANEL
NORMALLY INACCESSIBLE DISCRETE INSTRUMENT
LOCAL PANEL MOUNTED INSTRUMENT (MOUNTED ON FRONT OF PANEL)
LOCAL PANEL MOUNTED INSTRUMENT (MOUNTED ON REAR OF PANEL)
LIGHT IN FEILD

PLC SYMBOLS

DI — DIGITAL INPUT (TO PROGRAMMABLE CONTROLLER)
DO — DIGITAL OUTPUT (FROM PROGRAMMABLE CONTROLLER)
AI — ANOLOG INPUT (TO PROGRAMMABLE CONTROLLER)
AO — ANOLOG OUTPUT (FROM PROGRAMMABLE CONTROLLER)
ESS — ELECTRONIC SAFETY SYSTEM
PCS — PROCESS CONTROL SYSTEM

GENERAL ABBREVIATIONS

AI	ANALOG INPUT	LAL	LEVEL ALARM LOW	PSV	PRESSURE SAFETY VALVE
A/M	AUTO/MANUAL	LAH	LEVEL ALARM HIGH	PSIG	POUNDS PER SQUARE INCH GAUGE
AO	ANALOG OUTPUT	LIC	LEVEL INDICATING CONTROLLER	SDV	SHUT DOWN VALVE
AS	AIR SUPPLY	LI	LEVEL INDICATOR	XV	SOLENOID VALVE
BF	BLIND FLANGE	LIS	LEVEL INDICATING SWITCH	TC	TEMPERATURE CONTROLLER
BPV	BACK PRESSURE VALVE	LIT	LEVEL INDICATING TRANSMITTER	PDT	PRESSURE DIFFERENTIAL TRANSMITTER
DI	DIGITAL INPUT	LT	LEVEL TRANSMITTER	PDC	PRESSURE DIFFERENTIAL CONTROLLER
DO	DIGITAL OUTPUT	LC	LEVEL CONTROLLER	PDI	PRESSURE DIFFERENTIAL INDICATOR
EI	POSITION INDICATOR	LCH	LEVEL CONTROLLER HIGH	TI	TEMPERATURE INDICATOR
F	FLAME ARRESTOR	LCL	LEVEL CONTROLLER LOW	TCV	TEMPERATURE CONTROL VALVE
FC	FLOW CONTROLLER	LG	LEVEL GAUGE	LGV	LEVEL GAUGE VALVE
FI	FLOW INDICATOR	LS	LEVEL SWITCH	TDC	TEMPERATURE DIFFERENTIAL CONTROLLER
FCV	FLOW CONTROL VALVE	LSHH	LEVEL SAFETY HIGH HIGH	TDIC	TEMPERATURE DIFF INDICATOR CONTROLLER
FE	FLOW ELEMENT	LSH	LEVEL SAFETY HIGH	TE	TEMPERATURE ELEMENT
FIC	FLOW INDICATOR CONTROLLER	LSL	LEVEL SAFETY LOW	TIC	TEMPERATURE INDICATING CONTROLLER
FIT	FLOW INDICATOR TRANSMITTER	NC	NORMALLY CLOSED	TIT	TEMPERATURE INDICATING TRANSMITTER
FM	FLOW METER	NO	NORMALLY OPEN	TS	TEMPERATURE SWITCH
FIS	FLOW INDICATOR SWITCH	C	COMMON	TSL	TEMPERATURE SAFETY LOW
FS	FLOW SWITCH	S	SIGNAL	TSH	TEMPERATURE SAFETY HIGH
FSL	FLOW SAFETY LOW	PI	PRESSURE INDICATOR	WS	WATER SUPPLY
FSH	FLOW SAFETY HIGH	PC	PRESSURE CONTROLLER	TW	THERMO WELL
IA	INSTRUMENT AIR	PT	PRESSURE TRANSMITTER	TS	TRANSFORMER
IAS	INSTRUMENT AIR SYSTEM	PS	PRESSURE SWITCH	ME	MIST ELIMINATOR
IG	INSTRUMENT GAS	PSH	PRESSURE SAFETY HIGH	TT	TEMPERATURE TRANSMITTER
IGS	INSTRUMENT GAS SYSTEM	PSL	PRESSURE SAFETY LOW	ELEV	ELEVATION

NOTE: –
1. CONSULT PIPE SPEC FOR PRESSURE RATINGS

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NOTES:
1.) VENT TO SAFE LOCATION
2.) WHEN AT REST (0 PSI), C TO NO IS OPEN, NC IS CLOSED
3.) WHEN PRESSURIZED, C TO NC IS OPEN, NO IS CLOSED

DATE	REV.	DESCRIPTION
12/11/2018	A	FIRST ISSUE

SpiralX
LEGEND SHEET
PIPING AND INSTRUMENTATION DIAGRAM
SPIRALX LLC. 2016.GARLAND, TEXAS

DRAWN BY:	RD	12/11/2018	SCALE: N/A	REV.
CHECKED BY:	KAK			
ENGINEERING APPR:	MDD	NO.LEGEND PAGE		A
PROJECT NO.	****			

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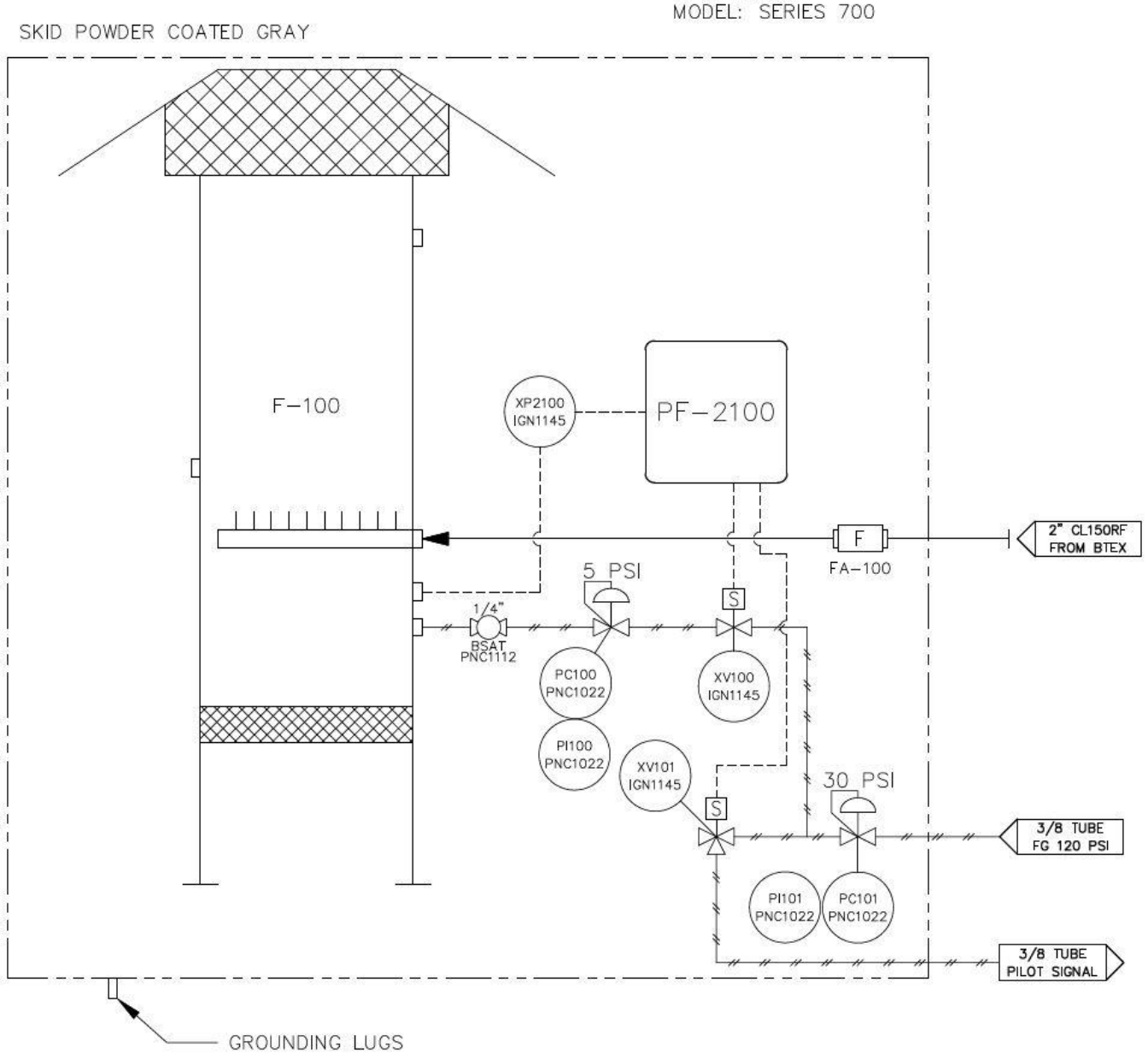
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F–100
30" COMBUSTOR

PF–2100
PROFIRE 2100 BMS

FA–100
WENCO FLAME ARRESTOR
TYPE: DETONATION
SIZE: 2"
MFG: WENCO
MODEL: SERIES 700



VALVE TAG	PART NUMBER	DESCRIPTION
XP–2100	IGN1145	IGNITION COIL
PC–100	PNC1022	PRESSURE CONTROLLER
PI–100	PNC1022	PRESSURE INDICATOR
PC–101	PNC1022	PRESSURE CONTROLLER
PI–101	PNC1022	PRESSURE INDICATOR
XV100	IGN1145	TWO–WAY SOLENOID VALVE
XV101	IGN1145	THREE–WAY SOLENOID VALVE

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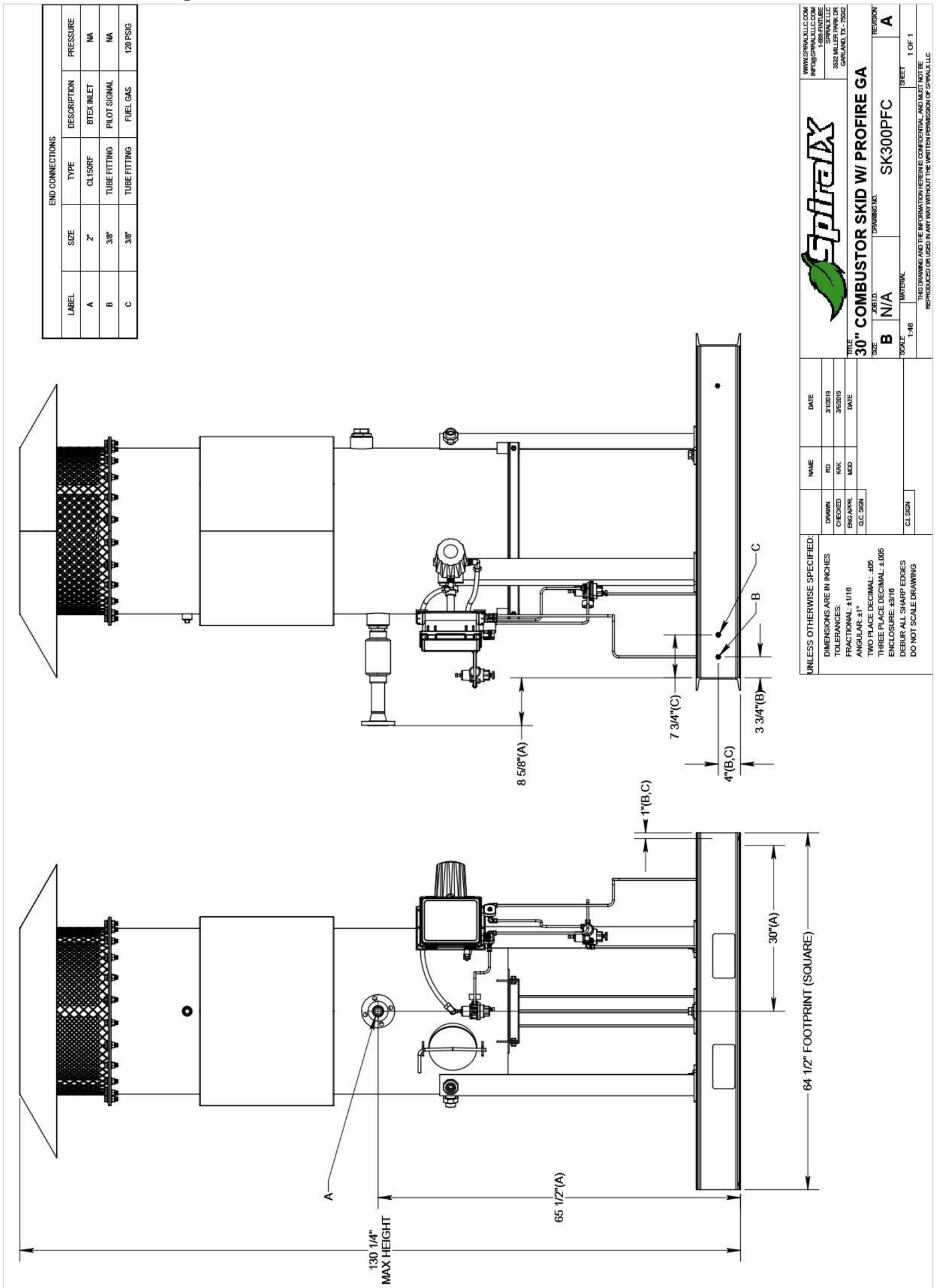
NOTES:
1.) VENT TO SAFE LOCATION
2.) WHEN AT REST (0 PSI), C TO NO IS OPEN, NC IS CLOSED
3.) WHEN PRESSURIZED, C TO NC IS OPEN, NO IS CLOSED

DATE	REV.	DESCRIPTION
2/14/2019	A	FIRST ISSUE

PIPING AND INSTRUMENTATION DIAGRAM
SPIRALX LLC. 2016
GARLAND, TEXAS

DRAWN BY:	RD	2/14/2019	SCALE: N/A	REV.
CHECKED BY:	KAK			
ENGINEERING APPR:	MDD	NO. SK300PFC		A
PROJECT NO.	****			

2.2 □□eneral Arrangement of Unit



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AP-42 Emission Factors

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 $lb/10^6$ scf to $kg/10^6$ m^3, multiply by 16. Emission factors are based on an average natural gas higher heating value of 1,020 Btu/scf. To convert from $lb/10^6$ 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 NO_2. 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_2O (Uncontrolled)	2.2	E
N_2O (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 $lb/10^6$ scf to $kg/10^6$ m^3, multiply by 16. To convert from $lb/10^6$ scf to 1b/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 CO_2. $CO_2[lb/10^6 \text{ scf}] = (3.67)(CON)(C)(D)$, where CON = fractional conversion of fuel carbon to CO_2, C = carbon content of fuel by weight (0.76), and D = density of fuel, 4.2×10^4 $lb/10^6$ scf.

[c] All PM (total, condensible, 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 PM_{10}, $PM_{2.5}$ or PM_1 emissions. Total PM is the sum of the filterable PM and condensible PM. Condensible 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 SO_2. Assumes sulfur content is natural gas of 2,000 grains/10^6 scf. The SO_2 emission factor in this table can be converted to other natural gas sulfur contents by multiplying the SO_2 emission factor by the ratio of the site-specific sulfur content (grains/10^6 scf) to 2,000 grains/10^6 scf.

TABLE 1.4-3. EMISSION FACTORS FOR SPECIATED ORGANIC COMPOUNDS FROM NATURAL GAS COMBUSTION[a]

CAS No.	Pollutant	Emission Factor ($lb/10^6$ scf)	Emission Factor Rating
91-57-6	2-Methylnaphthalene[b, c]	2.4E-05	D
56-49-5	3-Methylcholanthrene[b, c]	<1.8E-06	E
	7,12-Dimethylbenz(a)anthracene[b,c]	<1.6E-05	E
83-32-9	Acenaphthene[b,c]	<1.8E-06	E
203-96-8	Acenaphthylene[b,c]	<1.8E-06	E
120-12-7	Anthracene[b,c]	<2.4E-06	E
56-55-3	Benz(a)anthracene[b,c]	<1.8E-06	E
71-43-2	Benzene[b]	2.1E-03	B
50-32-8	Benzo(a)pyrene[b,c]	<1.2E-06	E
205-99-2	Benzo(b)fluoranthene[b,c]	<1.8E-06	E
191-24-2	Benzo(g,h,i)perylene[b,c]	<1.2E-06	E
207-08-9	Benzo(k)fluoranthene[b,c]	<1.8E-06	E
106-97-8	Butane	2.1E+00	E
218-01-9	Chrysene[b,c]	<1.8E-06	E
53-70-3	Dibenzo(a,h)anthracene[b,c]	<1.2E-06	E
25321-22-6	Dichlorobenzene[b]	1.2E-03	E
74-84-0	Ethane	3.1E+00	E
206-44-0	Fluoranthene[b,c]	3.0E-06	E
86-73-7	Fluorene[b,c]	2.8E-06	E
50-00-0	Formaldehyde[b]	7.5E-02	B
110-54-3	Hexane[b]	1.8E+00	E
193-39-5	Indeno(1,2,3-cd)pyrene[b,c]	<1.8E-06	E
91-20-3	Naphthalene[b]	6.1E-04	E
109-66-0	Pentane	2.6E+00	E
85-01-8	Phenanathrene[b,c]	1.7E-05	D
74-98-6	Propane	1.6E+00	E

TABLE 1.4-3. EMISSION FACTORS FOR SPECIATED ORGANIC COMPOUNDS FROM NATURAL GAS COMBUSTION (Continued)

CAS No.	Pollutant	Emission Factor ($lb/10^6$ scf)	Emission Factor Rating
129-00-0	Pyrene[b, c]	5.0E-06	E
108-88-3	Toluene[b]	3.4E-03	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 $lb/10^6$ scf to $kg/10^6$ m^3, multiply by 16. To convert from $1b/10^6$ scf to lb/MMBtu, divide by 1,020. Emission Factors preceeded with a less-than symbol are based on method detection limits.

[b] Hazardous Air Pollutant (HAP) as defined by Section 112(b) of the Clean Air Act.

[c] HAP because it is Polycyclic Organic Matter (POM). POM is a HAP as defined by Section 112(b) of the Clean Air Act.

[d] The sum of individual organic compounds may exceed the VOC and TOC emission factors due to differences in test methods and the availability of test data for each pollutant.

Table 3.2-2. UNCONTROLLED EMISSION FACTORS FOR 4-STROKE LEAN-BURN ENGINES[a]
(SCC 2-02-002-54)

Pollutant	Emission Factor (lb/MMBtu)[b] (fuel input)	Emission Factor Rating
Criteria Pollutants and Greenhouse Gases		
NO_x[c] 90 - 105% Load	4.08 E+00	B
NO_x[c] <90% Load	8.47 E-01	B
CO[c] 90 - 105% Load	3.17 E-01	C
CO[c] <90% Load	5.57 E-01	B
CO_2[d]	1.10 E+02	A
SO_2[e]	5.88 E-04	A
TOC[f]	1.47 E+00	A
Methane[g]	1.25 E+00	C
VOC[h]	1.18 E-01	C
PM10 (filterable)[i]	7.71 E-05	D
PM2.5 (filterable)[i]	7.71 E-05	D
PM Condensable[j]	9.91 E-03	D
Trace Organic Compounds		
1,1,2,2-Tetrachloroethane[k]	<4.00 E-05	E
1,1,2-Trichloroethane[k]	<3.18 E-05	E
1,1-Dichloroethane	<2.36 E-05	E
1,2,3-Trimethylbenzene	2.30 E-05	D
1,2,4-Trimethylbenzene	1.43 E-05	C
1,2-Dichloroethane	<2.36 E-05	E
1,2-Dichloropropane	<2.69 E-05	E
1,3,5-Trimethylbenzene	3.38 E-05	D
1,3-Butadiene[k]	2.67E-04	D
1,3-Dichloropropene[k]	<2.64 E-05	E
2-Methylnaphthalene[k]	3.32 E-05	C
2,2,4-Trimethylpentane[k]	2.50 E-04	C
Acenaphthene[k]	1.25 E-06	C

Table 3.2-2. UNCONTROLLED EMISSION FACTORS FOR 4-STROKE LEAN-BURN ENGINES (Continued)

Pollutant	Emission Factor (lb/MMBtu)[b] (fuel input)	Emission Factor Rating
Acenaphthylene[k]	5.53 E-06	C
Acetaldehyde[k,l]	8.36 E-03	A
Acrolein[k,l]	5.14 E-03	A
Benzene[k]	4.40 E-04	A
Benzo(b)fluoranthene[k]	1.66 E-07	D
Benzo(e)pyrene[k]	4.15 E-07	D
Benzo(g,h,i)perylene[k]	4.14 E-07	D
Biphenyl[k]	2.12 E-04	D
Butane	5.41 E-04	D
Butyr/Isobutyraldehyde	1.01 E-04	C
Carbon Tetrachloride[k]	<3.67 E-05	E
Chlorobenzene[k]	<3.04 E-05	E
Chloroethane	1.87 E-06	D
Chloroform[k]	<2.85 E-05	E
Chrysene[k]	6.93 E-07	C
Cyclopentane	2.27 E-04	C
Ethane	1.05 E-01	C
Ethylbenzene[k]	3.97 E-05	B
Ethylene Dibromide[k]	<4.43 E-05	E
Fluoranthene[k]	1.11 E-06	C
Fluorene[k]	5.67 E-06	C
Formaldehyde[k,l]	5.28 E-02	A
Methanol[k]	2.50 E-03	B
Methylcyclohexane	1.23 E-03	C
Methylene Chloride[k]	2.00 E-05	C
n-Hexane[k]	1.11 E-03	C
n-Nonane	1.10 E-04	C

Table 3.2-2. UNCONTROLLED EMISSION FACTORS FOR 4-STROKE LEAN-BURN ENGINES
(Continued)

Pollutant	Emission Factor (lb/MMBtu)[b] (fuel input)	Emission Factor Rating
n-Octane	3.51 E-04	C
n-Pentane	2.60 E-03	C
Naphthalene[k]	7.44 E-05	C
PAH[k]	2.69 E-05	D
Phenanthrene[k]	1.04 E-05	D
Phenol[k]	2.40 E-05	D
Propane	4.19 E-02	C
Pyrene[k]	1.36 E-06	C
Styrene[k]	<2.36 E-05	E
Tetrachloroethane[k]	2.48 E-06	D
Toluene[k]	4.08 E-04	B
Vinyl Chloride[k]	1.49 E-05	C
Xylene[k]	1.84 E-04	B

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

[b] Emission factors were calculated in units of (lb/MMBtu) based on procedures in EPA Method 19. To convert from (lb/MMBtu) to (lb/10^6 scf), multiply by the heat content of the fuel. If the heat content is not available, use 1020 Btu/scf. To convert from (lb/MMBtu) to (lb/hp-hr) use the following equation:

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

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

[d] Based on 99.5% conversion of the fuel carbon to CO_2. CO_2 [lb/MMBtu] = (3.67)(%CON)(C)(D)(1/h), where %CON = percent conversion of fuel carbon to CO_2, C = carbon content of fuel by weight (0.75), D = density of fuel, 4.1 E+04 lb/10^6 scf, and

h = heating value of natural gas (assume 1020 Btu/scf at 60°F).

[e] Based on 100% conversion of fuel sulfur to SO_2. Assumes sulfur content in natural gas of 2,000 gr/10^6scf.

[f] Emission factor for TOC is based on measured emission levels from 22 source tests.

[g] Emission factor for methane is determined by subtracting the VOC and ethane emission factors from the TOC emission factor. Measured emission factor for methane compares well with the calculated emission factor, 1.31 lb/MMBtu vs. 1.25 lb/MMBtu, respectively.

[h] VOC emission factor is based on the sum of the emission factors for all speciated organic compounds less ethane and methane.

[i] Considered $\leq$ 1 μm in aerodynamic diameter. Therefore, for filterable PM emissions, PM10(filterable) = PM2.5(filterable).

[j] PM Condensable = PM Condensable Inorganic + PM-Condensable Organic

[k] Hazardous Air Pollutant as defined by Section 112(b) of the Clean Air Act.

[l] For lean burn engines, aldehyde emissions quantification using CARB 430 may reflect interference with the sampling compounds due to the nitrogen concentration in the stack. The presented emission factor is based on FTIR measurements. Emissions data based on CARB 430 are available in the background report.

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

Pollutant	Emission Factor (lb/MMBtu)[b] (fuel input)	Emission Factor Rating
Criteria Pollutants and Greenhouse Gases		
NO_x [c] 90 - 105% Load	2.21 E+00	A
NO_x [c] <90% Load	2.27 E+00	C
CO[c] 90 - 105% Load	3.72 E+00	A
CO[c] <90% Load	3.51 E+00	C
CO_2 [d]	1.10 E+02	A
SO_2 [e]	5.88 E-04	A
TOC[f]	3.58 E-01	C
Methane[g]	2.30 E-01	C
VOC[h]	2.96 E-02	C
PM10 (filterable)[i,j]	9.50 E-03	E
PM2.5 (filterable)[j]	9.50 E-03	E
PM Condensable[k]	9.91 E-03	E
Trace Organic Compounds		
1,1,2,2-Tetrachloroethane[l]	2.53 E-05	C
1,1,2-Trichloroethane[l]	<1.53 E-05	E
1,1-Dichloroethane	<1.13 E-05	E
1,2-Dichloroethane	<1.13 E-05	E
1,2-Dichloropropane	<1.30 E-05	E
1,3-Butadiene[l]	6.63 E-04	D
1,3-Dichloropropene[l]	<1.27 E-05	E
Acetaldehyde [l,m]	2.79 E-03	C
Acrolein [l,m]	2.63 E-03	C
Benzene[l]	1.58 E-03	B
Butyr/isobutyraldehyde	4.86 E-05	D
Carbon Tetrachloride[l]	<1.77 E-05	E

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

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

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

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

lb/hp-hr = (lb/MMBtu) (heat input, MMBtu/hr) (1/operating HP, 1/hp)

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

[d] Based on 99.5% conversion of the fuel carbon to CO_2. CO_2 [lb/MMBtu] = (3.67)(%CON)(C)(D)(1/h), where %CON = percent conversion of fuel carbon to CO_2,

C = carbon content of fuel by weight (0.75), D = density of fuel, 4.1 E+04 lb/10^6 scf, and h = heating value of natural gas (assume 1020 Btu/scf at 60°F).

[e] Based on 100% conversion of fuel sulfur to SO_2. Assumes sulfur content in natural gas of 2,000 gr/10^6scf.

[f] Emission factor for TOC is based on measured emission levels from 6 source tests.

[g] Emission factor for methane is determined by subtracting the VOC and ethane emission factors from the TOC emission factor.

[h] VOC emission factor is based on the sum of the emission factors for all speciated organic compounds. Methane and ethane emissions were not measured for this engine category.

[i] No data were available for uncontrolled engines. PM10 emissions are for engines equipped with a PCC.

[j] Considered # 1 Fm in aerodynamic diameter. Therefore, for filterable PM emissions, PM10 (filterable) = PM2.5 (filterable).

[k] No data were available for condensable emissions. The presented emission factor reflects emissions from 4SLB engines.

[l] Hazardous Air Pollutant as defined by Section 112(b) of the Clean Air Act.

[m] For rich-burn engines, no interference is suspected in quantifying aldehyde emissions. The presented emission factors are based on FTIR and CARB 430 emissions data measurements.

[n] Ethane emission factor is determined by subtracting the VOC emission factor from the NMHC emission factor.

Table 13.2.2-1. TYPICAL SILT CONTENT VALUES OF SURFACE MATERIAL ON INDUSTRIAL UNPAVED ROADS[a]

Industry	Road Use Or Surface Material	Plant Sites	No. Of Samples	Silt Content (%)	
				Range	Mean
Copper smelting	Plant road	1	3	16 - 19	17
Iron and steel production	Plant road	19	135	0.2 - 19	6.0
Sand and gravel processing	Plant road	1	3	4.1 - 6.0	4.8
	Material storage area	1	1	-	7.1
Stone quarrying and processing	Plant road	2	10	2.4 - 16	10
	Haul road to/from pit	4	20	5.0-15	8.3
Taconite mining and processing	Service road	1	8	2.4 - 7.1	4.3
	Haul road to/from pit	1	12	3.9 - 9.7	5.8
Western surface coal mining	Haul road to/from pit	3	21	2.8 - 18	8.4
	Plant road	2	2	4.9 - 5.3	5.1
	Scraper route	3	10	7.2 - 25	17
	Haul road (freshly graded)	2	5	18 - 29	24
Construction sites	Scraper routes	7	20	0.56-23	8.5
Lumber sawmills	Log yards	2	2	4.8-12	8.4
Municipal solid waste landfills	Disposal routes	4	20	2.2 - 21	6.4

[a]References 1,5-15.

The following empirical expressions may be used to estimate the quantity in pounds (lb) of size-specific particulate emissions from an unpaved road, per vehicle mile traveled (VMT):

For vehicles traveling on unpaved surfaces at industrial sites, emissions are estimated from the following equation:

$$E = k\,(s/12)^a (W/3)^b \quad (1a)$$

and, for vehicles traveling on publicly accessible roads, dominated by light duty vehicles, emissions may be estimated from the following:

$$E = \frac{k\,(s/12)^a (S/30)^d}{(M/0.5)^c} - C \quad (1b)$$

where k, a, b, c and d are empirical constants (Reference 6) given below and

E = size-specific emission factor (lb/VMT)
s = surface material silt content (%)
W = mean vehicle weight (tons)
M = surface material moisture content (%)
S = mean vehicle speed (mph)
C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.

The source characteristics s, W and M are referred to as correction parameters for adjusting the emission estimates to local conditions. The metric conversion from lb/VMT to grams (g) per vehicle kilometer traveled (VKT) is as follows:

1 lb/VMT = 281.9 g/VKT

The constants for Equations 1a and 1b based on the stated aerodynamic particle sizes are shown in Tables 13.2.2-2 and 13.2.2-4. The PM-2.5 particle size multipliers (k-factors) are taken from Reference 27.

Table 13.5-1 (English Units). THC, NOx AND SOOT EMISSIONS FACTORS FOR FLARE OPERATIONS FOR CERTAIN CHEMICAL MANUFACTURING PROCESSES[a]

Pollutant	SCC[e]	Emissions Factor Value	Emissions Factor Units	Grade or Representativeness
THC, elevated flares[c]	30190099; 30119701; 30119705; 30119709; 30119741	0.14[b,f]	lb/10^6 Btu	B
THC, enclosed ground flares[g,h] Low Percent Load[i]		8.37[j] or 3.88e-3[f]	lb/10^6 scf gas burned lb/10^6 Btu heat input	Moderately
THC, enclosed ground flares[g,h] Normal to High Percent Load[i]		2.56[j] or 1.20e-3[f]	lb/10^6 scf gas burned lb/10^6 Btu heat input	Moderately
Nitrogen oxides, elevated flares[d]		0.068[b,k]	lb/10^6 Btu	B
Soot, elevated flares[d]		0 – 274[b]	μg/L	B

[a] All of the emissions factors in this table represent the emissions exiting the flare. Since the flare is not the originating source of the THC emissions, but rather the device controlling these pollutants routed from a process at the facility, the emissions factors are representative of controlled emissions rates for THC. These values are not representative of the uncontrolled THC routed to the flare from the associated process, and as such, they may not be appropriate for estimating the uncontrolled THC emissions or potential to emit from the associated process.

[b] Reference 1. Based on tests using crude propylene containing 80% propylene and 20% propane.

[c] Measured as methane equivalent. The THC emissions factor may not be appropriate for reporting volatile organic compounds (VOC) emissions when a VOC emissions factor exists.

[d] Soot in concentration values: nonsmoking flares, 0 micrograms per liter (μg/L); lightly smoking flares, 40 μg/L; average smoking flares, 177 μg/L; and heavily smoking flares, 274 μg/L.

[e] See Table 13.5-4 for a description of these SCCs.

[f] Factor developed using the lower (net) heating value of the vent gas.

[g] THC measured as propane by US EPA Method 25A.

[h] These factors apply to well operated ground flares achieving at least 98% destruction efficiency and operating in compliance with the current General Provisions requirements of 40 CFR Part 60, i.e. >200 btu/scf net heating value in the vent gas and less than the specified maximum exit velocity. The emissions factor data set had an average destruction efficiency of 99.99%. Based on tests using pure propylene fuel. References 12 through 33 and 39 through 45.

[i] The dataset for these tests were broken into four different test conditions: ramping back and forth between 0 and 30% of load; ramping back and forth between 30% and 70% of load; ramping back and forth between 70% and 100% of load; and a fixed rate maximum load condition. Analyses determined that only the first condition was statistically different. Low percent load is represented by a unit operating at approximately less than 30% of maximum load.

[j] Heat input is an appropriate basis for combustion emissions factor. However, based on available data, heat input data is not always known, but gas flowrate is generally available. Therefore, the emissions factor is presented in two different forms.

[k] Factor developed using the higher (gross) heating value of the vent gas.

Table 13.5-2 (English Units). VOC and CO EMISSIONS FACTORS FOR ELEVATED FLARE OPERATIONS FOR CERTAIN REFINERY AND CHEMICAL MANUFACTURING PROCESSES[a,b]

Pollutant	SCC[e]	Emissions Factor ($lb/10^6$ Btu)[f]	Representativeness
Volatile organic compounds[c]	30190099; 30600904; 30119701; 30119705; 30119709; 30119741; 30119799; 30130115; 30600201; 30600401; 30600508; 30600903; 30600999; 30601701; 30601801; 30688801; 40600240	0.66	Poorly
Carbon monoxide[d]		0.31	Poorly

[a] The emissions factors in this table represent the emissions exiting the flare. Since the flare is not the originating source of the VOC emissions, but rather the device controlling these pollutants routed from a process at the facility, the emissions factor is representative of controlled emissions rates for VOC. This values is not representative of the uncontrolled VOC routed to the flare from the associated process, and as such, it may not be appropriate for estimating the uncontrolled VOC emissions or potential to emit from the associated process.

[b] These factors apply to well operated flares achieving at least 98% destruction efficiency and operating in compliance with the current General Provisions requirements of 40 CFR Part 60, i.e. >300 btu/scf net heating value in the vent gas and less than the specified maximum flare tip velocity. The VOC emissions factor data set had an average destruction efficiency of 98.9%, and the CO emissions factor data set had an average destruction efficiency of 99.1% (based on test reports where destruction efficiency was provided). These factors are based on steam-assisted and air-assisted flares burning a variety of vent gases.

[c] References 4 through 9 and 11.

[d] References 1, 4 through 8, and 11.

[e] See Table 13.5-4 for a description of these SCCs.

[f] Factor developed using the lower (net) heating value of the vent gas.

TNRCC Emission Factors



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

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_2S	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 exeption ot 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.

EPA Emission Factors

United States
Environmental Protection
Agency

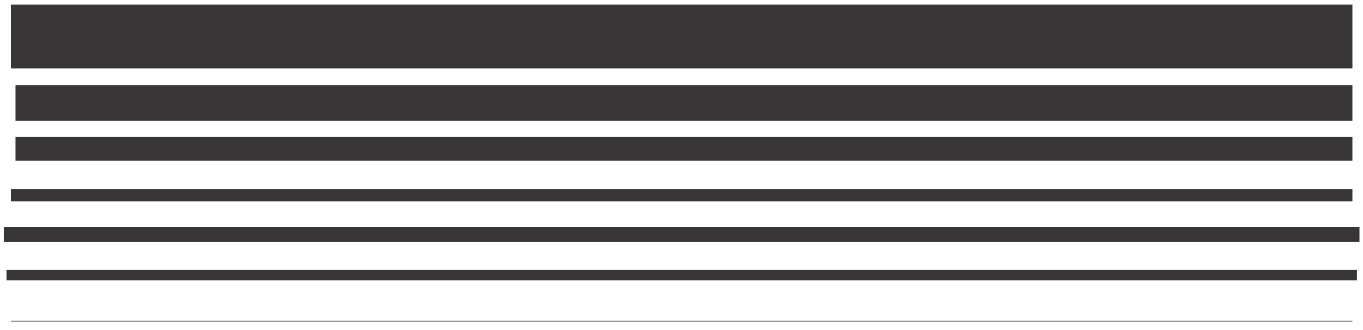
Office of Air Quality
Planning and Standards
Research Triangle Park NC 27711

EPA-453/R-95-017
November 1995

Air

EPA

Protocol for Equipment Leak Emission Estimates



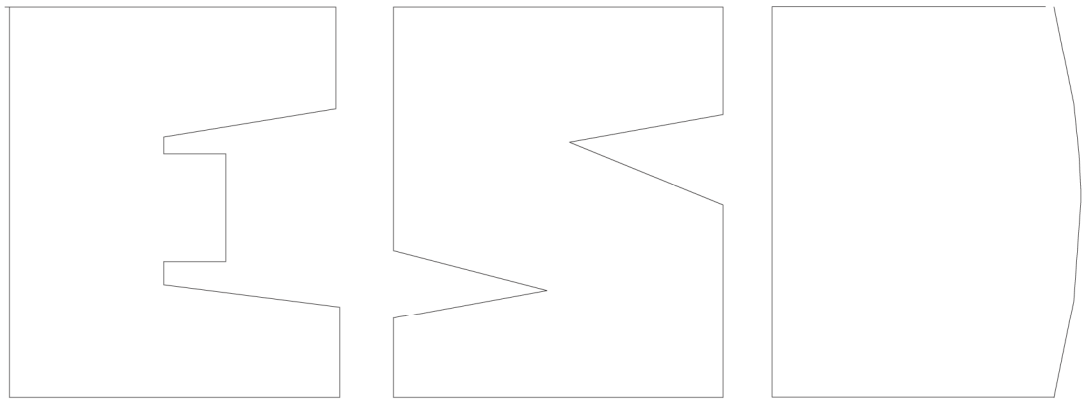


TABLE 2-4. OIL AND GAS PRODUCTION OPERATIONS AVERAGE EMISSION FACTORS (kg/hr/source)

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

[a]Water/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.

[b]These 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.

[c]The "other" equipment type was derived from compressors, diaphrams, 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.

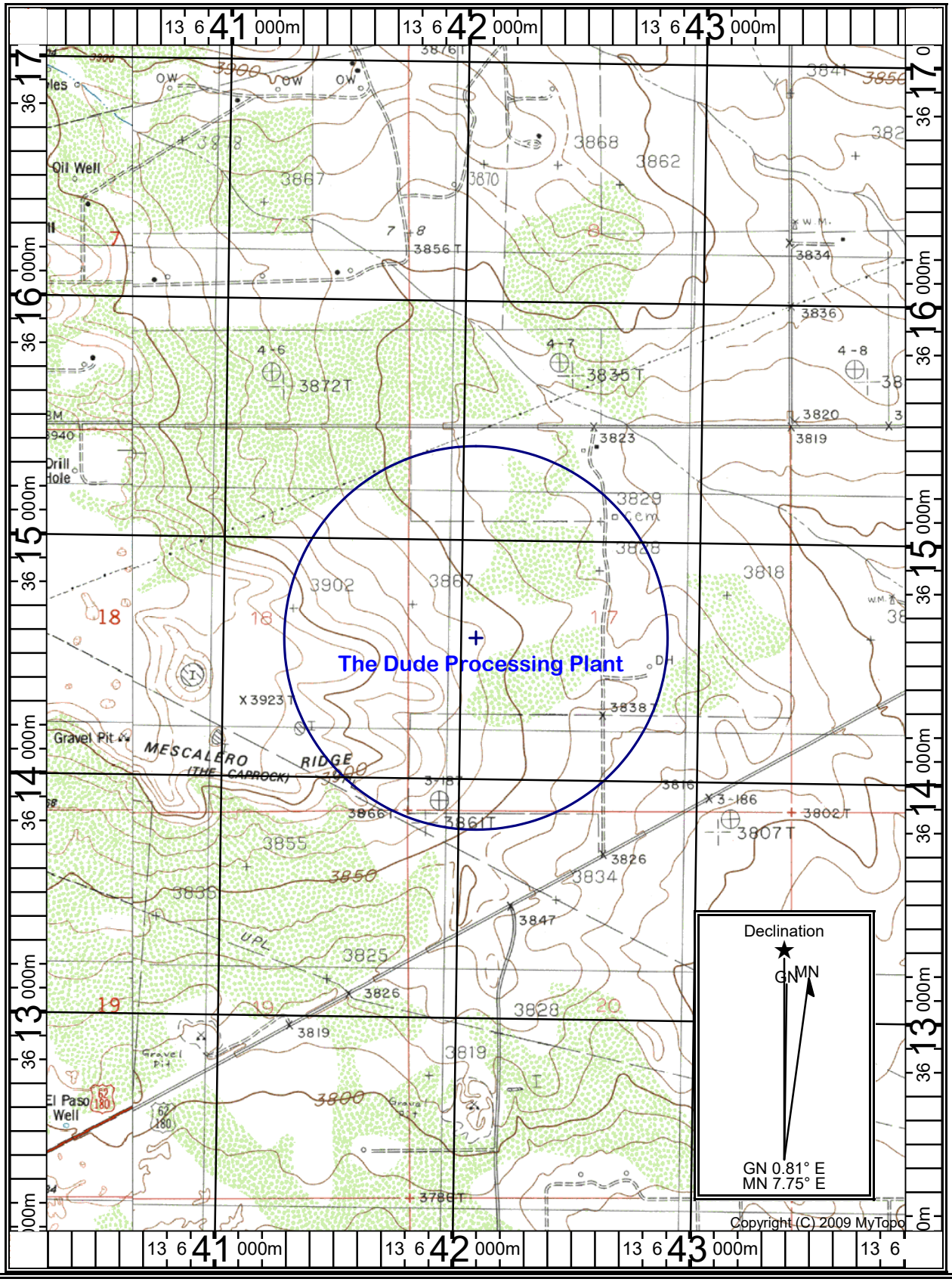
Section 8

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 is attached to this application.



Map Name: IRONHOUSE DRAW (NM) Scale: 1 inch = 2,000 ft. Horizontal Datum: WGS84
Print Date: 08/14/24 Map Center: 13 0642062 E 3614590 N

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.

9.1. Certified Letter Receipts with Post Marks

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Certified Mail Fee	$5.30
$	$0.00
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.78
$	
Total Postage and Fees	$6.08
$	

0975 10
Postmark Here
OCT 16 2025
10/16/2025

Sent To: State of New Mexico
Street and Apt. No., or PO Box No.: 310 Old Santa Fe Trail
City, State, ZIP+4®: Santa Fe, NM 87504

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

9589 0710 5270 3302 0597 80

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.
Hobbs, NM 88241

OFFICIAL USE

Certified Mail Fee	$5.30
$	$0.00
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.78
$	
Total Postage and Fees	$6.08
$	

0975 10
Postmark Here
OCT 16 2025
10/16/2025

Sent To: Snyder Ranches Inc.
Street and Apt. No., or PO Box No.: P.O. Box 2158
City, State, ZIP+4®: Hobbs, NM 88241

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

9589 0710 5270 3302 0596 50

U.S. Postal Service™
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For delivery information, visit our website at *www.usps.com®*.
Hobbs, NM 88241

OFFICIAL USE

Certified Mail Fee	$5.30
$	$0.00
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.78
$	
Total Postage and Fees	$6.08
$	

0975 10
Postmark Here
OCT 16 2025
10/16/2025

Sent To: Snyder Ranches LTD
Street and Apt. No., or PO Box No.: P.O. Box 2158
City, State, ZIP+4®: Hobbs, NM 88241

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

7014 2870 0001 4719 4867

U.S. Postal Service™
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Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.
Lovington, NM 88260

OFFICIAL USE

Postage	$5.30
$	$0.00
Certified Fee	$0.00
Return Receipt Fee (Endorsement Required)	$0.00
Restricted Delivery Fee (Endorsement Required)	$0.00
Total Postage & Fees	$0.78
$	
	$6.08

0975 10
Postmark Here
OCT 16 2025
10/16/2025

Sent To: Lea County
Street & Apt. No., or PO Box No.: 100 N. Main
City, State, ZIP+4: Lovington, NM 88260

PS Form 3800, July 2014 See Reverse for Instructions

9589 0710 5270 3302 0597 66

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.
Mankato, MN 56001

OFFICIAL USE

Certified Mail Fee	$5.30
$	$0.00
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.78
$	
Total Postage and Fees	$6.08
$	

0975 10
Postmark Here
OCT 16 2025
10/16/2025

Sent To: Carlin, Shayne Kathleen Maloney
Street and Apt. No., or PO Box No.: 129 Southbrook Cir.
City, State, ZIP+4®: Mankato, MN 56001

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

9589 0710 5270 3302 0597 59

U.S. Postal Service™
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Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.
Monument, NM 88265

OFFICIAL USE

Certified Mail Fee	$5.30
$	$0.00
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.78
$	
Total Postage and Fees	$6.08
$	

0975 10
Postmark Here
OCT 16 2025
10/16/2025

Sent To: Bruton Cattle Company
Street and Apt. No., or PO Box No.: 55 Bruton Ln
City, State, ZIP+4®: Monument, NM 88265-9710

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

9589 0710 5270 3302 0597 73

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.

Hobbs, NM 88241

OFFICIAL USE

Certified Mail Fee	$5.30
$	$0.00
Extra Services & Fees *(check box, add fee as appropriate)*	
☐ Return Receipt (hardcopy)	$ $0.00
☐ Return Receipt (electronic)	$ $0.00
☐ Certified Mail Restricted Delivery	$ $0.00
☐ Adult Signature Required	$ $0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.78
$	
Total Postage and Fees	$6.08
$	

0975
10

Postmark Here

OCT 16 2025

10/16/2025

Sent To L+K Ranch LLC

Street and Apt. No., or PO Box No. P.O. Box 1503

City, State, ZIP+4® Hobbs, NM 88241

PS Form 3800, January 2023 PSN 7530-02-000-9047 **See Reverse for Instructions**

9.2. List of Places Public Notice Has Been Posted

Lea Midstream, Inc - The Dude Processing Plant

Posted Notice Locations

Location	Address	City	State	Zip Code	County
Facility Entrance	61 Brunton Rd	Hobbs	NM	88240	Lea
Lea County District Court	100 N Love St, Ste 1-A	Lovington	NM	88260	Lea
Hobbs City Hall	200 E Broadway St	Hobbs	NM	88240	Lea
Baker Brothers Bar & Grill	2827 N Dal Paso St #136	Hobbs	NM	88240	Lea

9.3. Copy of Property Tax Record

Lea County Parcel Report

Area of Interest (AOI) Information

Area : 1,627.31 acres

Aug 20 2025 16:19:00 Mountain Daylight Time



Parcels

#	Owner #	Calculated Acres	Township	Range	Section
1		157.80	19	35	*N/A*
2	40548	200.00	19	35	7
3	202118	160.00	19	35	5
4	40548	120.00	19	35	8
5		630.00	19	35	*N/A*
6		40.00	19	35	*N/A*
7	42061	120.00	19	35	8
8	41359	240.00	19	35	20
9	42060	80.00	19	35	7
10	42063	160.00	19	35	17
11	42060	80.00	19	35	8
12	217460	160.00	19	35	17
13		317.18	19	35	*N/A*
14	42063	631.80	19	35	19
15	41359	120.00	19	35	17
16	42063	160.00	19	35	20
17	41723	320.00	19	35	17
18	42063	320.00	19	35	18

#	Parcel Code	Year Built	Number of Stories	SQFT Basement	SQFT 1st Floor
1	*N/A*		*N/A*	*N/A*	*N/A*
2	4000405480005		*N/A*	*N/A*	*N/A*
3	4000202118002		*N/A*	*N/A*	*N/A*
4	4000405480006		*N/A*	*N/A*	*N/A*
5	*N/A*		*N/A*	*N/A*	*N/A*
6	*N/A*		*N/A*	*N/A*	*N/A*
7	4000420610001	1955	1.00	0	1,630
8	4000413590008		*N/A*	*N/A*	*N/A*
9	4000420600001		*N/A*	*N/A*	*N/A*
10	4000420630011		*N/A*	*N/A*	*N/A*
11	4000420600002		*N/A*	*N/A*	*N/A*
12	4941010120019		*N/A*	*N/A*	*N/A*
13	*N/A*		*N/A*	*N/A*	*N/A*
14	4000420630013		*N/A*	*N/A*	*N/A*
15	4000413590007		*N/A*	*N/A*	*N/A*
16	4000420630014		*N/A*	*N/A*	*N/A*
17	4000417230001	1955	1.00	0	1,682
18	4000420630012		*N/A*	*N/A*	*N/A*

#	SQFT 2nd Floor	Date Modified	Total SQFT	Inspection Year	Subdivision Name
1	*N/A*			*N/A*	*N/A*
2	*N/A*			*N/A*	*N/A*
3	*N/A*			*N/A*	*N/A*
4	*N/A*			*N/A*	*N/A*
5	*N/A*			*N/A*	*N/A*
6	*N/A*			*N/A*	*N/A*
7	0	07/01/2008	1,630	2008	*N/A*
8	*N/A*			*N/A*	*N/A*
9	*N/A*			*N/A*	*N/A*
10	*N/A*			*N/A*	*N/A*
11	*N/A*			*N/A*	*N/A*
12	*N/A*			*N/A*	*N/A*
13	*N/A*			*N/A*	*N/A*
14	*N/A*			*N/A*	*N/A*
15	*N/A*			*N/A*	*N/A*
16	*N/A*			*N/A*	*N/A*
17	0	07/15/2008	1,682	2008	*N/A*
18	*N/A*			*N/A*	*N/A*

#	Unit	Block	Lot/Tract	Description	NEQ
1	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
2	*N/A*	*N/A*	*N/A*	200.00 AC LOC NE4SW4, E2NE4,	Y
3	*N/A*	*N/A*	*N/A*	160.00 AC BEING SW4	*N/A*
4	*N/A*	*N/A*	*N/A*	120.00 AC LOC W2NW4, NW4SW4	*N/A*
5	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
6	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
7	*N/A*	*N/A*	*N/A*	120.00 AC LOC S2SE4, NE4SE4	*N/A*
8	*N/A*	*N/A*	*N/A*	240.00 AC LOC NE4, E2SW4	*N/A*
9	*N/A*	*N/A*	*N/A*	60.00 AC BEING UND 3/4 INT S2SE4	*N/A*
10	*N/A*	*N/A*	*N/A*	80.00 AC LOC S2NW4	*N/A*
11	*N/A*	*N/A*	*N/A*	60.00 AC BEING UND 3/4 INT S2SW4	*N/A*
12	*N/A*	*N/A*	*N/A*	80.00 AC BEING N2SW4	*N/A*
13	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
14	*N/A*	*N/A*	*N/A*	637.80 AC ALL	*N/A*
15	*N/A*	*N/A*	*N/A*	120.00 AC LOC S2SW4, SW4SE4	*N/A*
16	*N/A*	*N/A*	*N/A*	160.00 AC LOC NW4	*N/A*
17	*N/A*	*N/A*	*N/A*	320.00 AC LOC N2NW4, NE4, N2SE4	*N/A*
18	*N/A*	*N/A*	*N/A*	320.00 AC BEING E2	*N/A*

#	NWQ	SWQ	SEQ	Name	In Care of Name
1	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
2	*N/A*	*N/A*	*N/A*	CARLIN, SHAYNE KATHLEEN MALONEY	HOWARD, ROBERT %
3	*N/A*	Y	*N/A*	SNYDER RANCHES INC	*N/A*
4	*N/A*	Y	*N/A*	CARLIN, SHAYNE KATHLEEN MALONEY	HOWARD, ROBERT %
5	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
6	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
7	*N/A*	*N/A*	Y	SNYDER RANCHES INC	*N/A*
8	*N/A*	Y	*N/A*	L & K RANCH LLC	*N/A*
9	*N/A*	*N/A*	Y	SNYDER RANCHES INC	*N/A*
10	*N/A*	Y	*N/A*	SNYDER RANCHES LTD	*N/A*
11	*N/A*	Y	*N/A*	SNYDER RANCHES INC	*N/A*
12	*N/A*	Y	*N/A*	LEA MIDSTREAM LLC	*N/A*
13	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
14	*N/A*	*N/A*	*N/A*	SNYDER RANCHES LTD	*N/A*
15	*N/A*	*N/A*	Y	L & K RANCH LLC	*N/A*
16	Y	*N/A*	*N/A*	SNYDER RANCHES LTD	*N/A*
17	*N/A*	*N/A*	Y	BRUTON CATTLE COMPANY LTD	PARTNERSHIP
18	*N/A*	*N/A*	*N/A*	SNYDER RANCHES LTD	*N/A*

#	Mailing Address 1	Mailing Address 2	Mailing City	Mailing State	Country Name
1	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
2	120 SOUTHBROOK CIR	*N/A*	MANKATO	MN	*N/A*
3	*N/A*	PO BOX 2158	HOBBS	NM	*N/A*
4	120 SOUTHBROOK CIR	*N/A*	MANKATO	MN	*N/A*
5	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
6	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
7	*N/A*	PO BOX 2158	HOBBS	NM	*N/A*
8	PO BOX 1503	*N/A*	HOBBS	NM	*N/A*
9	*N/A*	PO BOX 2158	HOBBS	NM	*N/A*
10	*N/A*	PO BOX 2158	HOBBS	NM	*N/A*
11	*N/A*	PO BOX 2158	HOBBS	NM	*N/A*
12	3500 MAPLE AVE STE 700	*N/A*	DALLAS	TX	*N/A*
13	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
14	*N/A*	PO BOX 2158	HOBBS	NM	*N/A*
15	PO BOX 1503	*N/A*	HOBBS	NM	*N/A*
16	*N/A*	PO BOX 2158	HOBBS	NM	*N/A*
17	55 BRUTON LN	*N/A*	MONUMENT	NM	*N/A*
18	*N/A*	PO BOX 2158	HOBBS	NM	*N/A*

#	Mailing Zipcode	Mailing Zipcode Extension	District	Type	Year
1	*N/A*	*N/A*	*N/A*	*N/A*	
2	56001	4125	160	M	2025
3	88241	*N/A*	160	M	2025
4	56001	4125	160	M	2025
5	*N/A*	*N/A*	*N/A*	*N/A*	
6	*N/A*	*N/A*	*N/A*	*N/A*	
7	88241	*N/A*	160	M	2025
8	88241	*N/A*	160	M	2025
9	88241	*N/A*	160	M	2025
10	88241	*N/A*	160	M	2025
11	88241	*N/A*	160	M	2025
12	75219	3902	160	M	2025
13	*N/A*	*N/A*	*N/A*	*N/A*	
14	88241	*N/A*	160	M	2025
15	88241	*N/A*	160	M	2025
16	88241	*N/A*	160	M	2025
17	88265	9710	160	M	2025
18	88241	*N/A*	160	M	2025

#	Reception Number	Recording Type	Book	Page	Recorded Date
1		*N/A*	*N/A*	*N/A*	
2	20761	1	1898	554	06/12/2014
3	0	*N/A*	222	272	
4	20761	1	1898	554	06/12/2014
5		*N/A*	*N/A*	*N/A*	
6		*N/A*	*N/A*	*N/A*	
7	0	*N/A*	*N/A*	0	
8	18717	1	2127	849	01/16/2018
9	0	*N/A*	*N/A*	0	
10	12683	1	328	8	02/25/1972
11	0	*N/A*	*N/A*	0	
12	55026	1	2229	431	09/18/2024
13		*N/A*	*N/A*	*N/A*	
14	12683	1	328	8	02/25/1972
15	18717	1	2127	849	01/16/2018
16	12683	1	328	8	02/25/1972
17	11573	1	1657	478	11/24/2009
18	12683	1	328	8	02/25/1972

#	Property Street Name	Property Street Number	Property Half Number	Property Street Direction	Total Value
1	*N/A*	*N/A*	*N/A*	*N/A*	0
2	*N/A*	*N/A*	*N/A*	*N/A*	0
3	*N/A*	*N/A*	*N/A*	*N/A*	0
4	*N/A*	*N/A*	*N/A*	*N/A*	0
5	*N/A*	*N/A*	*N/A*	*N/A*	0
6	*N/A*	*N/A*	*N/A*	*N/A*	0
7	*N/A*	*N/A*	*N/A*	*N/A*	0
8	*N/A*	*N/A*	*N/A*	*N/A*	0
9	*N/A*	*N/A*	*N/A*	*N/A*	0
10	*N/A*	*N/A*	*N/A*	*N/A*	0
11	*N/A*	*N/A*	*N/A*	*N/A*	0
12	*N/A*	*N/A*	*N/A*	*N/A*	0
13	*N/A*	*N/A*	*N/A*	*N/A*	0
14	*N/A*	*N/A*	*N/A*	*N/A*	0
15	*N/A*	*N/A*	*N/A*	*N/A*	0
16	*N/A*	*N/A*	*N/A*	*N/A*	0
17	BRUTON RD	53	*N/A*	*N/A*	0
18	*N/A*	*N/A*	*N/A*	*N/A*	0

#	Total Land Value	Land Value	Improved Value	Cent Value	Pers Value
1	0	0	0	0	0
2	0	9186	0	0	0
3	0	1008	0	0	0
4	0	9186	0	0	0
5	0	0	0	0	0
6	0	0	0	0	0
7	0	2202	68577	0	0
8	0	12930	53313	0	0
9	0	375	0	0	0
10	0	5844	0	0	0
11	0	375	0	0	0
12	0	120000	0	0	0
13	0	0	0	0	0
14	0	5844	0	0	0
15	0	12930	53313	0	0
16	0	5844	0	0	0
17	0	2580	58833	0	0
18	0	5844	0	0	0

#	MFG H Value	Livestock Value	Full Value	Taxable Value	Exempt Value
1	0	0	0	0	0
2	0	0	9186	3062	0
3	0	0	1008	336	0
4	0	0	9186	3062	0
5	0	0	0	0	0
6	0	0	0	0	0
7	0	0	70779	23593	0
8	0	0	66243	22081	0
9	0	0	375	125	0
10	0	0	5844	1948	0
11	0	0	375	125	0
12	0	0	120000	40000	0
13	0	0	0	0	0
14	0	0	5844	1948	0
15	0	0	66243	22081	0
16	0	0	5844	1948	0
17	0	0	61413	20471	2000
18	0	0	5844	1948	0

#	Net Value	Recording Year	Most Current Tax	Value	Code
1	0	*N/A*	$	0	*N/A*
2	3062	*N/A*	$76.00	0	*N/A*
3	336	*N/A*	$9.00	1008	120
4	3062	*N/A*	$76.00	0	*N/A*
5	0	*N/A*	$	0	*N/A*
6	0	*N/A*	$	0	*N/A*
7	23593	*N/A*	$538.00	627	120
8	22081	*N/A*	$525.00	0	*N/A*
9	125	*N/A*	$3.00	375	120
10	1948	*N/A*	$67.00	0	*N/A*
11	125	*N/A*	$3.00	0	*N/A*
12	40000	2024	$0.00	120000	150
13	0	*N/A*	$	0	*N/A*
14	1948	*N/A*	$67.00	0	*N/A*
15	22081	*N/A*	$525.00	0	*N/A*
16	1948	*N/A*	$67.00	0	*N/A*
17	18471	*N/A*	$378.00	2000	001
18	1948	*N/A*	$67.00	0	*N/A*

#	ID	Category	Quantity	Location	Square Footage	Acres	Area(acres)
1	*N/A*	*N/A*	*N/A*	*N/A*	6,945,095.49	*N/A*	0.25
2	*N/A*	*N/A*	*N/A*	*N/A*	8,758,979.69	1,357.00	6.13
3	N	Land	320.00	*N/A*	7,016,432.32	320.00	12.30
4	*N/A*	*N/A*	*N/A*	*N/A*	5,234,100.79	1,357.00	14.49
5	*N/A*	*N/A*	*N/A*	*N/A*	27,519,588.09	*N/A*	23.08
6	*N/A*	*N/A*	*N/A*	*N/A*	1,757,326.69	*N/A*	38.90
7	N	Land	199.00	*N/A*	5,266,665.26	200.00	41.66
8	*N/A*	*N/A*	*N/A*	*N/A*	10,225,858.81	3,606.00	62.92
9	N	Land	120.00	*N/A*	3,516,712.14	120.00	63.54
10	*N/A*	*N/A*	*N/A*	*N/A*	3,466,385.76	1,786.00	79.58
11	*N/A*	*N/A*	*N/A*	*N/A*	3,509,449.29	120.00	80.57
12	N	Land	80.00	*N/A*	3,545,965.98	80.00	81.41
13	*N/A*	*N/A*	*N/A*	*N/A*	13,943,947.88	*N/A*	107.79
14	*N/A*	*N/A*	*N/A*	*N/A*	27,456,430.60	1,786.00	109.35
15	*N/A*	*N/A*	*N/A*	*N/A*	5,307,261.01	3,606.00	121.84
16	*N/A*	*N/A*	*N/A*	*N/A*	6,684,830.83	1,786.00	132.98
17	R	Head Household	*N/A*	53 BRUTON RD	14,032,998.42	320.00	316.07
18	*N/A*	*N/A*	*N/A*	*N/A*	14,089,377.48	1,786.00	323.46

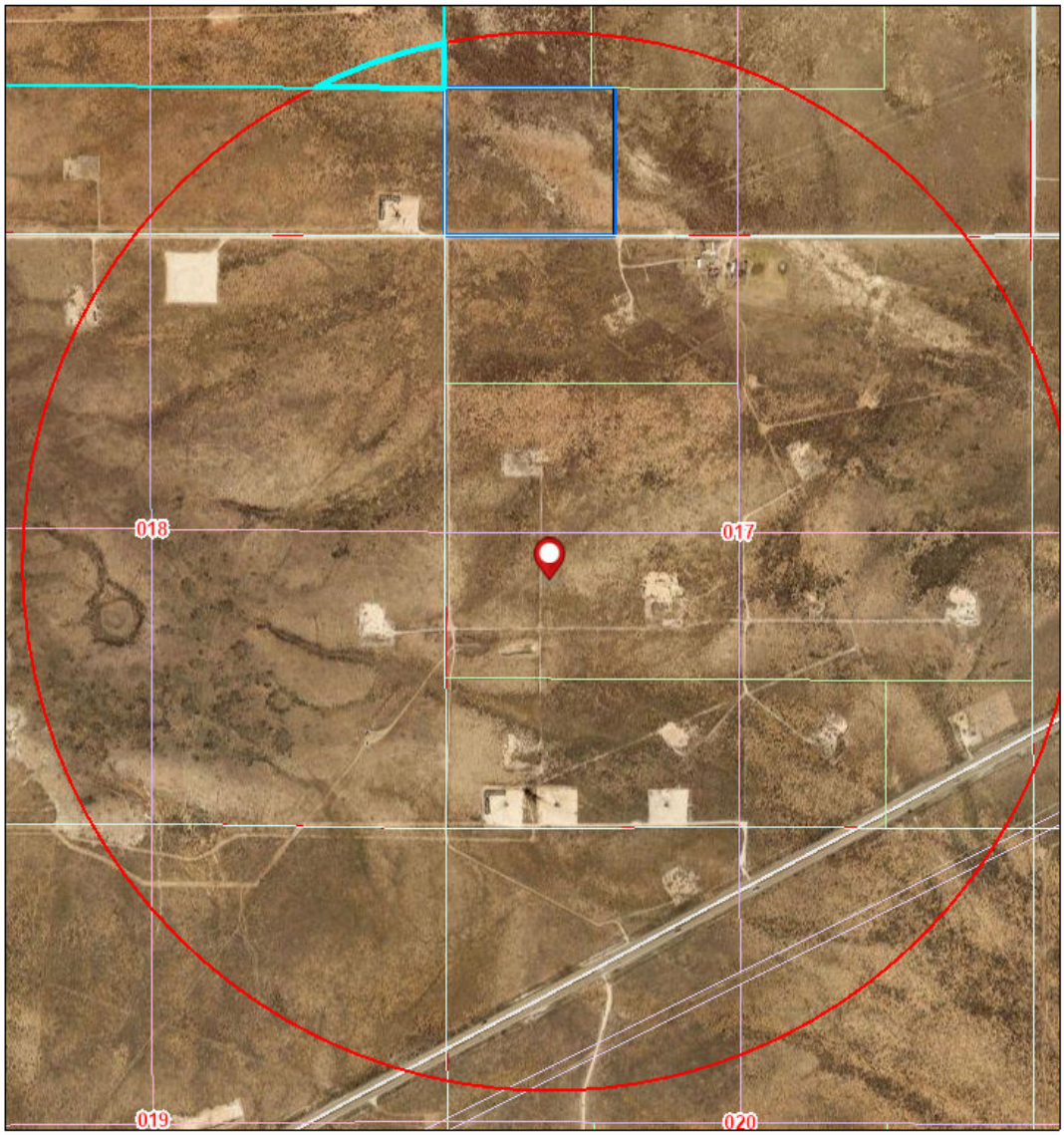
Lea County, New Mexico Portico Disclaimer:

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Square Foot and Year Built listed only to be used for comparative purposes, NOT to be used for commerce.

Lea County Parcel Report



Sections
Lea County Roads
Parcels

1:18,056

0 0.13 0.25 0.5 mi
0 0.2 0.4 0.8 km

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Parcel Details

OWNER NUMBER: 40548 **UPC CODE:** 4204109157523
PARCEL NUMBER: 4000405480005

Owner Information	
Owner:	CARLIN, SHAYNE KATHLEEN MALONEY
Mailing Address:	120 SOUTHBROOK CIR
Property Address:	

Subdivision Information	
Name:	
Unit:	
Block:	
Lot:	

Legal Information
200.00 AC LOC NE4SW4, E2NE4,

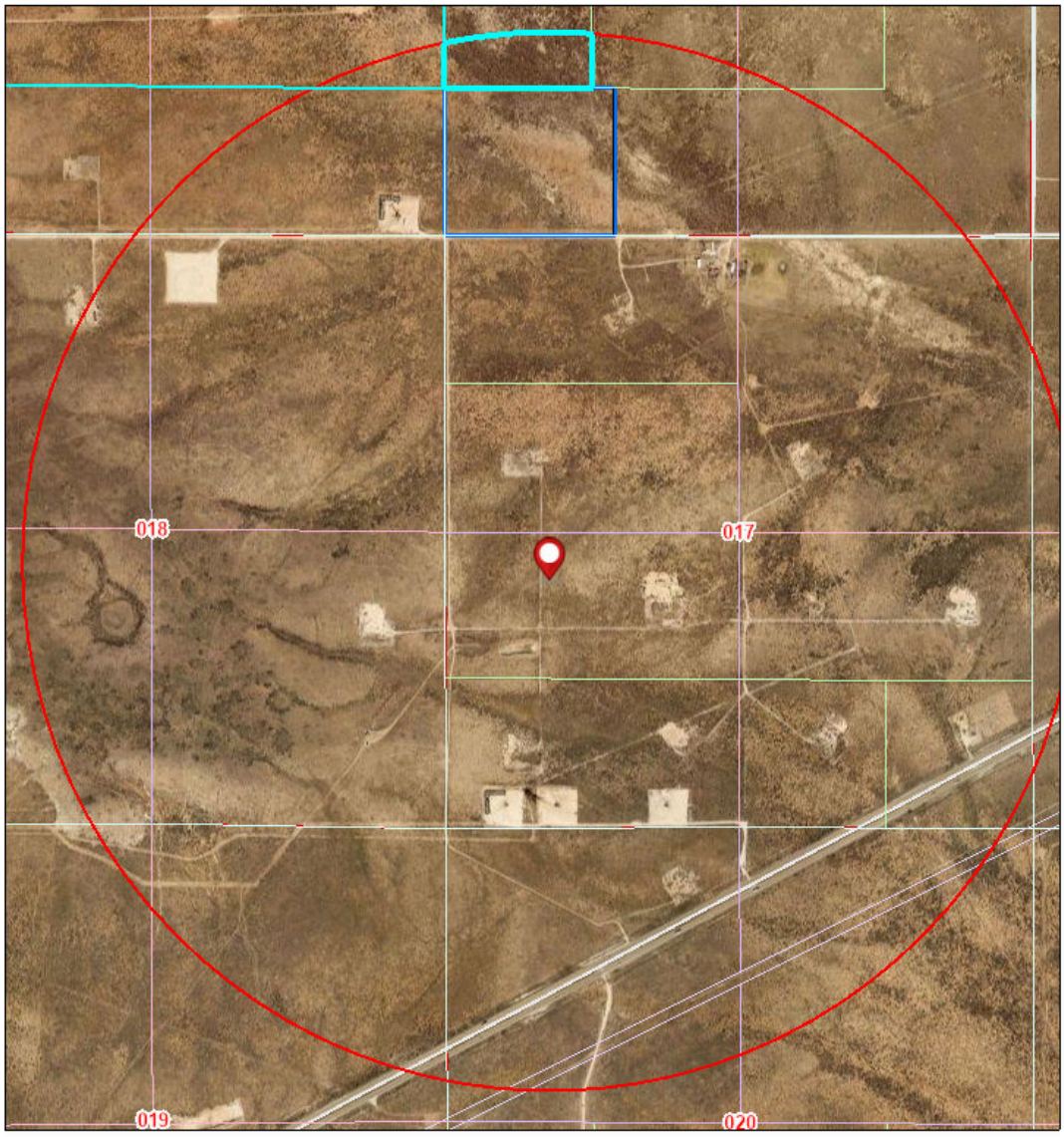
Other Information			
Taxable Value:	$3062	**Deed Book:**	1898
Exempt Value:	$0	**Deed Page:**	554
Net Value:	$3062	**District:**	160
Livestock Value:	$0	**Section:**	07
Manufactured Home Value:	$0	**Township:**	19
Personal Property:	$0	**Range:**	35
Land Value:	$9186	**Date Filed:**	20140612
Improvement Value:	$0	**Most Current Tax:**	76
Full Value:	$9186	**Year Recorded:**	

Square Foot and Year Built listed only to be used for comparative purposes, NOT to be used for commerce.

Building Information			
Year Built:		**Number of Stories:**	
Basement SQFT:		**First Floor SQFT:**	
Second Floor SQFT:			

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Lea County Parcel Report



Sections
Lea County Roads
Parcels

1:18,056

0 0.13 0.25 0.5 mi
0 0.2 0.4 0.8 km

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Parcel Details

OWNER NUMBER: 40548 **UPC CODE:** 4204109157523
PARCEL NUMBER: 4000405480005

Owner Information	
Owner:	CARLIN, SHAYNE KATHLEEN MALONEY
Mailing Address:	120 SOUTHBROOK CIR
Property Address:	

Subdivision Information	
Name:	
Unit:	
Block:	
Lot:	

Legal Information
200.00 AC LOC NE4SW4, E2NE4,

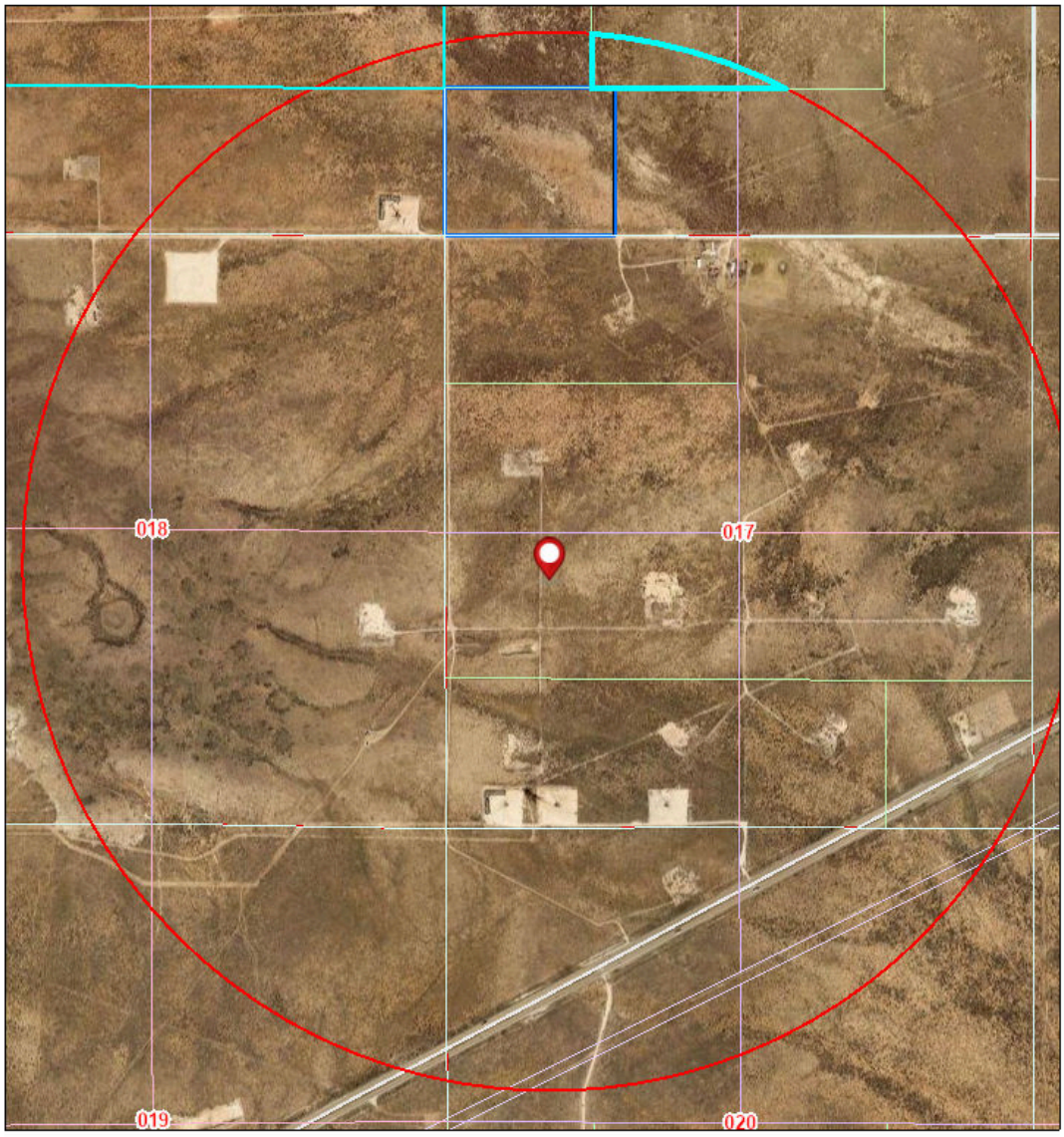
Other Information			
Taxable Value:	$3062	**Deed Book:**	1898
Exempt Value:	$0	**Deed Page:**	554
Net Value:	$3062	**District:**	160
Livestock Value:	$0	**Section:**	07
Manufactured Home Value:	$0	**Township:**	19
Personal Property:	$0	**Range:**	35
Land Value:	$9186	**Date Filed:**	20140612
Improvement Value:	$0	**Most Current Tax:**	76
Full Value:	$9186	**Year Recorded:**	

Square Foot and Year Built listed only to be used for comparative purposes, NOT to be used for commerce.

Building Information			
Year Built:		**Number of Stories:**	
Basement SQFT:		**First Floor SQFT:**	
Second Floor SQFT:			

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0 0.13 0.25 0.5 mi
0 0.2 0.4 0.8 km

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Parcel Details

OWNER NUMBER: 40548 **UPC CODE:** 4204109157523
PARCEL NUMBER: 4000405480005

Owner Information	
Owner:	CARLIN, SHAYNE KATHLEEN MALONEY
Mailing Address:	120 SOUTHBROOK CIR
Property Address:	

Subdivision Information	
Name:	
Unit:	
Block:	
Lot:	

Legal Information
200.00 AC LOC NE4SW4, E2NE4,

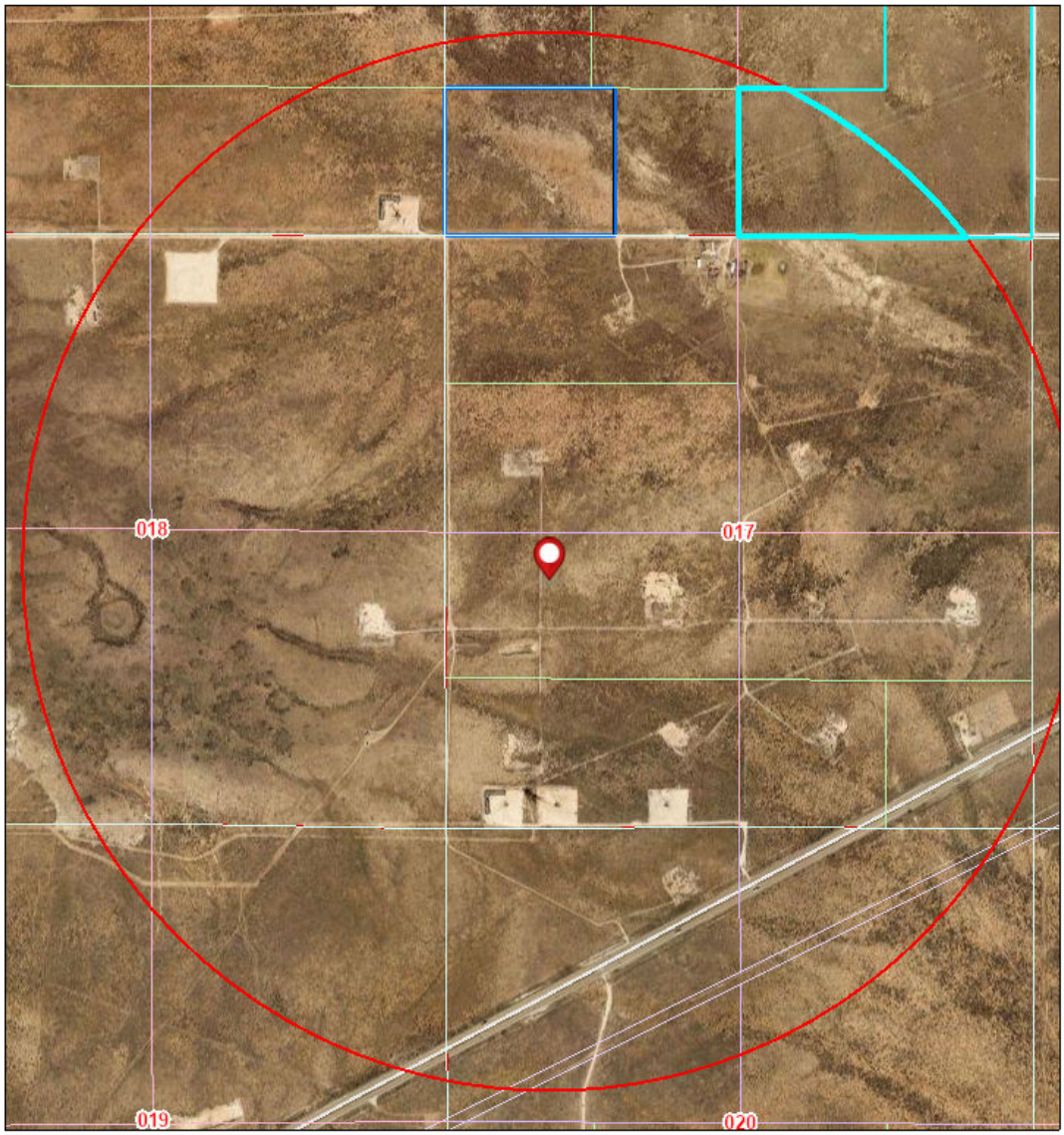
Other Information			
Taxable Value:	$3062	**Deed Book:**	1898
Exempt Value:	$0	**Deed Page:**	554
Net Value:	$3062	**District:**	160
Livestock Value:	$0	**Section:**	07
Manufactured Home Value:	$0	**Township:**	19
Personal Property:	$0	**Range:**	35
Land Value:	$9186	**Date Filed:**	20140612
Improvement Value:	$0	**Most Current Tax:**	76
Full Value:	$9186	**Year Recorded:**	

Square Foot and Year Built listed only to be used for comparative purposes, NOT to be used for commerce.

Building Information			
Year Built:		**Number of Stories:**	
Basement SQFT:		**First Floor SQFT:**	
Second Floor SQFT:			

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Lea County Parcel Report



Sections
Lea County Roads
Parcels

1:18,056

0 0.13 0.25 0.5 mi
0 0.2 0.4 0.8 km

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Parcel Details

OWNER NUMBER: 42061 **UPC CODE:** 4205110493410
PARCEL NUMBER: 4000420610001

Owner Information	
Owner:	SNYDER RANCHES INC
Mailing Address:	
Property Address:	

Subdivision Information	
Name:	
Unit:	
Block:	
Lot:	

Legal Information
120.00 AC LOC S2SE4, NE4SE4

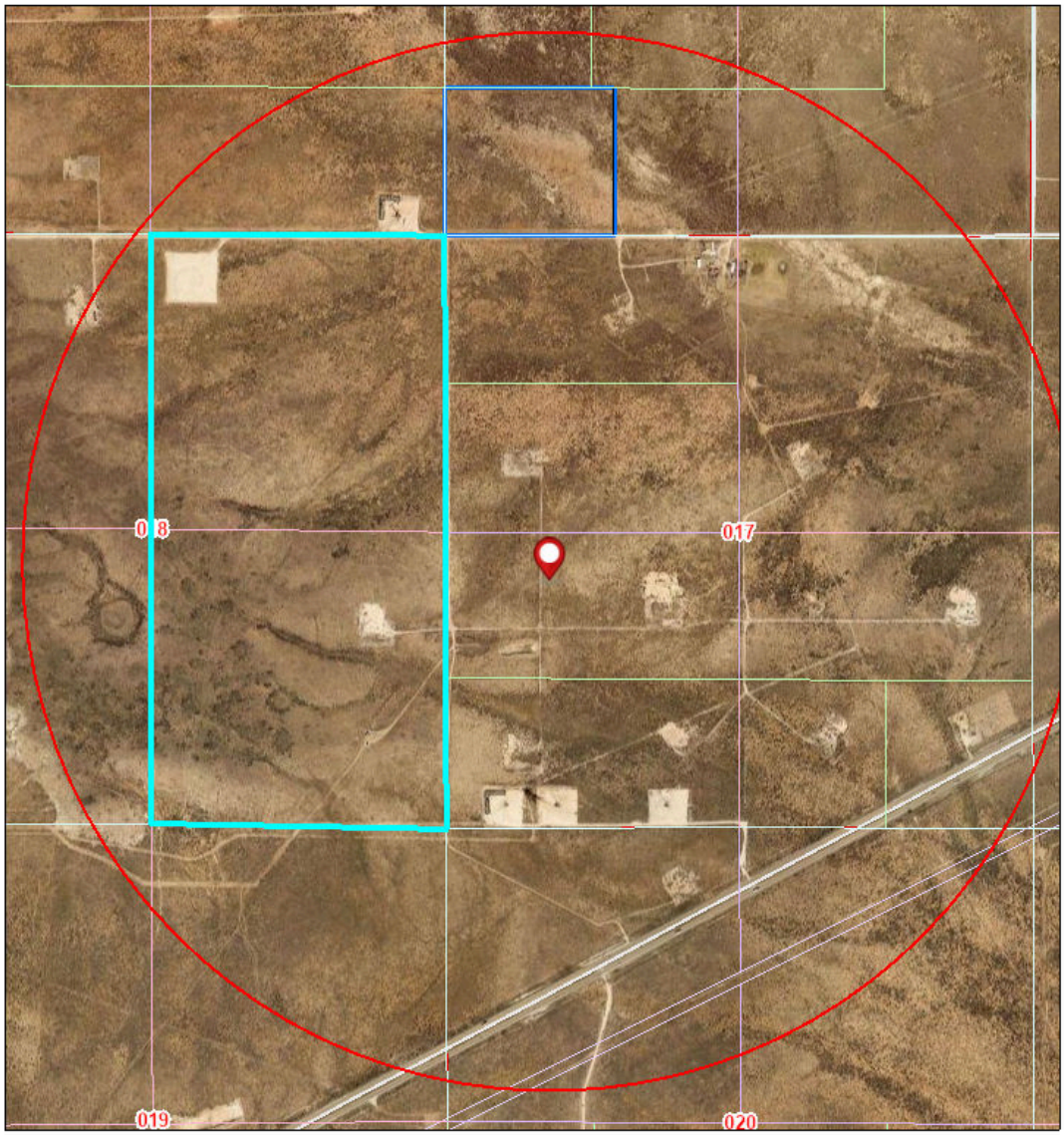
Other Information			
Taxable Value:	$23593	**Deed Book:**	
Exempt Value:	$0	**Deed Page:**	0
Net Value:	$23593	**District:**	160
Livestock Value:	$0	**Section:**	08
Manufactured Home Value:	$0	**Township:**	19
Personal Property:	$0	**Range:**	35
Land Value:	$2202	**Date Filed:**	0
Improvement Value:	$68577	**Most Current Tax:**	538
Full Value:	$70779	**Year Recorded:**	

Square Foot and Year Built listed only to be used for comparative purposes, NOT to be used for commerce.

Building Information			
Year Built:	1955	**Number of Stories:**	1
Basement SQFT:	0	**First Floor SQFT:**	1630
Second Floor SQFT:	0		

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Lea County Parcel Report



Sections
Lea County Roads
Parcels

1:18,056

0 0.13 0.25 0.5 mi
0 0.2 0.4 0.8 km

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Parcel Details

OWNER NUMBER: 42063 **UPC CODE:** 4205111129268
PARCEL NUMBER: 4000420630012

Owner Information	
Owner:	SNYDER RANCHES LTD
Mailing Address:	
Property Address:	

Subdivision Information	
Name:	
Unit:	
Block:	
Lot:	

Legal Information
320.00 AC BEING E2

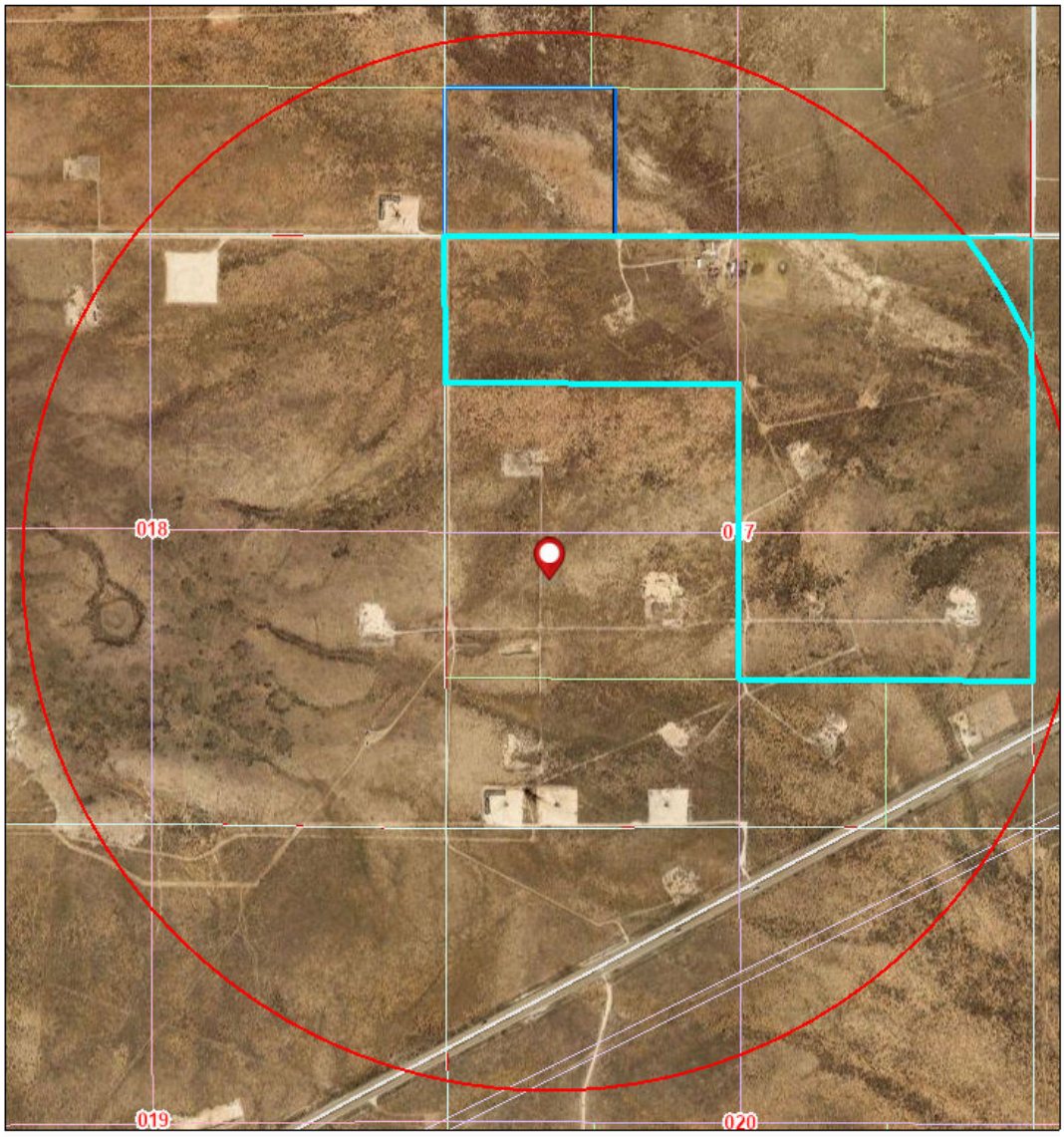
Other Information			
Taxable Value:	$1948	**Deed Book:**	328
Exempt Value:	$0	**Deed Page:**	8
Net Value:	$1948	**District:**	160
Livestock Value:	$0	**Section:**	18
Manufactured Home Value:	$0	**Township:**	19
Personal Property:	$0	**Range:**	35
Land Value:	$5844	**Date Filed:**	19720225
Improvement Value:	$0	**Most Current Tax:**	67
Full Value:	$5844	**Year Recorded:**	

Square Foot and Year Built listed only to be used for comparative purposes, NOT to be used for commerce.

Building Information			
Year Built:		**Number of Stories:**	
Basement SQFT:		**First Floor SQFT:**	
Second Floor SQFT:			

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Lea County Parcel Report



Sections
Lea County Roads
Parcels

1:18,056

0 0.13 0.25 0.5 mi
0 0.2 0.4 0.8 km

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Parcel Details

OWNER NUMBER: 41723 **UPC CODE:** 4205111332167
PARCEL NUMBER: 4000417230001

Owner Information	
Owner:	BRUTON CATTLE COMPANY LTD
Mailing Address:	55 BRUTON LN
Property Address:	53 BRUTON RD

Subdivision Information	
Name:	
Unit:	
Block:	
Lot:	

Legal Information
320.00 AC LOC N2NW4, NE4, N2SE4

Other Information			
Taxable Value:	$20471	**Deed Book:**	1657
Exempt Value:	$2000	**Deed Page:**	478
Net Value:	$18471	**District:**	160
Livestock Value:	$0	**Section:**	17
Manufactured Home Value:	$0	**Township:**	19
Personal Property:	$0	**Range:**	35
Land Value:	$2580	**Date Filed:**	20091124
Improvement Value:	$58833	**Most Current Tax:**	378
Full Value:	$61413	**Year Recorded:**	

Square Foot and Year Built listed only to be used for comparative purposes, NOT to be used for commerce.

Building Information			
Year Built:	1955	**Number of Stories:**	1
Basement SQFT:	0	**First Floor SQFT:**	1682
Second Floor SQFT:	0		

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Lea County Parcel Report



Sections
Lea County Roads
Parcels

1:18,056
0 0.13 0.25 0.5 mi
0 0.2 0.4 0.8 km

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Parcel Details

OWNER NUMBER: 42063 **UPC CODE:** 4205111139664
PARCEL NUMBER: 4000420630014

Owner Information	
Owner:	SNYDER RANCHES LTD
Mailing Address:	
Property Address:	

Subdivision Information	
Name:	
Unit:	
Block:	
Lot:	

Legal Information
160.00 AC LOC NW4

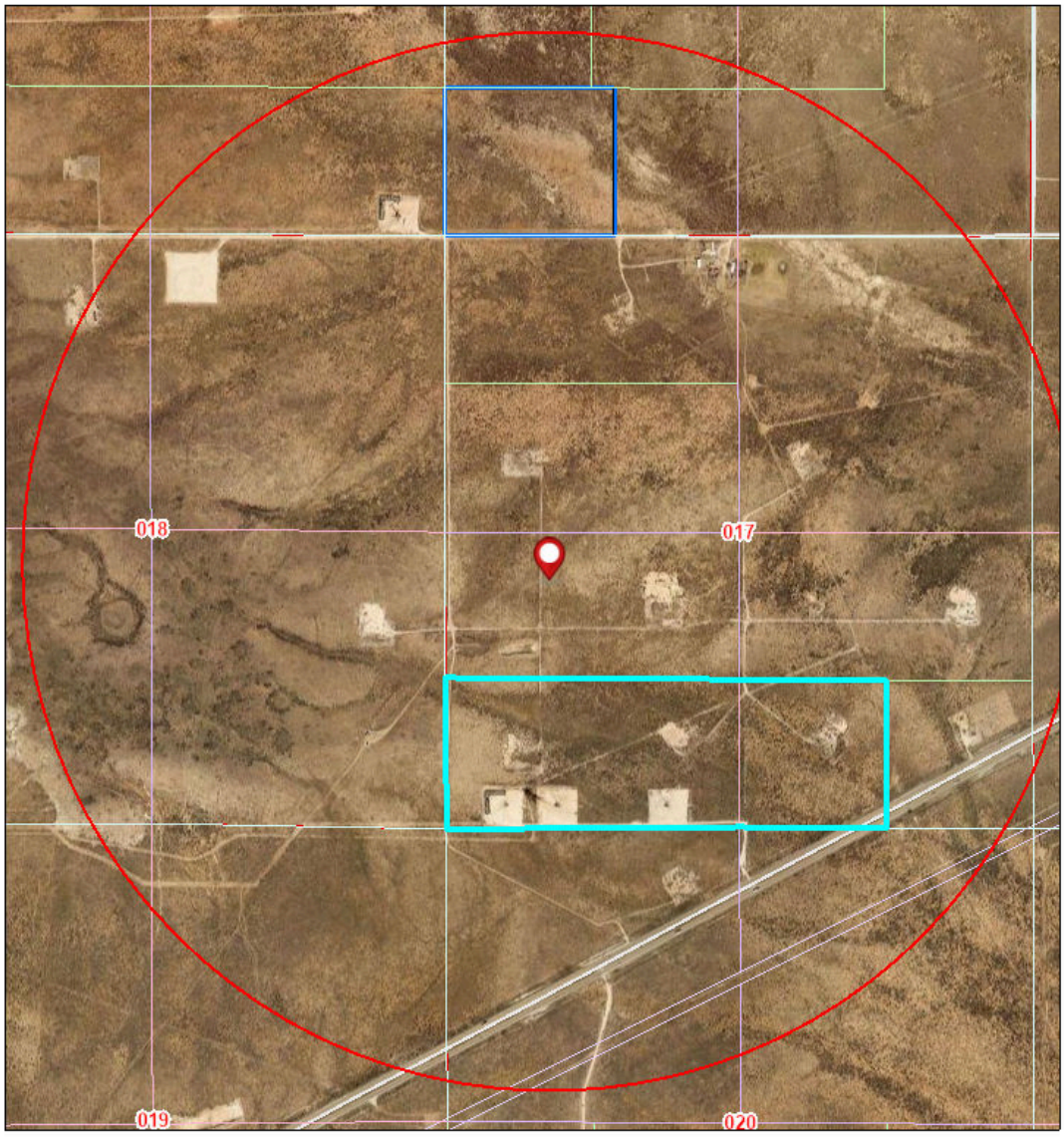
Other Information			
Taxable Value:	$1948	**Deed Book:**	328
Exempt Value:	$0	**Deed Page:**	8
Net Value:	$1948	**District:**	160
Livestock Value:	$0	**Section:**	20
Manufactured Home Value:	$0	**Township:**	19
Personal Property:	$0	**Range:**	35
Land Value:	$5844	**Date Filed:**	19720225
Improvement Value:	$0	**Most Current Tax:**	67
Full Value:	$5844	**Year Recorded:**	

Square Foot and Year Built listed only to be used for comparative purposes, NOT to be used for commerce.

Building Information			
Year Built:		**Number of Stories:**	
Basement SQFT:		**First Floor SQFT:**	
Second Floor SQFT:			

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Lea County Parcel Report



Sections
Lea County Roads
Parcels

1:18,056

0 0.13 0.25 0.5 mi
0 0.2 0.4 0.8 km

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Parcel Details

OWNER NUMBER: 41359 **UPC CODE:** 4205111203465
PARCEL NUMBER: 4000413590007

Owner Information	
Owner:	L & K RANCH LLC
Mailing Address:	PO BOX 1503
Property Address:	

Subdivision Information	
Name:	
Unit:	
Block:	
Lot:	

Legal Information
120.00 AC LOC S2SW4, SW4SE4

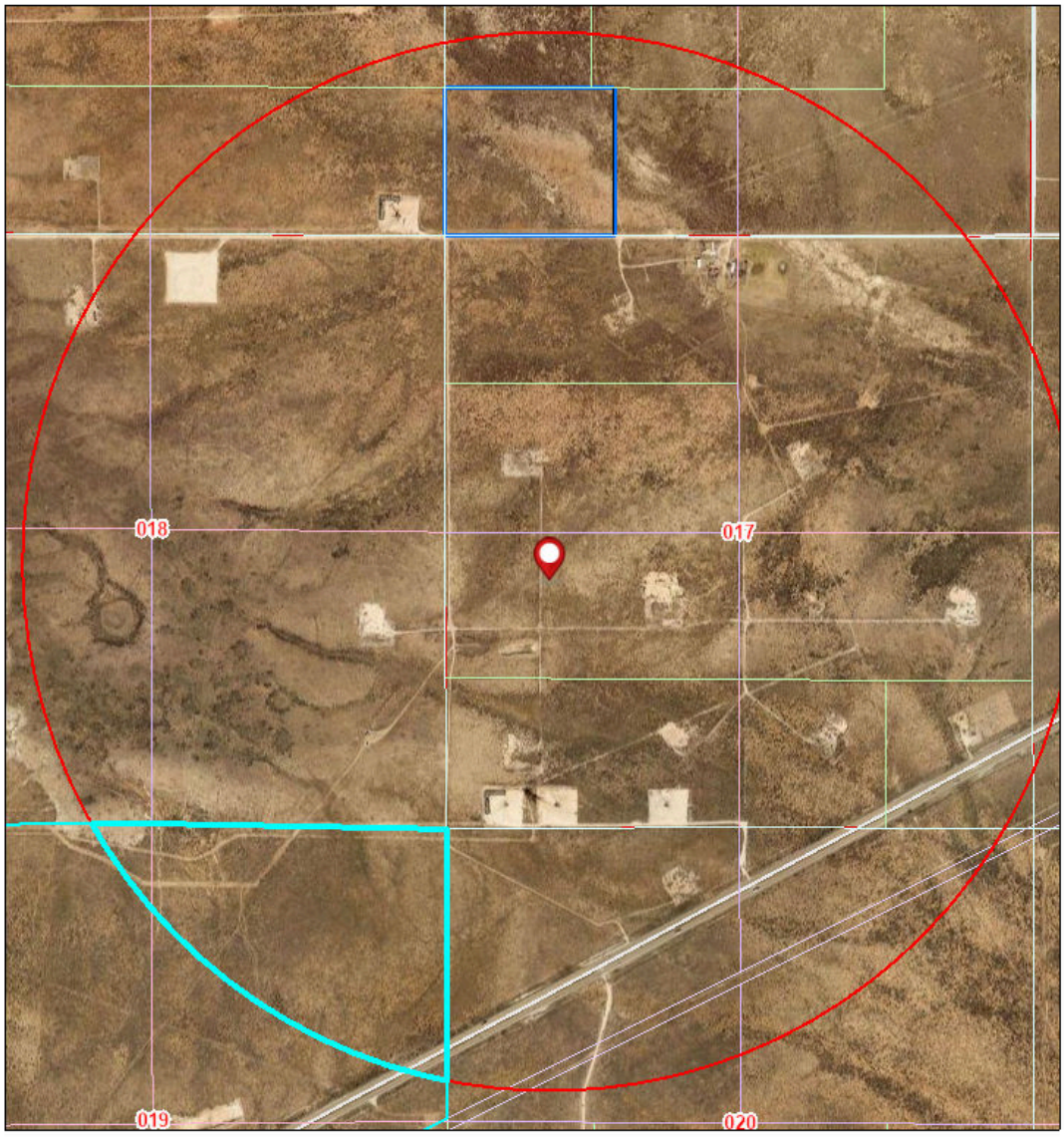
Other Information			
Taxable Value:	$22081	**Deed Book:**	2127
Exempt Value:	$0	**Deed Page:**	849
Net Value:	$22081	**District:**	160
Livestock Value:	$0	**Section:**	17
Manufactured Home Value:	$0	**Township:**	19
Personal Property:	$0	**Range:**	35
Land Value:	$12930	**Date Filed:**	20180116
Improvement Value:	$53313	**Most Current Tax:**	525
Full Value:	$66243	**Year Recorded:**	

Square Foot and Year Built listed only to be used for comparative purposes, NOT to be used for commerce.

Building Information			
Year Built:		**Number of Stories:**	
Basement SQFT:		**First Floor SQFT:**	
Second Floor SQFT:			

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Lea County Parcel Report



Sections
Lea County Roads
Parcels

1:18,056

0 0.13 0.25 0.5 mi
0 0.2 0.4 0.8 km

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Parcel Details

OWNER NUMBER: 42063 **UPC CODE:** 4205111256798
PARCEL NUMBER: 4000420630013

Owner Information	
Owner:	SNYDER RANCHES LTD
Mailing Address:	
Property Address:	

Subdivision Information	
Name:	
Unit:	
Block:	
Lot:	

Legal Information
637.80 AC ALL

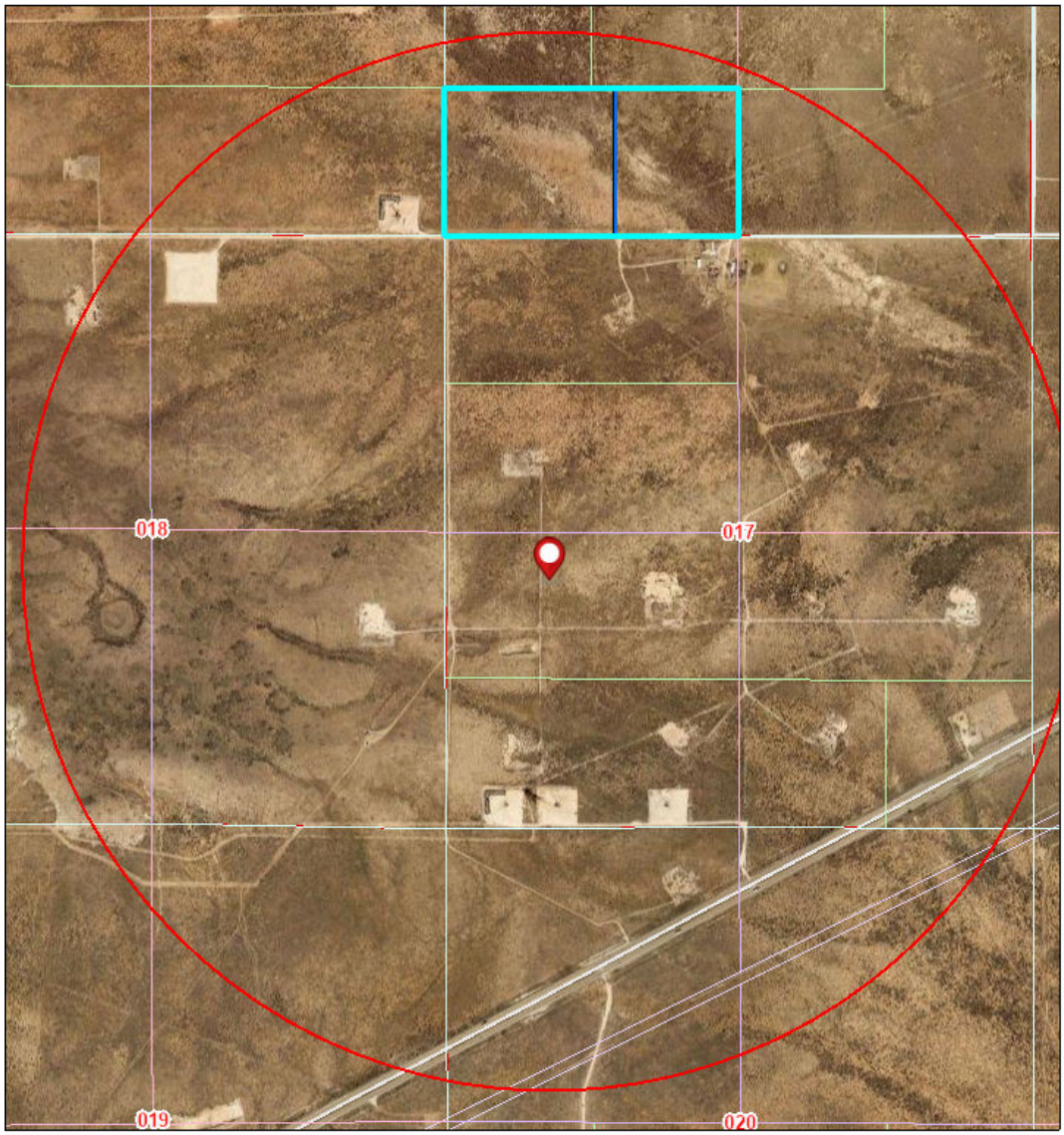
Other Information			
Taxable Value:	$1948	**Deed Book:**	328
Exempt Value:	$0	**Deed Page:**	8
Net Value:	$1948	**District:**	160
Livestock Value:	$0	**Section:**	19
Manufactured Home Value:	$0	**Township:**	19
Personal Property:	$0	**Range:**	35
Land Value:	$5844	**Date Filed:**	19720225
Improvement Value:	$0	**Most Current Tax:**	67
Full Value:	$5844	**Year Recorded:**	

Square Foot and Year Built listed only to be used for comparative purposes, NOT to be used for commerce.

Building Information			
Year Built:		**Number of Stories:**	
Basement SQFT:		**First Floor SQFT:**	
Second Floor SQFT:			

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Lea County Parcel Report



Sections
Lea County Roads
Parcels

1:18,056

0 0.13 0.25 0.5 mi
0 0.2 0.4 0.8 km

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Parcel Details

OWNER NUMBER: 42060 **UPC CODE:** 4204110531463
PARCEL NUMBER: 4000420600002

Owner Information	
Owner:	SNYDER RANCHES INC
Mailing Address:	
Property Address:	

Subdivision Information	
Name:	
Unit:	
Block:	
Lot:	

Legal Information
60.00 AC BEING UND 3/4 INT S2SW4

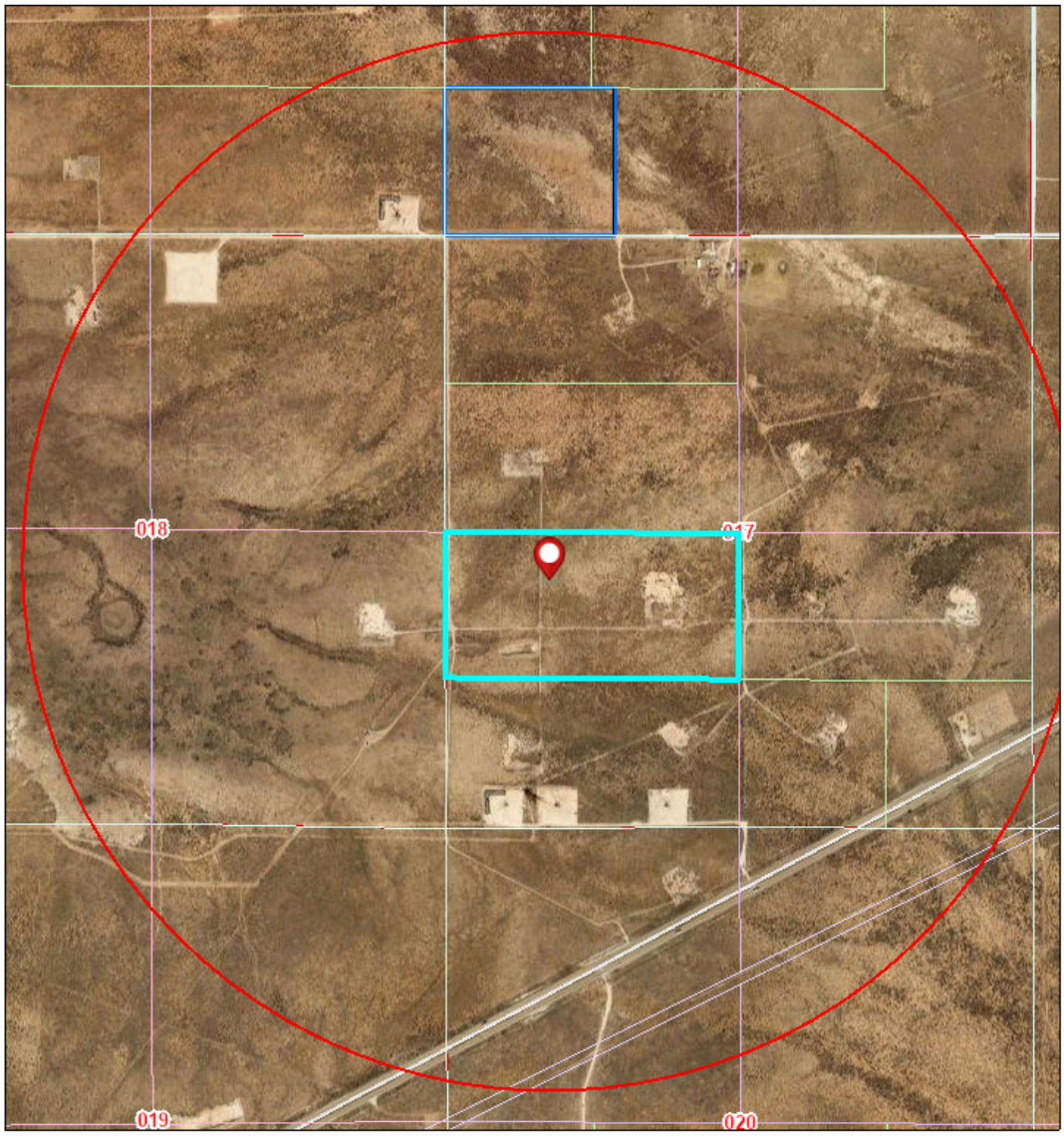
Other Information			
Taxable Value:	$125	**Deed Book:**	
Exempt Value:	$0	**Deed Page:**	0
Net Value:	$125	**District:**	160
Livestock Value:	$0	**Section:**	08
Manufactured Home Value:	$0	**Township:**	19
Personal Property:	$0	**Range:**	35
Land Value:	$375	**Date Filed:**	0
Improvement Value:	$0	**Most Current Tax:**	3
Full Value:	$375	**Year Recorded:**	

Square Foot and Year Built listed only to be used for comparative purposes, NOT to be used for commerce.

Building Information			
Year Built:		**Number of Stories:**	
Basement SQFT:		**First Floor SQFT:**	
Second Floor SQFT:			

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Lea County Parcel Report



Sections
Lea County Roads
Parcels

1:18,056

0 0.13 0.25 0.5 mi
0 0.2 0.4 0.8 km

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Parcel Details

OWNER NUMBER: 42063 **UPC CODE:** 4205111136331
PARCEL NUMBER: 4000420630011

Owner Information	
Owner:	SNYDER RANCHES LTD
Mailing Address:	
Property Address:	

Subdivision Information	
Name:	
Unit:	
Block:	
Lot:	

Legal Information
80.00 AC LOC S2NW4

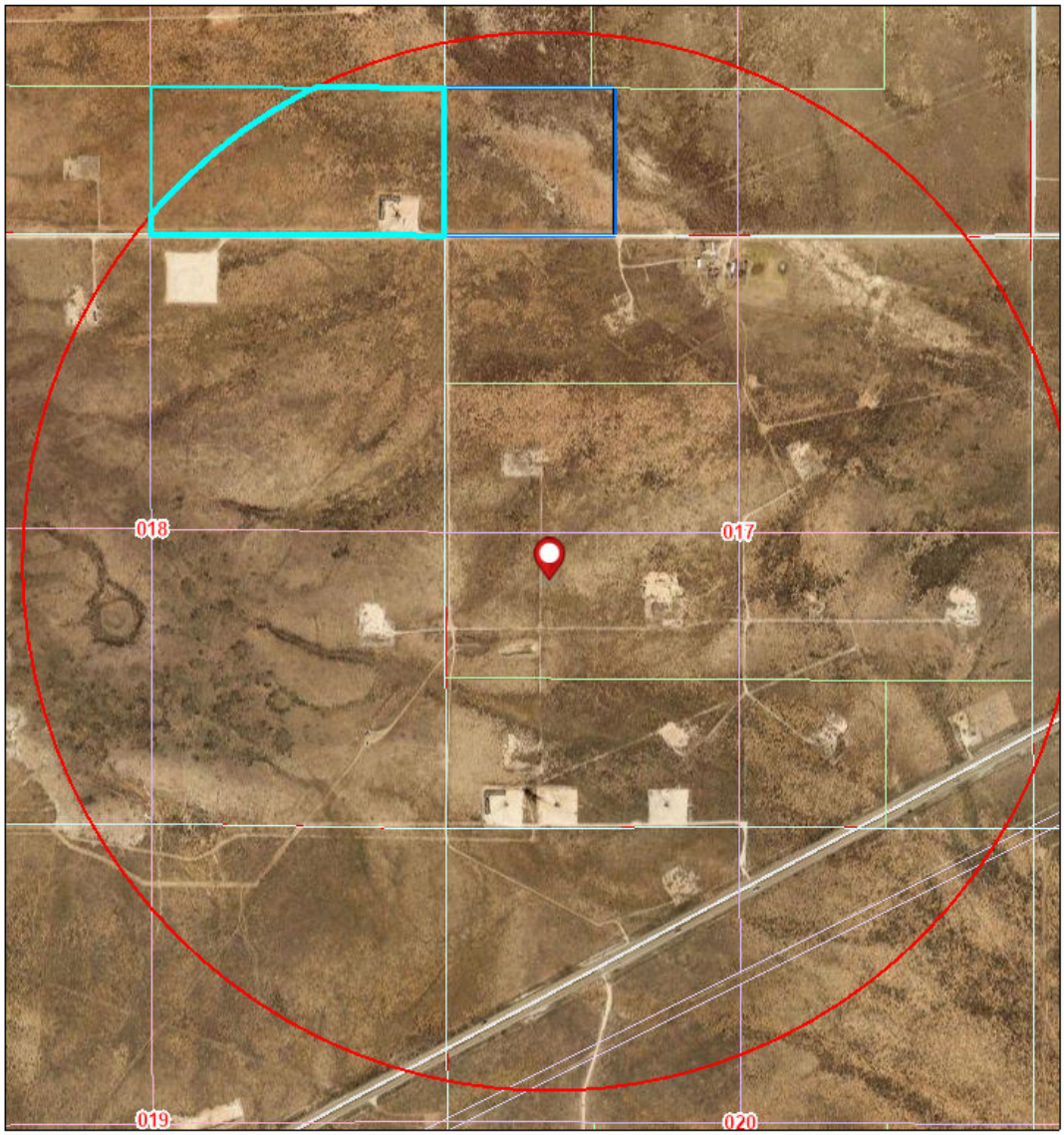
Other Information			
Taxable Value:	$1948	**Deed Book:**	328
Exempt Value:	$0	**Deed Page:**	8
Net Value:	$1948	**District:**	160
Livestock Value:	$0	**Section:**	17
Manufactured Home Value:	$0	**Township:**	19
Personal Property:	$0	**Range:**	35
Land Value:	$5844	**Date Filed:**	19720225
Improvement Value:	$0	**Most Current Tax:**	67
Full Value:	$5844	**Year Recorded:**	

Square Foot and Year Built listed only to be used for comparative purposes, NOT to be used for commerce.

Building Information			
Year Built:		**Number of Stories:**	
Basement SQFT:		**First Floor SQFT:**	
Second Floor SQFT:			

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Lea County Parcel Report



Sections
Lea County Roads
Parcels

1:18,056

0 0.13 0.25 0.5 mi
0 0.2 0.4 0.8 km

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Parcel Details

OWNER NUMBER: 42060 **UPC CODE:** 4204110531463
PARCEL NUMBER: 4000420600001

Owner Information	
Owner:	SNYDER RANCHES INC
Mailing Address:	
Property Address:	

Subdivision Information	
Name:	
Unit:	
Block:	
Lot:	

Legal Information
60.00 AC BEING UND 3/4 INT S2SE4

Other Information			
Taxable Value:	$125	**Deed Book:**	
Exempt Value:	$0	**Deed Page:**	0
Net Value:	$125	**District:**	160
Livestock Value:	$0	**Section:**	07
Manufactured Home Value:	$0	**Township:**	19
Personal Property:	$0	**Range:**	35
Land Value:	$375	**Date Filed:**	0
Improvement Value:	$0	**Most Current Tax:**	3
Full Value:	$375	**Year Recorded:**	

Square Foot and Year Built listed only to be used for comparative purposes, NOT to be used for commerce.

Building Information			
Year Built:		**Number of Stories:**	
Basement SQFT:		**First Floor SQFT:**	
Second Floor SQFT:			

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Sections
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Parcels

1:18,056

0 0.13 0.25 0.5 mi
0 0.2 0.4 0.8 km

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Parcel Details

OWNER NUMBER: 42061 **UPC CODE:** 4205110493410
PARCEL NUMBER: 4000420610001

Owner Information	
Owner:	SNYDER RANCHES INC
Mailing Address:	
Property Address:	

Subdivision Information	
Name:	
Unit:	
Block:	
Lot:	

Legal Information
120.00 AC LOC S2SE4, NE4SE4

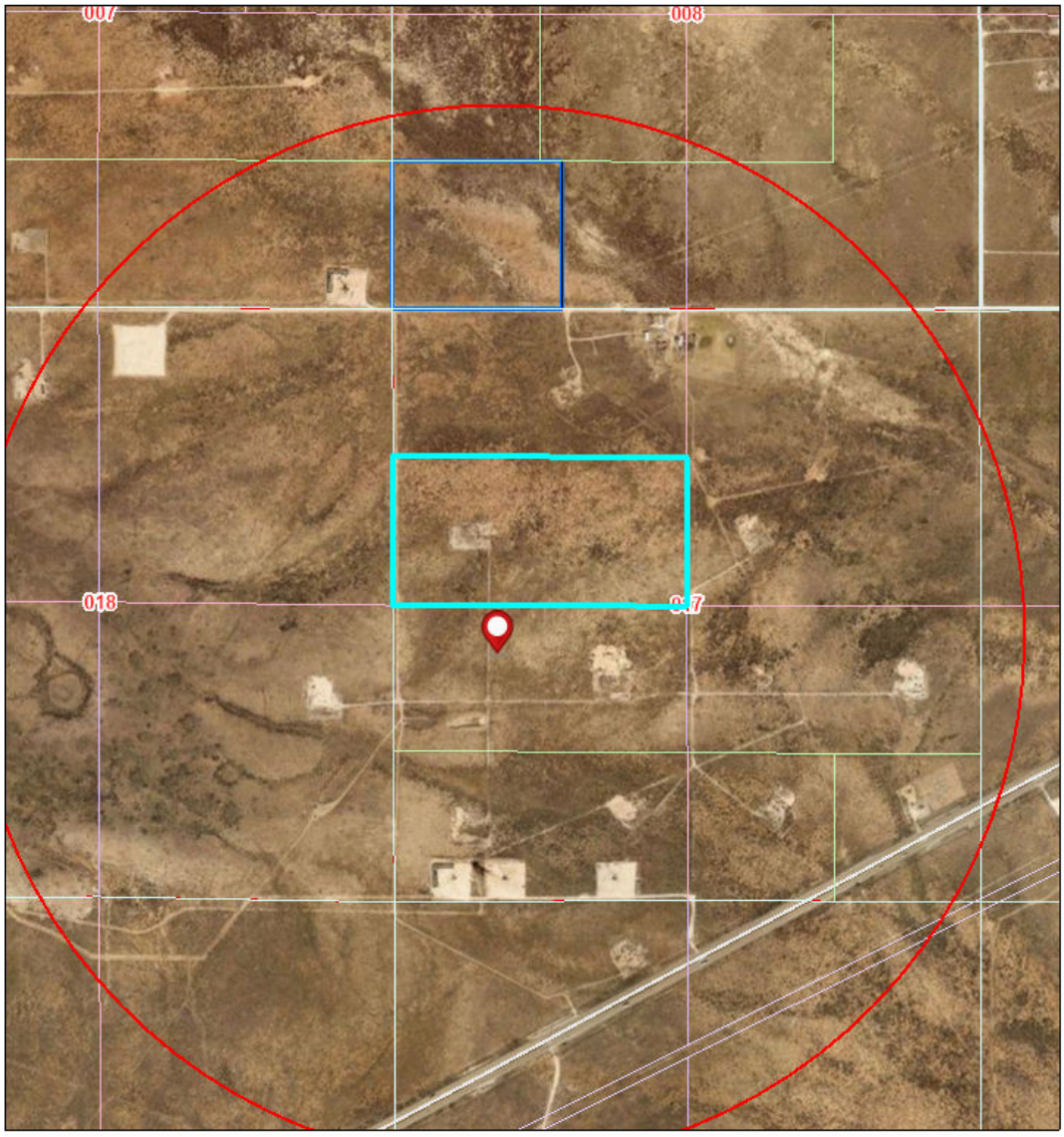
Other Information			
Taxable Value:	$23593	**Deed Book:**	
Exempt Value:	$0	**Deed Page:**	0
Net Value:	$23593	**District:**	160
Livestock Value:	$0	**Section:**	08
Manufactured Home Value:	$0	**Township:**	19
Personal Property:	$0	**Range:**	35
Land Value:	$2202	**Date Filed:**	0
Improvement Value:	$68577	**Most Current Tax:**	538
Full Value:	$70779	**Year Recorded:**	

Square Foot and Year Built listed only to be used for comparative purposes, NOT to be used for commerce.

Building Information			
Year Built:	1955	**Number of Stories:**	1
Basement SQFT:	0	**First Floor SQFT:**	1630
Second Floor SQFT:	0		

Lea County, New Mexico Disclaimer
Information deeded reliable but not guaranteed. Copyright © 2023
MAP TO BE USED FOR TAX PURPOSES ONLY. NOT TO BE USED FOR CONVEYANCE.

Lea County Parcel Report



Sections
Lea County Roads
Parcels

1:18,056

0 0.13 0.25 0.5 mi
0 0.2 0.4 0.8 km

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Parcel Details

OWNER NUMBER: 217460 **UPC CODE:** 4205111134199
PARCEL NUMBER: 4941010120019

Owner Information	
Owner:	LEA MIDSTREAM LLC
Mailing Address:	3500 MAPLE AVE STE 700
Property Address:	

Subdivision Information	
Name:	
Unit:	
Block:	
Lot:	

Legal Information
80.00 AC BEING N2SW4

Other Information			
Taxable Value:	$40000	**Deed Book:**	2229
Exempt Value:	$0	**Deed Page:**	431
Net Value:	$40000	**District:**	160
Livestock Value:	$0	**Section:**	17
Manufactured Home Value:	$0	**Township:**	19
Personal Property:	$0	**Range:**	35
Land Value:	$120000	**Date Filed:**	20240918
Improvement Value:	$0	**Most Current Tax:**	0
Full Value:	$120000	**Year Recorded:**	2024

Square Foot and Year Built listed only to be used for comparative purposes, NOT to be used for commerce.

Building Information			
Year Built:		**Number of Stories:**	
Basement SQFT:		**First Floor SQFT:**	
Second Floor SQFT:			

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9.4. Letters sent to the Owners of Record

October 16, 2025

CERTIFIED MAIL 9589 0710 5270 3302 0597 59

Dear **Brutton Cattle Company,**
Lea Midstream, LLC announces its application submittal to the New Mexico Environment Department for an air quality permit for the **modification** of its **gas plant** facility. The expected date of application submittal to the Air Quality Bureau is **August 22, 2025.**

The exact location for the proposed facility known as, **The Dude Processing Plant**, is at latitude **32** deg, **39** min, **35.42** sec and longitude **-103** deg, **29** min, **6.39** sec. The approximate location of this facility is **12.3** miles **west-northwest** of **Monument, NM** in **Lea** county.
The proposed **modification** consists of replacing one (1) stabilizer reboiler with one (1) stabilizer hot oil heater, removing two (2) produced water tanks and malfunction emissions, adding eight (8) generator engines, three (3) compressor engines, two (2) flares, and one (1) hot oil heater, and modifying the facility throughput and existing storage tanks, flares and SSM emissions.

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

Pollutant:	Pounds per hour	Tons per year
PM_{10}	7	28
$PM_{2.5}$	7	28
Sulfur Dioxide (SO_2)	4,894	204
Nitrogen Oxides (NO_x)	303	175
Carbon Monoxide (CO)	1,230	105
Volatile Organic Compounds (VOC)	1,595	233
Total sum of all Hazardous Air Pollutants (HAPs)	53	14
Hydrogen Sulfide (H_2S)	70	56
Green House Gas Emissions as Total CO_2e	N/A	221,125

The maximum operating schedule will be 24 hours per day, 7 days a week and a maximum of 52 weeks per year.

The owner and/or operator of the Facility is: **Lea Midstream, LLC; 3500 Maple Avenue, Suite 700, Dallas, TX 75219**

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

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

Attención
Este es un aviso de la oficina de Calidad del Aire del Departamento del Medio Ambiente de Nuevo México, acerca de las emisiones producidas por un establecimiento en esta área. Si usted desea información en español, por favor comuníquese con esa oficina al teléfono 505-629-7748.

Sincerely,
Lea Midstream, LLC
3500 Maple Avenue, Suite 700
Dallas, TX 75219

Notice of Non-Discrimination
NMED does not discriminate on the basis of race, color, national origin, disability, age or sex in the administration of its programs or activities, as required by applicable laws and regulations. NMED is responsible for coordination of compliance efforts and receipt of inquiries concerning non-discrimination requirements implemented by 40 C.F.R. Part 7, including Title VI of the Civil Rights Act of 1964, as amended; Section 504 of the Rehabilitation Act of 1973; the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972, and Section 13 of the Federal Water Pollution Control Act Amendments of 1972. If you have any questions

about this notice or any of NMED's non-discrimination programs, policies or procedures, or if you believe that you have been discriminated against with respect to a NMED program or activity, you may contact: Non-Discrimination Coordinator, NMED, 1190 St. Francis Dr., Suite N4050, P.O. Box 5469, Santa Fe, NM 87502, (505) 827-2855, nd.coordinator@env.nm.gov. You may also visit our website at https://www.env.nm.gov/non-employee-discrimination-complaint-page/ to learn how and where to file a complaint of discrimination.

October 16, 2025

CERTIFIED MAIL 9589 0710 5270 3302 0597 73

Dear **L & K Ranch LLC,**
Lea Midstream, LLC announces its application submittal to the New Mexico Environment Department for an air quality permit for the **modification** of its **gas plant** facility. The expected date of application submittal to the Air Quality Bureau is **August 22, 2025.**

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Total sum of all Hazardous Air Pollutants (HAPs)	53	14
Hydrogen Sulfide (H_2S)	70	56
Green House Gas Emissions as Total CO_2e	N/A	221,125

The maximum operating schedule will be 24 hours per day, 7 days a week and a maximum of 52 weeks per year.

The owner and/or operator of the Facility is: **Lea Midstream, LLC; 3500 Maple Avenue, Suite 700, Dallas, TX 75219**

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October 16, 2025

CERTIFIED MAIL 9589 0710 5270 3302 0597 66

Dear **Carlin, Shayne Kathleen Maloney,**
Lea Midstream, LLC announces its application submittal to the New Mexico Environment Department for an air quality permit for the **modification** of its **gas plant** facility. The expected date of application submittal to the Air Quality Bureau is **August 22, 2025.**

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Green House Gas Emissions as Total CO_2e	N/A	221,125

The maximum operating schedule will be 24 hours per day, 7 days a week and a maximum of 52 weeks per year.

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October 16, 2025

CERTIFIED MAIL 9589 0710 5270 3302 0596 50

Dear **Snyder Ranches LTD,**
Lea Midstream, LLC announces its application submittal to the New Mexico Environment Department for an air quality permit for the **modification** of its **gas plant** facility. The expected date of application submittal to the Air Quality Bureau is **August 22, 2025.**

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Hydrogen Sulfide (H_2S)	70	56
Green House Gas Emissions as Total CO_2e	N/A	221,125

The maximum operating schedule will be 24 hours per day, 7 days a week and a maximum of 52 weeks per year.

The owner and/or operator of the Facility is: **Lea Midstream, LLC; 3500 Maple Avenue, Suite 700, Dallas, TX 75219**

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Dallas, TX 75219

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October 16, 2025

CERTIFIED MAIL 9589 0710 5270 3302 0597 97

Dear **State of New Mexico,**
Lea Midstream, LLC announces its application submittal to the New Mexico Environment Department for an air quality permit for the **modification** of its **gas plant** facility. The expected date of application submittal to the Air Quality Bureau is **August 22, 2025.**

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Green House Gas Emissions as Total CO_2e	N/A	221,125

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October 16, 2025

CERTIFIED MAIL 9589 0710 5270 3302 0597 80

Dear **Snyder Ranches Inc.,**
Lea Midstream, LLC announces its application submittal to the New Mexico Environment Department for an air quality permit for the **modification** of its **gas plant** facility. The expected date of application submittal to the Air Quality Bureau is **August 22, 2025.**

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9.5. Letters sent to Counties, Municipalities, and Indian Tribes

October 16, 2025

CERTIFIED MAIL 7014 2870 0001 4719 4867

Dear **Lea County,**
Lea Midstream, LLC announces its application submittal to the New Mexico Environment Department for an air quality permit for the **modification** of its **gas plant** facility. The expected date of application submittal to the Air Quality Bureau is **August 22, 2025.**

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The owner and/or operator of the Facility is: **Lea Midstream, LLC; 3500 Maple Avenue, Suite 700, Dallas, TX 75219**

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

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

Attención
Este es un aviso de la oficina de Calidad del Aire del Departamento del Medio Ambiente de Nuevo México, acerca de las emisiones producidas por un establecimiento en esta área. Si usted desea información en español, por favor comuníquese con esa oficina al teléfono 505-629-7748.

Sincerely,
Lea Midstream, LLC
3500 Maple Avenue, Suite 700
Dallas, TX 75219

Notice of Non-Discrimination
NMED does not discriminate on the basis of race, color, national origin, disability, age or sex in the administration of its programs or activities, as required by applicable laws and regulations. NMED is responsible for coordination of compliance efforts and receipt of inquiries concerning non-discrimination requirements implemented by 40 C.F.R. Part 7, including Title VI of the Civil Rights Act of 1964, as amended; Section 504 of the Rehabilitation Act of 1973; the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972, and Section 13 of the Federal Water Pollution Control Act Amendments of 1972. If you have any questions

about this notice or any of NMED's non-discrimination programs, policies or procedures, or if you believe that you have been discriminated against with respect to a NMED program or activity, you may contact: Non-Discrimination Coordinator, NMED, 1190 St. Francis Dr., Suite N4050, P.O. Box 5469, Santa Fe, NM 87502, (505) 827-2855, nd.coordinator@env.nm.gov. You may also visit our website at https://www.env.nm.gov/non-employee-discrimination-complaint-page/ to learn how and where to file a complaint of discrimination.

9.6. Posted Public Notice and Verification of Local Postings

General Posting of Notices – Certification

I, GARY Boles, the undersigned, certify that on 10/15/25 posted a true and correct copy of the attached Public Notice in the following publicly accessible and conspicuous places in the **Hobbs** of **Lea** County, State of New Mexico on the following dates:

1. The Dude Processing Plant 61 Bruton Rd, Hobbs, NM 88240 10/15/25
2. Lea County District Court 100 N Love St Ste 1-A, Lovington, NM 88260 10/15/25
3. Hobbs City Hall 200 E Broadway St, Hobbs, NM 88240 10/15/25
4. Baker Brothers Bar & Grill 2827 N Dal Paso St #136, Hobbs, NM 8824 10/15/25

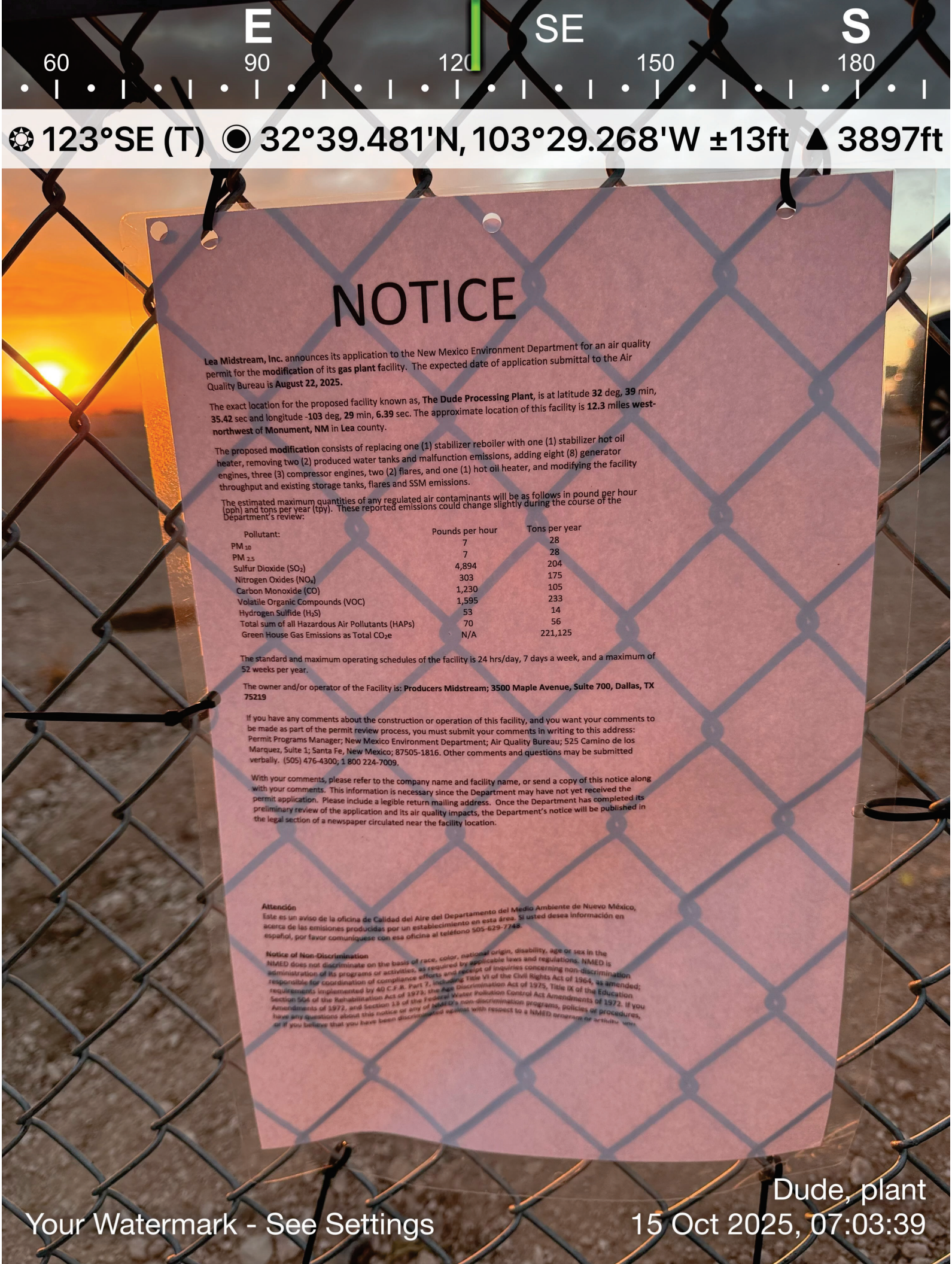
Signed this 15 day of Oct, 2025

Gary Boles
Signature

oct 15 2025
Date

GARY Boles
Printed Name

Cheif Inspector
Title {APPLICANT OR RELATIONSHIP TO APPLICANT}


E
SE
S
60
90
120
150
180
123°SE (T)
32°39.481'N, 103°29.268'W ±13ft
3897ft
NOTICE
Lea Midstream, Inc. announces its application to the New Mexico Environment Department for an air quality permit for the modification of its gas plant facility. The expected date of application submittal to the Air Quality Bureau is August 22, 2025.
The exact location for the proposed facility known as, The Dude Processing Plant, is at latitude 32 deg, 39 min, 35.42 sec and longitude -103 deg, 29 min, 6.39 sec. The approximate location of this facility is 12.3 miles west-northwest of Monument, NM in Lea county.
The proposed modification consists of replacing one (1) stabilizer reboiler with one (1) stabilizer hot oil heater, removing two (2) produced water tanks and malfunction emissions, adding eight (8) generator engines, three (3) compressor engines, two (2) flares, and one (1) hot oil heater, and modifying the facility throughput and existing storage tanks, flares and SSM emissions.
The estimated maximum quantities of any regulated air contaminants will be as follows in pound per hour (pph) and tons per year (tpy). These reported emissions could change slightly during the course of the Department's review:
Pollutant: | Pounds per hour | Tons per year
PM 10 | 7 | 28
PM 2.5 | 7 | 28
Sulfur Dioxide (SO_2) | 4,894 | 204
Nitrogen Oxides (NO_x) | 303 | 175
Carbon Monoxide (CO) | 1,230 | 105
Volatile Organic Compounds (VOC) | 1,595 | 233
Hydrogen Sulfide (H_2S) | 53 | 14
Total sum of all Hazardous Air Pollutants (HAPs) | 70 | 56
Green House Gas Emissions as Total CO_2e | N/A | 221,125
The standard and maximum operating schedules of the facility is 24 hrs/day, 7 days a week, and a maximum of 52 weeks per year.
The owner and/or operator of the Facility is: Producers Midstream; 3500 Maple Avenue, Suite 700, Dallas, TX 75219
If you have any comments about the construction or operation of this facility, and you want your comments to be made as part of the permit review process, you must submit your comments in writing to this address: Permit Programs Manager; New Mexico Environment Department; Air Quality Bureau; 525 Camino de los Marquez, Suite 1; Santa Fe, New Mexico; 87505-1816. Other comments and questions may be submitted verbally. (505) 476-4300; 1 800 224-7009.
With your comments, please refer to the company name and facility name, or send a copy of this notice along with your comments. This information is necessary since the Department may have not yet received the permit application. Please include a legible return mailing address. Once the Department has completed its preliminary review of the application and its air quality impacts, the Department's notice will be published in the legal section of a newspaper circulated near the facility location.
Atención
Este es un aviso de la oficina de Calidad del Aire del Departamento del Medio Ambiente de Nuevo México, acerca de las emisiones producidas por un establecimiento en esta área. Si usted desea información en español, por favor comuníquese con esa oficina al teléfono 505-629-7748.
Notice of Non-Discrimination
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Dude, plant
Your Watermark - See Settings
15 Oct 2025, 07:03:39

NE E SE
30 60 90 120 150
100°E (T) 32°56.917'N, 103°20.881'W ±127ft 3923ft

NOTICE

Lea Midstream, Inc. announces its application to the New Mexico Environment Department for an air quality permit for the **modification** of its **gas plant f**acility. The expected date of application submittal to the Air Quality Bureau is **August 22, 2025.**

The exact location for the proposed facility known as, **The Dude Processing Plant**, is at latitude **32** deg, **39** min, **35.42** sec and longitude -**103** deg, **29** min, **6.39** sec. The approximate location of this facility is **12.3** miles **west-northwest** of **Monument, NM** in **Lea** county.

The proposed **modification** consists of replacing one (1) stabilizer reboiler with one (1) stabilizer hot oil heater, removing two (2) produced water tanks and malfunction emissions, adding eight (8) generator engines, three (3) compressor engines, two (2) flares, and one (1) hot oil heater, and modifying the facility throughput and existing storage tanks, flares and SSM emissions.

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

Pollutant:	Pounds per hour	Tons per year
PM_{10}	7	28
$PM_{2.5}$	7	28
Sulfur Dioxide (SO_2)	4,894	204
Nitrogen Oxides (NO_x)	303	175
Carbon Monoxide (CO)	1,230	105
Volatile Organic Compounds (VOC)	1,595	233
Hydrogen Sulfide (H_2S)	53	14
Total sum of all Hazardous Air Pollutants (HAPs)	70	56
Green House Gas Emissions as Total CO_2e	N/A	221,125

The standard and maximum operating schedules of the facility is 24 hrs/day, 7 days a week, and a maximum of 52 weeks per year.

The owner and/or operator of the Facility is: **Producers Midstream; 3500 Maple Avenue, Suite 700, Dallas, TX 75219**

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

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Lea courthouse Lovington, New Mexico
Your Watermark - See Settings
14 Oct 2025, 13:18:28

NW N NE
300 330 0 30
348°N (T) 32°42.063'N, 103°8.052'W ±62ft 3619ft

NOTICE

Lea Midstream, Inc. announces its application to the New Mexico Environment Department for an air quality permit for the **modification** of its **gas plant f**acility. The expected date of application submittal to the Air Quality Bureau is **August 22, 2025.**

The exact location for the proposed facility known as, **The Dude Processing Plant**, is at latitude **32** deg, **39** min, **35.42** sec and longitude **-103** deg, **29** min, **6.39** sec. The approximate location of this facility is **12.3** miles **west-northwest** of **Monument, NM** in **Lea** county.

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$PM_{2.5}$	7	28
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Total sum of all Hazardous Air Pollutants (HAPs)	70	56
Green House Gas Emissions as Total CO_2e	N/A	221,125

The standard and maximum operating schedules of the facility is 24 hrs/day, 7 days a week, and a maximum of 52 weeks per year.

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City Hall, Hobbs, New Mexico
Your Watermark - See Settings 14 Oct 2025, 14:00:39

NW N NE
300 330 0 30 60
352°N (T) 32°43.947'N, 103°7.707'W ±154ft 3636ft

NOTICE

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The standard and maximum operating schedules of the facility is 24 hrs/day, 7 days a week, and a maximum of 52 weeks per year.

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girl scouts of the desert southwest southern new mexico & west texas

DUAL CLAY SHOOT

SPONSORSHIP FORM

Showcase your business with premier logo placement and exclusive recognition opportunities in front of our participants! Sponsorships range from $7,500 to $750 and select options include a 4-man team of shooters

Presenting - $7,500

2 teams at each event, recognition as presenting sponsor, and items listed on Platinum sponsorship

Platinum- $5,000

1 team at each event, logo on website, annual report, event material, & your promotional items in

Your Watermark - See Settings
Biker Brothers
14 Oct 2025, 15:51:52

NOTICE

Lea Midstream, Inc. announces its application to the New Mexico Environment Department for an air quality permit for the **modification** of its **gas plant f**acility. The expected date of application submittal to the Air Quality Bureau is **August 22, 2025.**

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9.7. Table of Noticed Citizens, Counties, Municipalities, and Tribes

The Dude Processing Plant - Public Notice

Table of Noticed Neighbors (within 0.5 miles of facility)

Location	Owner Address	City	State	ZIP
Brutton Cattle Company LTD	55 Bruton Ln	Monument	NM	88265-9710
Carlin, Shayne Kathleen Maloney	129 Southbrook Cir	Mankato	MN	56001
L & K Ranch LLC	PO BOX 1503	Hobbs	NM	88241
Snyder Ranches Inc	PO Box 2158	Hobbs	NM	88241
Snyder Ranches LTD	PO Box 2158	Hobbs	NM	88241
State of New Mexico	310 Old Santa Fe Trail	Santa Fe	NM	87504

Table of Noticed Municipalities (within 10 miles of facility)

Location	Owner Address	City	State	ZIP
N/A - No municipalities within 10-mile radius.				

Table of Noticed Counties (within 10 miles of facility)

Location	Owner Address	City	State	ZIP
Lea County	100 North Main	Lovington	NM	88260

Table of Noticed Tribes (within 10 miles of facility)

Location	Owner Address	City	State	ZIP
N/A - No tribes within 10-mile radius.				

9.8. Radio Public Service Announcement and Proof of Submittal

Submittal of Public Service Announcement – Certification

I, Johnny Nguyen , the undersigned, certify that on **August 21, 2025**, submitted a public service announcement to 1 Radio Square **(KZOR-KIXN-KPZA-KEJL-KLEA-KBIM FM-KBIM)** that serves the City of **Hobbs, Lea** County, New Mexico, in which the source is or is proposed to be located and that 1 Radio Square **DID NOT RESPOND.**

Signed this 21th day of August, 2025,

Johnny Nguyen
Signature

08/21/2025
Date

Johnny Nguyen
Printed Name

Consultant
Title {APPLICANT OR RELATIONSHIP TO APPLICANT}

Johnny Nguyen

From: Johnny Nguyen
Sent: Thursday, August 21, 2025 9:10 AM
To: dawn@1radiosquare.com
Cc: Beth Morley
Subject: The Dude Processing Plant Public Service Announcement

Dear Radio 92.1 KATK-FM,

Per New Mexico Administrative Code 20.2.72.203.B NMAC and according to the Guidance for Public Notice for Air Quality Permit Applications – **(5) Notifications: Submittal of Public Service Announcement (PSA):** A public service announcement required for permits and significant permit revisions must be submitted to at least one radio or television station, which services the municipality, or county which the facility is or will be located. **Therefore, based on the above, we respectfully ask you to air the information shown below as a Public Service Announcement.**

The public service announcement request must contain the following information about the facility or proposed facility (20.2.72.203.D NMAC).

a. The name: **The Dude Processing Plant**, location: latitude **32** deg, **39** min, **35.42** sec and longitude -**103** deg, **29** min, **6.39** sec and type of business: **Gas Processing**.
b. The name and principle owner or operator: **Lea Midstream, LLC** – owner and operator.
c. The type of process or change for which the permit is sought: **Initial NSR – replacing one (1) stabilizer reboiler with one (1) stabilizer hot oil heater, removing two (2) produced water tanks and malfunction emissions, adding eight (8) generator engines, three (3) compressor engines, two (2) flares, and one (1) hot oil heater, and modifying the facility throughput and existing storage tanks, flares and SSM emissions.**
d. Locations where the notices have been posted:

(1) Lea Midstream, LLC Facility Entrance – 61 Bruton Rd, Hobbs, NM 88240
(2) **Lea County District Court – 100 N Love St Ste 1-A, Lovington, NM 88260**
(3) **Hobbs City Hall – 200 E Broadway St, Hobbs, NM 88240**
(4) **Baker Brothers Bar & Grill – 2827 N Dal Paso St #136, Hobbs, NM 88240**

e. The Department's address or telephone number to which comments may be directed**: Permits Program manager; New Mexico Environment Department; Air Quality Bureau; 525 Camino de los Marquez; Suite 1, Santa Fe, New Mexico, 87505-1816; (505) 476-4300; 1(800) 224-7009.**

Regards,

Johnny Nguyen
Consultant

P 505.266.6611 ext. 3203
M 505.266.9578
Email: Johnny.Nguyen@trinityconsultants.com
9400 Holly Avenue NE, Building 3, Suite B, Albuquerque, NM 87122

Trinity Consultants

Connect with us: LinkedIn / YouTube / trinityconsultants.com
View our capabilities in the Environmental Consulting, Built Environment, Life Sciences, and Water & Ecology markets.

9.9. Newspaper Legal Ad and Legal Ad Affidavit

Affidavit of Publication

STATE OF NEW MEXICO
COUNTY OF LEA

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

Beginning with the issue dated
October 16, 2025
and ending with the issue dated
October 16, 2025.

Publisher

Sworn and subscribed to before me this 16th day of October 2025.

Business Manager

My commission expires
January 29, 2027

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

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

LEGAL NOTICE
October 16, 2025

NOTICE OF AIR QUALITY PERMIT APPLICATION

Lea Midstream, LLC announces its application submittal to the New Mexico Environment Department for a air quality permit for the **modification** of its **gas plant** facility. The expected date of application submittal t the Air Quality Bureau is **August 22, 2025.**

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Nitrogen Oxides (NO_x)	303	175
Carbon Monoxide (CO)	1,230	105
Volatile Organic Compounds (VOC)	1,595	233
Hydrogen Sulfide (H_2S)	53	14
Total sum of all Hazardous Air Pollutants (HAPs)	70	56
Green House Gas Emissions as Total CO_2e	N/A	221,125

The standard and maximum operating schedules of the facility is 24 hrs/day, 7 days a week, and a maximu of 52 weeks per year.

The owner and/or operator of the Facility is: **Lea Midstream, LLC; 3500 Maple Avenue, Suite 700, Dalla TX 75219**

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Atención
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Notice of Non-Discrimination
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01100104 00305253

TRACY POWELL
TRINITY CONSULTANTS, INC.
12700 PARK CENTRAL DR., STE. 600
DALLAS, TX 75251

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9.10. Newspaper Display Ad and Display Ad Affidavit

Affidavit of Publication

STATE OF NEW MEXICO
COUNTY OF LEA

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

Beginning with the issue dated
October 16, 2025
and ending with the issue dated
October 16, 2025.

Publisher

Sworn and subscribed to before me this 16th day of October 2025.

Business Manager

My commission expires
January 29, 2027
(Seal)

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

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

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9.11. Map of Facility and Notified Parcel Owners

Lea County Parcel Report

Area of Interest (AOI) Information

Area : 1,627.31 acres

Aug 20 2025 16:19:00 Mountain Daylight Time



Section 10

Written Description of the Routine Operations of the Facility

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

The Dude Processing Plant is an existing facility located in Lea County. High pressure gas from Producer-owned compressor stations is compressed through the facility inlet. The gas enters the facility with 120 MMSCFD of gas. Gas is sent through an amine system to remove sour components. Then, the sweet gas is routed to the dehydrator, where it is then sent to a cryogenic process, and then further compressed back to pipeline qualifications and routed offsite. The facility is authorized to operate continuously (8,760 hours per year) at design maximum capacity processing rates.

Amine Treating
The amine units are designed to remove CO_2 and H_2S from the natural gas stream to meet pipeline specifications. Lean MDEA solution is pumped to the top of the contactors and allowed to flow downward. Wet gas is fed into the bottom of the contactors and flows upward. As the lean MDEA solution flows down through the contactors, it comes in contact with the wet gas. The CO_2 and H_2S react with the amine to form an amine carbonate. The reacted amine, known as “sour” or “rich” amine is returned to a regeneration unit and the processed “sweet” gas continues to the dehydration systems. Five distinct sources of air emissions are incorporated with the amine unit (Unit ID: AMINE-1): (1) a natural gas-fired hot oil heater (Unit ID: HO-1), (2) a regeneration heater (HT-1), (3) a sour water stripper heater (HT-2), (4) an amine regenerator still vent, and (5) an amine flash tank. Emissions generated in the hot oil heater exhaust to the atmosphere through distinct stacks dedicated to the flow of combustion byproducts. Emissions from the regeneration heater exhaust to the atmosphere, along with emissions from the sour water stripper heater. Emissions generated at the regenerator still vent are controlled by acid gas injection (AGI-1). Acid Gas is compressed by two (2) of the three (3) electric acid gas compressors (EC-1 to EC-3). The third electric acid gas compressor is redundant. Four (4) AGI Well Generator Engines (ENG-16 through ENG-19) provide power to the AGI Well system. During AGI-1 downtime, emissions are sent to the AGI flare (AGI-FLARE). Flash tank overheads are injected back to the fuel line and are not a source of emissions.

Glycol Dehydration
Triethylene glycol (TEG) dehydration is used to remove water from the natural gas stream and is accomplished by reducing the inlet water dew point (temperature at which vapor begins to condense into liquid) to the outlet dew point, which will contain a specified amount of water. The wet gas is brought into contact with dry “lean” glycol in a countercurrent contactor tower. Water vapor is absorbed in the TEG solution and consequently, its dew point is reduced. Wet gas passing through the contactor tower is dehydrated. The wet (or “rich”) glycol then flows from the absorber to a regeneration system in which it is partially decompressed, and then heated to remove water vapor resulting in “lean” glycol that is reintroduced to the contactor tower. The dehydration unit (DEHY-1) incorporates three distinct sources of air emissions: (1) a natural gas fired reboiler (RBL-1), (2) a TEG recovery still vent, and (3) a glycol flash tank. Emissions generated in the reboiler exhaust to the atmosphere through distinct stacks dedicated to the flow of combustion byproducts. Emissions from the glycol recovery still vents consist of water vapor and various VOCs, including several HAPs. The vent stream from the glycol recovery still vent is controlled by a BTEX condenser. Emissions generated at the regenerator still vent are controlled by the BTEX combustor (COMB-1). Flash tank emissions are controlled by the low-pressure flare (LP-FLARE).

Cryogenic Process
The cryogenic units are designed to liquefy natural gas components from the sweet, dehydrated inlet gas by removing heat from the gas. The unit recovers natural gas liquids (NGLs) by cooling the gas stream to extremely low temperatures, which causes components such as ethane, propane, butanes, and heavier hydrocarbons to condense into a liquid phase. Cooling is achieved through a series of heat exchangers and by rapidly lowering the gas pressure. The cryogenic process operates as a closed-loop, pressurized system with no direct emissions to the atmosphere. Following NGL recovery, the residual gas is re-compressed using the energy obtained from gas expansion or by compressors associated with residue compressor engines (ENG-1 through ENG-7, ENG20 & ENG-21) and is then routed to pipeline for sale.

Flares
TEG flash gas emissions from the dehydrator flash tank is routed to the low-pressure flare (LP-FLARE) with a 100% capture efficiency and 98% DRE. Pressure Safety Valve (PSV) blowdowns and pigging SSM activities are routed to the LP-FLARE for train 1 activities. The high-pressure flare (HP-FLARE) controls SSM events that occur at train 1, such as compressor blowdowns, VRU blowdowns, dehydrator blowdowns, filter coalescer blowdowns, and pigging, which result from maintenance activities per manufacturer recommendations or other preventative measures. The train 2 flare (FLARE-2) controls SSM events that occur at train 2, such as compressor blowdowns and PSV blowdowns. Acid gas emissions from the amine regenerator still vent are routed to the AGI flare with a 100% capture efficiency and 98% DRE. Sales gas is used as assist gas to ensure the flared stream meets a minimum heating value of 617.88 Btu/scf.

Storage and Loading Operations
Liquids from the BTEX condenser are sent to atmospheric produced water tanks (PWTK-1 and PWTK-2). Liquids from the stabilizer are sent to atmospheric condensate tanks (TK-1 to TK-8). Overheads from the stabilizer are compressed using a compressor associated with the overhead compressor engine (ENG-22). Flash, working, and breathing emissions from the storage tanks are sent to the vapor recovery unit (VRU-1) with 100% capture efficiency. During VRU-1 downtime, emissions are routed to the loading combustor (COMB-2) with a 100% capture efficiency and 98% DRE. Produced water and condensate are sent to either the sales line or are truck loaded offsite. Condensate and produced water tank maintenance activities are controlled by VRU-1 and will not occur during VRU downtime.

Power Generation
Generator engines provide power to Train 1 (ENG-8 through ENG-11), Train 2 (ENG-12 through ENG-15) and the AGI well (ENG-16 through ENG-19).

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)**: Please refer to Table 2-A.**

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

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

☑ **Yes** ☐ **No**

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

☑ **Yes** ☐ **No**

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

☑ **Yes** ☐ **No**

C. Make a determination:

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

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

Section 12

Section 12.A

PSD Applicability Determination for All Sources

(Submitting under 20.2.72, 20.2.74 NMAC)

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

A. This facility is:

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

This application is for an initial NSR application.

Section 13

Determination of State & Federal Air Quality Regulations

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

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

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

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

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

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

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

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

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

State Regulations:

State Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
20.2.1 NMAC	General Provisions	Yes	Facility	The conditions of this part are applicable to all regulated equipment and facilities within the state of New Mexico; thus, The Dude Processing Plant is subject to this regulation.
20.2.3 NMAC	Ambient Air Quality Standards NMAAQS	Yes	Facility	This facility is an emission source of nitrogen dioxide, carbon monoxide, and sulfur compounds. The facility meets the maximum allowable concentrations of sulfur compounds, carbon monoxide, and nitrogen dioxide. As this site will be permitted under a GCP- Oil and Gas permit, NMAAQS have been shown to be met.
20.2.7 NMAC	Excess Emissions	Yes	Facility	This regulation establishes requirements for the Station of operation results in any excess emission, 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 NMED of any excess emissions per 20.2.7.110 NMAC.
20.2.23 NMAC	Fugitive Dust Control	No	N/A	This regulation does not apply as the facility does not operate any of the fugitive dust sources listed in 20.2.23.108.A NMAC.
20.2.33 NMAC	Gas Burning Equipment - Nitrogen Dioxide	No	N/A	This regulation applies to facilities that have gas-burning external combustion sources with more than 1,000,000 MMBtu/hr capacity. None of the external combustion equipment of this facility have a capacity greater than 1,000,000 MMBtu/hr. Therefore, this regulation does not apply to this facility.
20.2.34 NMAC	Oil Burning Equipment: NO_2	No	N/A	This regulation applies to facilities that have oil-burning external combustion sources with more than 1,000,000 MMBtu/hr capacity. This facility does not have any oil-burning external combustion equipment.
20.2.35 NMAC	Natural Gas Processing Plant – Sulfur	Yes	Facility	This regulation establishes sulfur emission standards for natural gas processing plants. This facility meets the definition of a new natural gas processing plant under this regulation and is subject to the requirements of this regulation [20.2.35.7.B NMAC]. The facility will comply with all requirements under 20.2.35 NMAC as applicable.
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 to TK-8	This facility has containers with a capacity greater than 20,000 gallons and has a throughput of over 30,000 gallons per week; therefore, this regulation applies.
20.2.39 NMAC	Sulfur Recovery Plant - Sulfur	No	N/A	This regulation establishes sulfur emission standards for sulfur recovery plants which are not part of petroleum or natural gas processing facilities. This facility is a natural gas processing facility and is thus not subject to this regulation.
20.2.50 NMAC	Oil and Gas Sector – Ozone Precursor Pollutants	Yes	ENG-1 to ENG-22, COMB-2, FUG-1, HO-1, C-1 to C-10, EC-1 to EC-3	Check the box for the subparts that are applicable: ☒113 – Engines and Turbines: ENG-1 through ENG-11 are existing natural gas-fired spark ignition engines under this subpart. ENG-12 through ENG-22 are considered "new" units under this subpart. The units do not exceed the emission standards stated in 20.2.50.113.B(3) NMAC Table 2. This facility will comply with this regulation. ☒114 – Compressor Seals: This facility has reciprocating compressors C-1 to C-10 associated with ENG-1 to ENG-8 and ENG-20 to ENG-22 and electric reciprocating acid gas compressors EC-1, EC-2, and EC-3. Thus, this facility is subject to this subpart. The Dude Processing Plant will comply with this subpart as stated in 20.2.50.114.B(2) NMAC and 20.2.50.114.B(4) NMAC. ☒115 – Control Devices and Closed Vent Systems: The control device COMB-2 at this facility is used to comply with the requirements of this rule; therefore, the facility will comply with this subpart.

State Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
				☒116 – Equipment Leaks and Fugitive Emissions: This facility has equipment leaks and fugitive (FUG-1) emissions. Thus, this facility will comply with this subpart as stated in 20.2.50.116.B NMAC. ☐ 117 – Natural Gas Well Liquid Unloading: There are no liquid unloading operations resulting in the venting of natural gas at natural gas wells at this facility; therefore, this subpart does not apply. ☐ 118 – Glycol Dehydrators: DEHY-1 does not have a PTE equal to or greater than two tpy of VOC; therefore, this subpart does not apply. ☒ 119 – Heaters: HO-1 is a natural gas-fired heater with a rated heat input ≥ 20 MMBtu/hr. The unit does not exceed the emission standards stated in 20.2.50.119.B NMAC. Therefore, the facility will comply with the requirements of this subpart. ☒ 120 – Hydrocarbon Liquid Transfers: This facility is a natural gas processing plant with hydrocarbon liquid transfers. Per the requirements of 20.2.50.120.B.(1) through (6) NMAC, the facility will comply with the requirements of this subpart. ☒121 – Pig Launching and Receiving: This facility has pig launching VOC emissions. Per the requirements of 20.2.50.121.B NMAC, the facility will comply with the requirements of this subpart. ☐122 – Pneumatic Controllers and Pumps: There are no natural gas-driven pneumatic controllers at this facility. Therefore, this facility is not subject to this subpart. ☐ 123 – Storage Vessels: This facility has less than 2 tpy maximum allowable VOC emissions. Thus, the facility is not subject to this subpart. ☐124 – Well Workovers: There are no oil or natural gas wells at this facility; therefore, this subpart does not apply. ☐ 125 – Small Business Facilities: This facility does not qualify as a small business facility; therefore, this subpart does not apply. ☐126 – Produced Water Management Unit: There are no produced water management units located at this facility; therefore, this subpart does not apply . ☐127 – Flowback Vessels and Preproduction Operations: There are no wells at this facility; therefore, this subpart does not apply.
20.2.61.109 NMAC	Smoke & Visible Emissions	Yes	ENG-1 to ENG-22, RBL-1, HO-1 to HO-3, HO-4, HT-1, HT-2, HP-FLARE, LP-FLARE, FLARE-2, AGI-FLARE, COMB-1, COMB-2	The conditions of this part are applicable to all areas within the jurisdiction of the Environmental Improvement Board, and all pieces of subject equipment with defined limitations. This regulation limits opacity to 20% applies to Stationary Combustion Equipment, such as engines, turbines, boilers, heaters, combustors, and flares. This regulation is applicable to the following units -- ENG-1 to ENG-22, RBL-1, HO-1 to HO-4, HT-1, HT-2, HP FLARE, LP FLARE, FLARE-2, AGI-FLARE, COMB-1, and COMB-2.

State Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
20.2.70 NMAC	Operating Permits	Yes	Facility	With this application, the facility will become a Title V facility once the NSR permit is issued. The facility is subject to 20.2.70 NMAC.
20.2.71 NMAC	Operating Permit Fees	Yes	Facility	This regulation establishes a schedule of operating permit emission fees. The facility is subject to 20.2.70 NMAC and is therefore subject to requirements of this regulation.
20.2.72 NMAC	Construction Permits	Yes	Facility	This regulation establishes the requirement for obtaining a construction permit. This facility is applying for an initial NSR permit and will comply with all 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.4 NMAC.
20.2.74 NMAC	Permits – Prevention of Significant Deterioration (PSD)	No	Facility	This regulation establishes requirements for obtaining a prevention of significant deterioration permit. This facility is not a major source with respect to PSD and is therefore not subject to 20.2.74 NMAC.
20.2.75 NMAC	Construction Permit Fees	Yes	Facility	This regulation establishes a schedule of operating permit emission fees. This facility is subject to 20.2.72 NMAC and in turn subject to 20.2.75 NMAC. The 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	ENG-1 to ENG-22, FUG-1, TK-1 to TK-8, C-1 to C10, EC-1 to EC-3	This regulation establishes state authority to implement new source performance standards (NSPS) for stationary sources, as amended through June 28, 2023. FUG and TK-1 to TK-8 applies as the units will be subject to NSPS OOOOb. Units ENG-1 through ENG-22 will be subject to NSPS JJJJ. The compressors associated with the compressor engines and electric compressors (C-1 to C10, EC-1 to EC-3) will be subject to NSPS OOOOb.
20.2.78 NMAC	Emission Standards for HAPS	No	N/A	This regulation establishes state authority to implement new source performance standards (NSPS) for stationary sources. This facility does not have any sources subject to this regulation.
20.2.79 NMAC	Permits – Nonattainment Areas	No	Facility	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 height 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	ENG-1 to ENG-22, DEHY-1	The Dude Processing Plant includes equipment subject to requirements under 40 CFR Part 63 and will comply with the applicability rules as discussed in this session.

Applicable Federal Regulations:

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
40 CFR 50	NAAQS	Yes	Facility	This regulation defines national ambient air quality standards. The Dude Processing Plant meets all applicable national ambient air quality standards for NO_x, CO, SO_2, H_2S, PM_{10}, $PM_{2.5}$ under this regulation.
NSPS 40 CFR 60, Subpart A	General Provisions	Yes	ENG-1 to ENG-22, FUG-1, TK-1 to	This regulation defines general provision for relevant standards that have been set under this part. The facility is subject to this regulation because the following subparts apply: - Units FUG-1 and TK-1 to TK-8 are subject to NSPS OOOOb.

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
			TK-8, C-1 to C10, EC-1 to EC-3	- Units ENG-1 to ENG-22 are subject to JJJJ. - The compressors associated with the compressor engines, and the electric compressors (C-1 to C10, EC-1 to EC-3) will be subject to NSPS OOOOb.
NSPS 40 CFR60.40a, Subpart Da	Subpart Da, Performance Standards for **Electric Utility Steam Generating Units**	No	N/A	This regulation establishes standards of performance for electric utility steam generating units that are capable of combusting more than 250 MMBtu/hr heat input of fossil fuel and for which construction, modification, or reconstruction is commenced after September 18, 1978. This regulation does not apply as the facility does not have any fossil fuel-fired steam-generating units with a heat input rate of 250 MMBtu/hr.
NSPS 40 CFR60.40b Subpart Db	Standards of Performance for **Industrial-Commercial-Institutional Steam Generating Units**	No	N/A	This regulation establishes standards of performance for industrial-commercial-institutional steam generating units that commenced construction, modification or reconstruction after June 19, 1984, and that have a heat input capacity from fuels combusted in the steam generating unit of greater than 100 MMBtu/hr. This regulation does not apply because the facility does not operate any industrial-commercial-institutional steam generating units with a heat capacity greater than 100 MMBtu/hr.
40 CFR 60.40c, Subpart Dc	Standards of Performance for **Small Industrial-Commercial-Institutional Steam Generating Units**	Yes	HO-1, HO-4, HT-1	This regulation establishes standards of performance for steam generating units for which construction, modification, or reconstruction was commenced after June 9, 1989 with a maximum design heat input capacity between 10 and 100 MMBtu/hr. The heaters (HO-1, HO-4, HT-1) have a heat input capacity greater than 10 MMBtu/hr and less than 100 MMBtu/hr; therefore, this regulation applies and will comply with the SO_2 emission standards outlined in §60.42c(a) through (j) and the PM emissions standards outlined in §60.43c(a) through (e).
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 with a storage capacity greater than 40,000 gallons that is used to store petroleum liquids for which construction commenced after May 18, 1978 prior to July 23, 1984. The facility was not constructed prior to July 23, 1984. Thus, this rule does not apply to this facility.
NSPS 40 CFR 60, Subpart Kb	Standards of Performance for **Volatile Organic Liquid Storage Vessels** (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced **After** July 23, 1984, and **On** or **Before** October 4, 2023	No	N/A	This regulation establishes performance standards for storage vessels with a capacity ≥ 75 cubic meters that is used to store volatile organic liquids for which construction, reconstruction, or modification is commenced after July 24, 1984, and on or before October 4, 2023. This facility was not constructed prior to October 4, 2023. Thus, this rule does not apply.
NSPS	Standards of Performance for	No	N/A	This regulation establishes performance standards for storage vessels with a capacity ≥ 20,000 gallons that is used to store volatile organic liquids (VOL)

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
40 CFR 60, Subpart Kc	**Volatile Organic Liquid Storage Vessels** (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced **After** October 4, 2023			for which construction, reconstruction, or modification is commenced after October 4, 2023. The atmospheric storage tanks at the facility have a capacity of 16,800 gallons each; therefore, they are not subject to this subpart.
NSPS 40 CFR 60, Subpart GG	Standards of Performance for **Stationary Gas Turbines**	No	N/A	This regulation establishes performance standards for stationary gas turbines with a heat input at peak load ≥ 10 MMBtu/hr and which commenced construction, modification, or reconstruction after October 3, 1977. This facility does not have any applicable units. Therefore, the facility is not subject to this regulation.
NSPS 40 CFR 60, Subpart KKK	Standards of Performance for Equipment Leaks of VOC From **Onshore Natural Gas Processing Plants** for Which Construction, Reconstruction, or Modification Commenced **After** January 20, 1984, and on or **Before** August 23, 2011	No	N/A	This regulation defines standards of performance for equipment leaks of VOC emissions from onshore natural gas processing plants for which construction, reconstruction, or modification commenced after January 20, 1984, and on or before August 23, 2011. This facility was constructed after August 23, 2011. Therefore, this regulation does not apply to this facility.
NSPS 40 CFR Part 60 Subpart LLL	Standards of Performance for SO_2 Emissions From **Onshore Natural Gas Processing** for Which Construction, Reconstruction, or Modification Commenced **After** January 20, 1984, and on or **Before** August 23, 2011	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 units commenced after January 20, 1984, and on or before August 23, 2011. The facility is not subject to this regulation as the amine sweetening units were constructed after August 23, 2011.
NSPS 40 CFR Part 60 Subpart OOOO	Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution for which construction, modification or reconstruction commenced **after** August 23, 2011 and **before** September 18, 2015	No	N/A	This regulation establishes emission standards for the control of VOC and SO_2 emissions from affected facilities, as listed in paragraphs (a) through (g) of this section, that commenced construction, modification, or reconstruction after August 23, 2011, and on or before September 18, 2015. The facility was constructed after September 18, 2015. Therefore, this regulation does not apply.

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
NSPS 40 CFR Part 60 Subpart OOOOa	Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced **After** September 18, 2015 and On or **Before** December 6, 2022	No	N/A	This regulation establishes emission standards for the control of GHGs and for VOC and SO_2 emissions from affected facilities in the crude oil and natural gas source category, as listed in paragraphs (a) through (j) of this section, that commenced construction, modification, or reconstruction after September 18, 2015, and on or before December 6, 2022. This facility was constructed after December 6, 2022. Therefore, this regulation does not apply.
NSPS 40 CFR Part 60 Subpart OOOOb	Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced **After** December 6, 2022	Yes	ENG-1 to ENG-8 and ENG-20 to ENG-22, FUG-1, TK-1 to TK-8, C-1 to C10, EC-1 to EC-3	The reciprocating compressors C-1 to C10 and EC-1 to EC-3 will comply with all applicable requirements in §60.5385b(a) through (c) or §60.5385b(d), and the requirements in §60.5385b(e) through (g). The condensate tank battery (TK-1 to TK-8) will comply with all applicable requirements in §60.5395b(a). The produced water tank battery (PWTK-1 to PWTK-2) emissions are below 6 tpy VOC and 20 tpy methane. The produced water tanks are not an applicable facility.
NSPS 40 CFR 60 Subpart IIII	Standards of performance for Stationary Compression Ignition Internal Combustion Engines	No	N/A	This regulation establishes standards of performance for stationary compression ignition combustion engines. The facility does not have any applicable units. Therefore, the facility is not subject to this regulation.
NSPS 40 CFR Part 60 Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	Yes	ENG-1 to ENG-22	ENG-1 through ENG-22 are manufactured after June 12, 2006 and have maximum engine power greater than 500 hp. ENG-1 was manufactured October 4, 1994, but was reconstructed after June 12, 2006. Thus, the above engines are subject to this subpart and will comply with all applicable requirements in §60.4233(e).
NSPS 40 CFR 60 Subpart TTTT	Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units	No	N/A	This regulation establishes standards of performance for greenhouse gas emissions for electric generating units. This facility does not have electric generating units. 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 regulation establishes emissions guidelines for greenhouse gas emissions and compliance times for electric generating units. This facility does not have electric generating units. This regulation does not apply.
NSPS 40 CFR 60, Subparts WWW, XXX, Cc, and Cf	Standards of performance for Municipal Solid Waste (MSW) Landfills	No	N/A	This facility is not a municipal solid waste landfill. This regulation does not apply.

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
NESHAP 40 CFR 61 Subpart A	General Provisions	No	N/A	NSPS 40 CFR 61 does not apply to the facility because the facility does not emit or have the triggering substances on site and/or the facility is not involved in the triggering activity.
NESHAP 40 CFR 61 Subpart E	National Emission Standards for **Mercury**	No	N/A	The provisions of this subpart are applicable to those stationary sources that 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
NESHAP 40 CFR 61 Subpart V	National Emission Standards for **Equipment Leaks** (Fugitive Emission Sources)	No	N/A	This regulation establishes national emission standards for equipment leaks (fugitive emission sources). The facility does not have equipment that operates in volatile hazardous air pollutant (VHAP) service [40 CFR Part 61.240]. The regulated activities subject to this regulation do not take place at this facility. The facility is not subject to this regulation.
MACT 40 CFR 63, Subpart A	General Provisions	Yes	ENG-1 to ENG-22, DEHY-1	The station includes equipment subject to the requirements under 40 CFR Part 63 and will comply with the applicability rules as discussed in this section.
MACT 40 CFR 63.760 Subpart HH	National Emission Standards for Hazardous Air Pollutants From **Oil and Natural Gas Production Facilities**	Yes	DEHY-1	This regulation establishes national emission standards for hazardous air pollutants from oil and natural gas production facilities. The facility is a major source of HAPs and meets the definition of a natural gas processing plant. The dehydrator will have a natural gas flow rate equal to or greater than 85 thousand standard cubic feet. The dehydrator that complies with the 1 tpy control option under 63.765(b)(1)(ii) is considered a large dehydrator under MACT HH. The units will comply with applicable closed vent and control requirements, along with monitoring, recordkeeping, and reporting requirements, as applicable.
MACT 40 CFR 63 Subpart HHH	National Emission Standards for Hazardous Air Pollutants From **Natural Gas Transmission and Storage Facilities**	No	N/A	This regulation establishes national emission standards for hazardous air pollutants from natural gas transmission and storage facilities. This regulation does not apply because this facility is not a natural gas transmission or storage facility as defined in this regulation [40 CFR Part 63.1270(a)].
MACT 40 CFR 63 Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for Major Industrial, Commercial, and Institutional Boilers & Process Heaters	No	N/A	This regulation establishes national emission standards for a major source of HAPs for industrial, commercial, and institutional boilers and process heaters. This facility is not a major source of HAPs. Therefore, this regulation does not apply to this facility.
MACT 40 CFR 63 Subpart UUUUU	National Emission Standards for Hazardous Air Pollutants Coal & Oil Fire Electric Utility Steam Generating Unit	No	N/A	This regulation establishes national emission standards for hazardous air pollutants from coal and oil-fired electric utility steam generating units. The facility does not contain the affected units. Therefore, this regulation does not apply.
MACT 40 CFR 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (**RICE MACT**)	Yes	ENG-1 to ENG-22	This regulation defines national emission standards for HAPs from stationary reciprocating Internal Combustion Engines. The engines (ENG-1 though ENG-22) are subject to MACT ZZZZ and comply by following the requirements of NSPS JJJJ per 40 CFR 63.6590(c).

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
40 CFR 64	**Compliance Assurance Monitoring**	No	N/A	This regulation establishes requirements for a Compliance Assurance Monitoring (CAM) plan for pollutant-specific emissions units at a major source required for part 70 or 71 permitting. This application is being submitted under part 72 and is therefore not subject to this regulation.
40 CFR 68	**Chemical Accident Prevention**	No	N/A	This facility does not have any sources listed in this subpart. Therefore, this regulation does not apply.
Title IV – Acid Rain 40 CFR 72	**Acid Rain**	No	N/A	This facility is not an acid rain source. This regulation does not apply.
Title IV – Acid Rain 40 CFR 73	**Sulfur Dioxide** Allowance Emissions	No	N/A	This regulation establishes sulfur dioxide allowance emissions for certain types of facilities. This facility is not an acid rain source. This regulation does not apply.
Title IV-Acid Rain 40 CFR 75	**Continuous Emissions Monitoring**	No	N/A	The facility is not an acid rain source and is therefore not subject to this regulation.
Title IV – Acid Rain 40 CFR 76	**Acid Rain** Nitrogen Oxides **Emission Reduction Program**	No	N/A	This regulation establishes an acid rain nitrogen oxide emission reduction program. This regulation applies to each coal-fired utility unit that is subject to an acid rain emissions limitation or reduction requirement for SO_2. This part does not apply because the facility does not operate any coal-fired units and is not an acid rain source [40 CFR Part 76.1].
Title VI – 40 CFR 82	Protection of **Stratospheric Ozone**	No	N/A	This regulation establishes a regulation for the protection of the stratospheric ozone. The regulation is not applicable because the facility does not "service", "maintain" or "repair" class I or class II appliances nor "dispose" of the appliances [40 CFR Part 82.1(a)].

Section 14

Operational Plan to Mitigate Emissions

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

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

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

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

All required documentation is kept onsite and will be made available to the department upon request.

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.

Alternate Operating Scenario 1 (AOS-1): During the AOS-1 scenario, the high-pressure flare (HP-FLARE), low-pressure flare (LP-FLARE), and the Train 2 flare (FLARE-2) will operate at the maximum requested allowable emissions level, controlling normal operating scenarios and startup, shutdown, and maintenance activities applicable to each unit. The acid gas injection flare (AGI-FLARE) will have pilot emissions, as the flare will be on continuously, but will not control the amine acid gas stream during this scenario.

Alternate Operating Scenario 2 (AOS-2): During the AOS-2 scenario, both the low-pressure flare (LP-FLARE) and the acid gas injection flare (AGI-FLARE) will operate at the maximum requested allowable emissions level, controlling normal operating processes applicable to each unit. The high-pressure flare (HP-FLARE) and the train 2 flare (FLARE-2) will have an active pilot but will not control any startup, shutdown, and maintenance activities.

Malfunction Flaring (AOS-3 and AOS-4):
Malfunction Flaring (FLARE-M) can occur at the high-pressure flare (HP FLARE) or the acid gas injection flare (AGI-FLARE). AOS-3 and AOS-4 only occur when malfunction flaring occurs and would never occur during AOS-1 or AOS-2.

During the AOS-3 scenario, FLARE-M events can occur at HP FLARE when there is an insufficient volume of gas routed to the Nitrogen Rejection Unit (NRU) at Cryo Trains. Only waste gas coming off the NRU membrane is flared. Malfunction flaring does not occur at the same time as other flaring emissions at HP-FLARE and therefore AOS-3 does not exceed the hourly emission rate of AOS-1. During the AOS-4 scenario, FLARE-M events can occur at AGI-FLARE during unplanned events associated with the AGI well malfunction. Malfunction flaring does not occur at the same time as other flaring emissions at AGI-FLARE and therefore AOS-4 does not exceed the hourly emission rate of AOS-2.

Flaring Alternate Operating Scenarios

Unit ID	Nominal Processes	AOS-1 Processes	AOS-2 Processes	AOS-3 Processes[1]	AOS-4 Processes[1]
HP-FLARE	Pilot Purge	Pilot Purge VRU Blowdowns Dehy Blowdowns Filter Blowdowns	Pilot Purge	N/A	Pilot Purge
LP-FLARE	Pilot Purge Dehydrator TEG Flash Gas	Pilot Purge Compressor Blowdowns PSVs Pigging	Pilot Purge Dehydrator TEG Flash Gas	Pilot Purge Compressor Blowdowns PSVs Pigging	Pilot Purge Dehydrator TEG Flash Gas
FLARE-2	Pilot	Pilot Train 2 SSM	Pilot	Pilot Train 2 SSM	Pilot
AGI-FLARE	Pilot Purge	Pilot Purge	Pilot Purge Amine Acid Gas Assist Gas	Pilot Purge	N/A
FLARE- M	N/A	N/A	N/A	Pilot Purge NRU Membrane Waste Gas	Pilot Purge Amine Acid Gas Assist Gas

[1] AOS-3 and AOS-4 only occur when Malfunction Flaring (FLARE-M) occurs.

Section 16
Air Dispersion Modeling

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

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

Check each box that applies:

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

Universal Application 4

Air Dispersion Modeling Report

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

16-A: Identification

1	Name of facility:	The Dude Processing Plant
2	Name of company:	Lea Midstream, LLC
3	Current Permit number:	0342M1
4	Name of applicant's modeler:	Adam Erenstein
5	Phone number of modeler:	505-266-6611
6	E-mail of modeler:	aerenstein@trinityconsultants.com

16-B: Brief

1	Was a modeling protocol submitted and approved? Protocol was submitted on August 15, 2025. A follow up to the agency was sent August 21, 2025. On August 27 the agency responded that there was no comments and to proceed with modeling.	Yes☒	No☒
2	Why is the modeling being done?	Other (describe below)	
3	Describe the permit changes relevant to the modeling.		
	This facility is changing from a GCP to an NSR facility. With respect to modeling, this facility will have the following units: ten (10) compressor engines (ENG-1 to ENG-7, ENG-20 to ENG-22); twelve (12) generator engines (ENG-8 to ENG-19); one (1) reboiler (RBL-1); Four (4) hot oil heaters (HO-1, HO-2, HO-3, & HO-4); one (1) regen gas heater (HT-1); one (1) sour water stripper heater (HT-2); two (2) SSM flares (HP-FLARE & FLARE-2); one (1) process and SSM flare (LP-FLARE); one (1) emergency AGI flare (AGI-FLARE); two (2) combustors (COMB-1 & COMB-2); truck loading emissions (LOAD & PW-LOAD); facility fugitive emissions (FUG); and vented startup, shutdown, and maintenance emissions (SSM). This site will also have a dehydrator; an amine treating unit; and condensate and produced water storage tanks.		

4	What geodetic datum was used in the modeling?	WGS84	
5	How long will the facility be at this location?	Longer than 1 year	
6	Is the facility a major source with respect to Prevention of Significant Deterioration (PSD)?	Yes☐	No☒
7	Identify the Air Quality Control Region (AQCR) in which the facility is located	155	

8	List the PSD baseline dates for this region (minor or major, as appropriate).	
	NO2	3/16/1988
	SO2	7/28/1978
	PM10	2/20/1979
	PM2.5	11/13/2013

9	Provide the name and distance to Class I areas within 50 km of the facility (300 km for PSD permits).		
	N/A – The closest Class I area is Carlsbad Caverns National Park located 98.5 km from this facility.		
10	Is the facility located in a non-attainment area? If so describe below	Yes☐	No☒
	N/A		
11	Describe any special modeling requirements, such as streamline permit requirements.		
	N/A		

16-C: Modeling History of Facility

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

Pollutant	Latest permit and modification number that modeled the pollutant facility-wide.	Date of Permit	Comments
CO	N/A	N/A	Facility originally permitted under GCP-O&G and has not been previously modeled.
NO_2	N/A	N/A	Facility originally permitted under GCP-O&G and has not been previously modeled.
SO_2	N/A	N/A	Facility originally permitted under GCP-O&G and has not been previously modeled.
H_2S	N/A	N/A	Facility originally permitted under GCP-O&G and has not been previously modeled.
PM2.5	N/A	N/A	Facility originally permitted under GCP-O&G and has not been previously modeled.
PM10	N/A	N/A	Facility originally permitted under GCP-O&G and has not been previously modeled.
Lead	N/A	N/A	
Ozone (PSD only)	N/A	N/A	
NM Toxic Air Pollutants (20.2.72.402 NMAC)	N/A	N/A	

16-D: Modeling performed for this application

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

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

16-E: New Mexico toxic air pollutants modeling

1 List any New Mexico toxic air pollutants (NMTAPs) from Tables A and B in 20.2.72.502 NMAC that are modeled for this application.
N/A

2 List any NMTAPs that are emitted but not modeled because stack height correction factor. Add additional rows to the table below, if required.

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

16-F: Modeling options

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

16-G: Surrounding source modeling

1	Date of surrounding source retrieval	SO_2: 7/8/2025 H_2S, PM_{10}, $PM_{2.5}$: 8/18/2025

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

AQB Source ID	Description of Corrections

	39796E1 39796E2 39796E3 39796E22	PM_{10}, $PM_{2.5}$, SO_2: Incorrect Coordinates: 283005.17 E, 4067882.789 N Updated Coordinates: 644645.97 E, 3602742.98 N (facility coordinates from the NMED APMAP)
	40164R2	$PM_{2.5}$: Source: SSM activities, abrasive blasting 1 hour per year. Removed source from 24hr models and modeled NAAQs as H7H and Class II PSD as H1H. Removed source from annual NAAQS and Class II PSD models as 40164R2 is short-term SSM emissions.
	10826E3 10826E4 10826E5 10826E6 10826E7 10826E8	SO_2: GCP O&G Permit #10260 – Caprock Yeso Battery Tank emissions are controlled by and represented at the flare 10826E1. Flare 10826E1 was updated and this volume source was removed from the model.
	610C3	SO_2: NSR Permit #0110M12—Monument Gas Plant Removed duplicate source, same unit as 610R10.
	610R10	SO_2: NSR Permit #0110M12—Monument Gas Plant Updated stack temperature to NMED guidelines, updated to effective diameter listed on 610R10. SSM emissions removed from 1hr SO_2 models per NMED Guidance.
	610R3	SO_2: NSR Permit #0110M12—Monument Gas Plant Removed duplicate source, same unit as 610R4 and cannot run simultaneously with unit 610R10.
	610R4	SO_2: NSR Permit #0110M12—Monument Gas Plant Updated stack temperature to NMED guidelines, updated to effective diameter based on previous permit application. SSM emissions removed from 1hr SO_2 models per additional NMED Guidance described in Modeling Protocol.
	38067E39	SO_2: SSM emissions removed from 1hr models per additional NMED Guidance described in Modeling Protocol.
	638E21	SO_2: SSM emissions removed from 1hr models per additional NMED Guidance described in Modeling Protocol.
	638E28	SO_2: SSM emissions removed from 1hr models per additional NMED Guidance described in Modeling Protocol.
	4664C2	SO_2: SSM emissions removed from 1hr models per additional NMED Guidance described in Modeling Protocol.
	39201E4	SO_2: SSM emissions removed from 1hr models per additional NMED Guidance described in Modeling Protocol.
	30907E2	SO_2: SSM emissions removed from 1hr models per additional NMED Guidance described in Modeling Protocol.
	40887e37	SO_2: SSM emissions removed from 1hr models per additional NMED Guidance described in Modeling Protocol.
	605R3	SO_2: GCP-O&G Permit 0060M4R1 –Buckeye Compressor Station Updated stack temp, velocity, emission rate, and diameter. SSM emissions removed from 1hr per additional NMED Guidance described in Modeling Protocol.
	605R4	SO_2: GCP-O&G Permit 0060M4R1 –Buckeye Compressor Station Unit emissions are represented at 605R3. Removed duplicate source.
	1775@4	SO_2:

		GCP-2 Permit # RE15 0265M2R1 –Aggregate Facility No2 GCP2-0265 Unit emissions listed as 100 tpy SO_2. Upon reviewing permit application, no sources were given for SO_2. Unit Removed.
	1775@1	SO_2: GCP-2 Permit # RE15 0265M2R1 –Aggregate Facility No2 GCP2-0265 Unit emissions listed as 100 tpy SO_2. Upon reviewing permit application, no sources were given for SO_2. Unit Removed.
	40164E12 40164E13 40164E14 40164E15 40164E16 40164E17	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	12920E2	SO_2: GCP-O&G Permit # 10491 –Over the Line Compressor Station Combustor- originally listed in surrounding sources as a volume source. Updated to point source updated with actual stack parameter and emission rate: Incorrect Emission Rate: 0.44 lb/hr Updated Emission Rate: 0.00625 lb/hr Stack Height: 10.8 ft Diameter: 2.5 ft Temperature: 1600F Velocity: 2 ft/s
	12920E3	SO_2: Engine- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	38537E10 38537E11	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	36317E5	SO_2: NOI 6639R1 - Mack Energy - Black Jack / Deep Jack State Tank Battery Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source with actual stack parameters: Stack Height: 20 ft Diameter: 0.67 ft Temperature: 500 Velocity: 10.37 ft/s
	36317E6	SO_2: NOI 6639R1 - Mack Energy - Black Jack / Deep Jack State Tank Battery Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source with actual stack parameters: Stack Height: 20 ft Diameter: 0.67 ft Temperature: 500 Velocity: 10.37 ft/s
	8097E1	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	11441E3	SO_2: GCP-O&G Permit # 10281M1R1—Lea Unit 14-11 CTB

		Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using stack parameters from latest application referenced from APMAP. Stack Height: 15 ft Diameter: 0.5 ft Temperature: 1000F Velocity: 62.21 ft/s
	40193E2 40193E3 40193E4 40193E5	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	39156E1	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	40022E1 40022E2 40022E3 40022E4 40022E19	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	40486E4 40486E5	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	13410E2	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	38893E21 38893E22 38893E23 38893E37 38893E38 38893E39	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	38463E18	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	12620E2 12620E3	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	38189E51 38189E52	SO_2: Combustor- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	39143E21 39143E22	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	36982E6	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	8670E3	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	40362E2 40362E14	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.

	6090E26 6090E27	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	35906E2	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	37622E8 37622E9	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	37987E18 37987E19	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	38083E17 38083E18	SO_2: Dehy Reboiler- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	38083E27 38083E28	SO_2: ECD- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	39452E6 39452E7 39452E17	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	12720E1	SO_2: Combustor- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	12720E4	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	13306E12	SO_2: Separator Heater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	39268E1 39268E2 39268E13 39268E14 39268E15	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	40162E37	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	28290E26	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	11444E3	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	11255E2	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	39618E7	SO_2:

		Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	39491E4	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	37988E17	SO_2: Heater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	12653E3	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	38390E28 38390E35	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	38897E6	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	38897E28	SO_2: Combustor- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	8423E2	SO_2: ECD- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	13185E2 13185E3 13185E4 13185E5	SO_2: Heater Treater- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Other Point sources.
	32950R1	SO_2: Flare- originally listed in surrounding sources as a volume source. Updated to point source using NMED's missing stack parameters for Flares.
	22256@1	SO_2: HMA No1 GCP3-3135 GCP-3 SO_2 emission limit is 50 tons per year. Emission rate updated Incorrect Emission Rate: 100 tpy Updated Emission Rate: 50 tpy

16-H: Building and structure downwash

1	How many buildings are present at the facility?	9 rectangular buildings.		
2	How many above ground storage tanks are present at the facility?	15 storage tanks are present at the facility represented as 14 circular buildings and 1 rectangular building.		
3	Was building downwash modeled for all buildings and tanks? If not explain why below.		Yes☒	No☐
	N/A			
4	Building comments	N/A		

16-I: Receptors and modeled property boundary

1	"Restricted Area" is an area to which public entry is effectively precluded. Effective barriers include continuous fencing, continuous walls, or other continuous barriers approved by the Department, such as rugged physical terrain with a steep grade that would require special equipment to traverse. If a large property is completely enclosed by fencing, a restricted area within the property may be identified with signage only. Public roads cannot be part of a Restricted Area. A Restricted Area is required in order to exclude receptors from the facility property. If the facility does not have a Restricted Area, then receptors shall be placed within the property boundaries of the facility. Describe the fence or other physical barrier at the facility that defines the restricted area.		
	Continuous fencing.		
2	Receptors must be placed along publicly accessible roads in the restricted area. Are there public roads passing through the restricted area?	Yes☐	No☒
3	Are restricted area boundary coordinates included in the modeling files?	Yes☒	No☐

4 Describe the receptor grids and their spacing. The table below may be used, adding rows as needed.

Grid Type	Shape	Spacing	Start distance from restricted area or center of facility	End distance from restricted area or center of facility	Comments
Variable Density	Square	50	0	800	
Variable Density	Square	100	800	3,000	
Variable Density	Square	250	3,000	6,000	
Variable Density	Square	500	6,000	10,000	
Variable Density	Square	1,000	10,000	50,000	

5	Describe receptor spacing along the fence line.
	50 m spacing.
6	Describe the PSD Class I area receptors.
	N/A - There are no Class I areas within 50 km of this facility.

16-J: Modeling Scenarios

1	Identify, define, and describe all modeling scenarios. Examples of modeling scenarios include using different production rates, times of day, times of year, simultaneous or alternate operation of old and new equipment during transition periods, etc. Alternative operating scenarios should correspond to all parts of the Universal Application and should be fully described in Section 15 of the Universal Application (UA3).
	There are two modeling scenarios for H_2S, NO_2, CO, and SO_2: AOS-1 and AOS-2. SSM emission flaring (HP-FLARE, LP-FLARE, and FLARE-2) will not occur at the same time as AGI Well Downtime Flaring (AGI-FLARE). The two modeling scenarios each represent SSM emission flaring and AGI Well Downtime Flaring with the differences in each model detailed below: AOS-1: HP-FLARE, LP-FLARE, FLARE-2 operating at maximum requested allowable emissions, AGI-FLARE pilot emissions.

AOS-2: AGI-FLARE maximum requested allowable emissions, LP-FLARE pilot and process emissions, HP-FLARE & FLARE-2 pilot emissions.

As the two scenarios are based on flaring, there is only one modeling scenario for PM_{10} and $PM_{2.5}$ as there are no flare emissions for these pollutants. Additionally, as the two scenarios are based on SSM flaring, the short-term emissions were removed from the SO_2 annual models and only one modeling scenario was used.

AOS-3 & AOS-4 are Malfunction Flaring (FLARE-M) scenarios. Malfunction flaring does not occur at the same time as other flaring emissions at HP-FLARE and therefore AOS-3 does not exceed the hourly emission rate of AOS-1 for all pollutants. Malfunction flaring does not occur at the same time as other flaring emissions at AGI-FLARE and therefore AOS-4 does not exceed the hourly emission rate of AOS-2 for all pollutants. Therefore, the only scenarios within the models are AOS-1 and AOS-2.

2 Which scenario produces the highest concentrations? Why?

CO 8-hr: The highest concentrations for this model are produced by the AOS-2 scenario.

CO 1-hr: The highest concentrations are produced by the AOS-1 scenario for this model. Hourly CO emissions are significantly higher in AOS-1 and the majority of CO emissions are emitted from the shorter flares (HP-FLARE and FLARE-2).

H_2S: The highest concentrations for this model are produced by the AOS-1 scenario.

NO_2 24hr & Annual: The highest concentrations are produced by the AOS-1 scenario for these models. AOS-1 scenario. Hourly NO_2 emissions used in the AOS-1 model are significantly higher than the emissions used in AOS-2.

NO_2 1hr: The highest concentrations for this model are produced by the AOS-2 scenario.

SO_2: The highest concentrations for the 1-hr, 3-hr, and 24-hr SO_2 models are produced by the AOS-2 scenario. Hourly SO_2 emissions used in the AOS-2 model are significantly higher than the emissions used in AOS-1. All SO_2 results for AOS-2 are significantly higher than AOS-1.

3	Were emission factor sets used to limit emission rates or hours of operation? (This question pertains to the "SEASON", "MONTH", "HROFDY" and related factor sets, not to the factors used for calculating the maximum emission rate.)	Yes☐	No☒

4 If so, describe factors for each group of sources. List the sources in each group before the factor table for that group. (Modify or duplicate table as necessary. It's ok to put the table below section 16-K if it makes formatting easier.)
Sources: N/A

5

Hour of Day	Factor	Hour of Day	Factor								
1		13									
2		14									
3		15									
4		16									
5		17									
6		18									
7		19									
8		20									
9		21									
10		22									
11		23									

	12		24									
	If hourly, variable emission rates were used that were not described above, describe them below.											
	N/A											
6	Were different emission rates used for short-term and annual modeling? If so describe below.									Yes☐		No☒

16-K: NO_2 Modeling

1	Which types of NO_2 modeling were used? Check all that apply.	
	☒	ARM2
	☐	100% NO_X to NO_2 conversion
	☐	PVMRM
	☐	OLM
	☐	Other:
2	Describe the NO_2 modeling.	
	The ARM2 Methodology was used with the default maximum and minimum ambient ratios.	
3	Were default NO_2/NO_X ratios (0.5 minimum, 0.9 maximum or equilibrium) used? If not describe and justify the ratios used below.	Yes☒ No☐
	N/A	
4	Describe the design value used for each averaging period modeled.	
	1-hour: High eighth high Annual Other (Describe): : Maximum of five individual years. (2017-2021)	

16-L: Ozone Analysis

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

	Sources that produce ozone concentrations below the ozone SIL do not cause or contribute to air contaminant levels exceeding the ozone NAAQS.		
3	Does the facility emit at least 250 tons per year of NO_X or at least 250 tons per year of VOCs? Sources that emit at least 250 tons per year of NO_X or at least 250 tons per year of VOCs are covered by the analysis above and require an individual analysis.	Yes☐	No☒

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

16-M: Particulate Matter Modeling

1	Select the pollutants for which plume depletion modeling was used.	
	☐	PM2.5
	☐	PM10
	☒	None
2	Describe the particle size distributions used. Include the source of information.	
	N/A	

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

5	If MERPs were used to account for secondary PM2.5 fill out the information below. If another method was used describe below.				
	Pollutant	NO_X	SO_2		$[PM2.5]_{24\text{-hour}}$
	$MERP_{annual}$	26780	14978		0.138
	$MERP_{24\text{-hour}}$	7331	1981		$[PM2.5]_{annual}$
	Emission rate (ton/yr)	158.26	185.06		0.0037
	N/A				

16-N: Setback Distances

1	Portable sources or sources that need flexibility in their site configuration requires that setback distances be determined between the emission sources and the restricted area boundary (e.g. fence line) for both the initial location and future locations. Describe the setback distances for the initial location.
	N/A

2	Describe the requested, modeled, setback distances for future locations, if this permit is for a portable stationary source. Include a haul road in the relocation modeling.
	N/A

16-O: PSD Increment and Source IDs

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

Unit Number in UA-2	Unit Number in Modeling Files
N/A	N/A

2	The emission rates in the Tables 2-E and 2-F should match the ones in the modeling files. Do these match? If not, explain why below.	Yes☒	No☐
	N/A		
3	Have the minor NSR exempt sources or Title V Insignificant Activities" (Table 2-B) sources been modeled?	Yes☐	No☒

4 Which units consume increment for which pollutants?
All units at this facility consume increment for all pollutants identified below.

Unit ID	NO_2	SO_2	PM10	PM2.5

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

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

16-P: Flare Modeling

1 For each flare or flaring scenario, complete the following

	Flare ID (and scenario)	Average Molecular Weight	Gross Heat Release (cal/s)	Effective Flare Diameter (m)
	HP-FLARE (AOS-1)	38.37	6,685,423	2.167
	HP-FLARE (AOS-2)	16.90	7,973	0.080*
	LP-FLARE (AOS-1)	23.54	183,838,541	11.876
	LP-FLARE (AOS-2)	28.77	347,582	0.508
	FLARE-2 (AOS-1)	22.62	30,348,482	4.839
	FLARE-2 (AOS-2)	16.90	6,133	0.070*
	AGI-FLARE (AOS-1)	16.90	3,373	0.052*

	AGI-FLARE (AOS-2)	24.53	32,261,626	4.959
	*The actual flare diameter is larger than the effective flare diameter. Actual flare diameter was used in modeling			
2	For each flare or flaring scenario, complete the following			
	Flare ID (and scenario)	Actual Flare height (m)	Gross Heat Release (cal/s)	Effective Flare height (m)
	HP-FLARE (AOS-1)	35.05	6,685,423	43.40
	HP-FLARE (AOS-2)	35.05	7,973	35.39
	LP-FLARE (AOS-1)	35.05	183,838,541	75.73*
	LP-FLARE (AOS-2)	35.05	347,582	37.08
	FLARE-2 (AOS-1)	36.58	30,348,482	53.77
	FLARE-2 (AOS-2)	36.58	6,133	36.87
	AGI-FLARE (AOS-1)	60.35	3,373	60.57
	AGI-FLARE (AOS-2)	60.35	32,261,626	78.06*
	*Effective flaring height exceeded Good Engineering Practices (GEP). A maximum effective high of 213 was used to comply with GEP			

16-Q: Volume and Related Sources

	Were the dimensions of volume sources different from standard dimensions in the Air Quality Bureau (AQB) Modeling Guidelines? If not please explain below.	Yes☒	No☐
1	The dimensions used to calculate the volume sources for Fugitives (FUG) and Startup, Shutdown, and Maintenance (SSM) emissions conservatively used smaller release sizes and were placed in the center area where emissions were to be expected. The volume source for FUG was placed in the center of the equipment where fugitives are excepted. The volume source for SSM was placed in the center of all compressors, as compressor blowdowns are the sources of vented SSM emissions. The volumes sources for loading (LOAD and PWLOAD) were calculated using the standard dimensions in the AQB Modeling Guidelines.		
2	Describe the determination of sigma-Y and sigma-Z for fugitive sources.		
	N/A		
3	Describe how the volume sources are related to unit numbers. Or say they are the same.		
	Volume sources are the same as unit numbers.		
4	Describe any open pits.		
	N/A		
5	Describe emission units included in each open pit.		

	N/A

16-R: Background Concentrations

1	Were NMED provided background concentrations used? Identify the background station used below. If non-NMED provided background concentrations were used describe the data that was used.	Yes☒	No☐
	CO: N/A		
	NO_2: N/A		
	PM2.5: Hobbs-Jefferson (350450019)		
	PM10: Hobbs-Jefferson (350250008)		
	SO_2: N/A		
	Other: N/A		
	Comments: For PM2.5, background concentrations were determined for the most recent three years, 2021 to 2023. The weighted annual mean concentration, averaged over the 3-year period was used, based on the methodology identified in 40 CFR 50, Appendix N.		
2	Were background concentrations refined to monthly or hourly values? If so describe below.	Yes☐	No☒
	N/A		

16-S: Meteorological Data

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

16-T: Terrain

1	Was complex terrain used in the modeling? If not, describe why below.	Yes☒	No☐
	N/A		
2	What was the source of the terrain data?		
	Terrain was incorporated into the modeling analysis through the use of AERMAP with the most recent 1/3 degree NED data currently available from https://apps.nationalmap.gov/downloader/#/		

16-U: Modeling Files

1	Describe the modeling files: Significant Impact Models File name format "TDPP_Poll AvgPer_AOS#_SIL.ami" • "Poll" = NO2… nitrogen oxides; CO…carbon monoxide; PM10…particulate matter, PM10; PM2.5…particulate matter, PM2.5; SO2… sulfur dioxide • "AvgPer" = averaging period. 1hr = 1 hour, etc. annual = annual • "SIL" SIL designator • "AOS#"= Flaring Scenario. # = 1 or 2 • Files may contain SIL for short-term, annual, and increment averaging periods.

NM/NAAQS and Increment Models

- File name format "TDPP _Poll AvgPer_Standard_AOS#.ami"
- "Poll" = NO2… nitrogen oxides; CO…carbon monoxide; PM10…particulate matter, PM10; PM25…particulate matter, PM2.5; SO2… sulfur dioxide
- "AvgPer" = averaging period. 1hr = 1 hour, etc. annual = annual
- "Standard"= air quality standard. PSD = PSD Increment Class II, NAAQS = NAAQS
- "AOS#"= Flaring Scenario. # = 1 or 2

PSD Class II Models

- File name format "TDPP_Poll AvgPer_Standard_AOS#_SIL.ami" or "TDPP_Poll AvgPer_Standard_AOS#.ami"
- "Poll" = NO2… nitrogen oxides; CO…carbon monoxide; PM10…particulate matter, PM10; PM2.5…particulate matter, PM2.5; SO2… sulfur dioxide
- "AvgPer" = averaging period. 1hr = 1 hour, etc. annual = annual
- "SIL" SIL designator
- "Standard"= air quality standard.
- "AOS#" = Flaring Scenario. # = 1 or 2

Culpability Models

- File name format "TDPP_Poll AvgPer_Standard_Culpability.ami"
- "Poll" = NO2… nitrogen oxides; CO…carbon monoxide; PM10…particulate matter, PM10; PM2.5…particulate matter, PM2.5; SO2… sulfur dioxide
- "AvgPer" = averaging period. 1hr = 1 hour, etc. annual = annual
- "Standard"= air quality standard. Class I = PSD Increment Class I
- "Culpability" Culpability Analysis Designator

File name (or folder and file name)	Pollutant(s)	Purpose (ROI/SIA, cumulative, culpability analysis, other)
TDPP_CO_AOS1_SIL	CO	ROI/SIA
TDPP_CO_AOS2_SIL	CO	ROI/SIA
TDPP _H2S_ AOS1_SIL	H2S	ROI/SIA
TDPP _H2S_ AOS2_SIL	H2S	ROI/SIA
TDPP_NO2 1hr_ AOS1_SIL	NO2	ROI/SIA
TDPP_NO2 24hr_ AOS1_SIL	NO2	ROI/SIA
TDPP_NO2 Ann_ AOS1_SIL	NO2	ROI/SIA
TDPP_NO2 1hr_ AOS2_SIL	NO2	ROI/SIA
TDPP_NO2 24hr_ AOS2_SIL	NO2	ROI/SIA
TDPP_NO2 Ann_ AOS2_SIL	NO2	ROI/SIA
TDPP_PM25 24hr_SIL	PM2.5	ROI/SIA
TDPP_PM25 Ann_SIL	PM2.5	ROI/SIA
TDPP_PM10 24hr_SIL	PM10	ROI/SIA
TDPP_PM10 Ann_SIL	PM10	ROI/SIA
TDPP_SO2 1hr_ AOS1_SIL	SO2	ROI/SIA
TDPP_SO2 3 hr 24hr_ AOS1_SIL	SO2	ROI/SIA
TDPP_SO2 1hr_ AOS2_SIL	SO2	ROI/SIA
TDPP_SO2 3 hr 24hr_ AOS2_SIL	SO2	ROI/SIA
TDPP_SO2 Ann_SIL	SO2	ROI/SIA
TDPP_H2S_NMAAQS_AOS1	H2S	Cumulative – ½ NMAAQs
TDPP_NO2 1hr_NAAQS_AOS2	NO2	Cumulative – 1hr NAAQs
TDPP_NO2 Ann_PSD_AOS1	NO2	Cumulative – Annual PSD Inc. Class II
TDPP_PM2.5 24hr_NAAQS	PM2.5	Cumulative – 24hr NAAQs

	TDPP_PM2.5 24hr_PSD	PM2.5	Cumulative – 24hr PSD Inc. Class II
	TDPP_PM2.5 Ann_NAAQS	PM2.5	Cumulative – Annual NAAQs
	TDPP_PM2.5 Ann_PSD	PM2.5	Cumulative – Annual PSD Inc. Class II
	TDPP_PM10 24hr_NAAQS	PM10	Cumulative – 24hr NAAQs
	TDPP_PM10 24hr_PSD	PM10	Cumulative – 24hr PSD Inc. Class II
	TDPP_SO2 3hr_PSD_AOS2	SO2	Cumulative – 3hr PSD Inc. Class II
	TDPP_SO2 24hr_PSD_AOS2	SO2	Cumulative – 24hr PSD Inc. Class II
	TDPP_SO2 1hr_NAAQS_AOS2	SO2	Cumulative – 24hr NAAQs
	TDPP_H2S_NMAAQS_Culpability	NO2	Culpability – ½ hr NMAAQS
	TDPP_PM2.5 24hr_PSD_Culpability	NO2	Culpability – 24hr PSD Inc. Class II
	TDPP_SO2 1hr_NAAQS_Culpability	NO2	Culpability – 1hr NAAQS

16-V: PSD New or Major Modification Applications

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

16-W: Modeling Results

	If ambient standards are exceeded because of surrounding sources, a culpability analysis is required for the source to show that the contribution from this source is less than the significance levels for the specific pollutant. Was culpability analysis performed? If so describe below.	Yes☒	No☐
1	Culpability Analysis was completed for the following standards: H_2S 1hr NMAAQS, $PM_{2.5}$ 24hr Class II Increment, SO_2 1hr NAAQS. A summary of all exceeding receptors is attached to the end of this document. H_2S - The 1hr NMAAQS model had 22 receptors exceed the standard of 139.3 µg/m^3. $PM_{2.5}$ – The 24hr Class II Increment model had 2 receptors that exceeded the standard of 9 µg/m^3. SO_2 – The 1hr NAAQs model had 9 receptors that exceeded the standard of 196.4 µg/m^3. A Culpability Analysis was completed for the exceeding receptors for the above pollutants in accordance with Chapter 7.2.1(V) of the NMED's Air Dispersion Modeling Guidelines (June 2024). For the Culpability Analysis model runs, two source groups were created and analyzed- a FACILITY group containing all the emission sources for The Dude Processing Plant and a Facility and Neighbor's group (PSD for $PM_{2.5}$ and NAAQS for H_2S and SO_2) containing the surrounding sources identified by NMED and the emission sources identified in the FACILITY group. The results of these two source groups were compared against the significance level and standards (NMAAQS, Class II Increment, or NAAQS) for each of the above pollutants. If the Facility + Neighbors result exceeded the standard (NMAAQS, Class II Increment, or NAAQS) and the FACILITY result did not exceed the significance level, The Dude Processing Plant would be deemed not a significant contributor to the exceedance of the standard and therefore would not be culpable. The Culpability Analysis for H_2S 1hr NMAAQS, $PM_{2.5}$ 24hr Class II Increment, and SO_2 1hr NAAQS did not have any significant results, and therefore The Dude Processing Plant is <u>not culpable</u> for the exceedances of the H_2S 1hr NMAAQS, $PM_{2.5}$ 24hr Class II Increment, and SO_2 1hr NAAQS standards.		
2	Identify the maximum concentrations from the modeling analysis. Rows may be modified, added and removed from the table below as necessary.		

Pollutant, Time Period and Standard	Modeled Facility Concentration (µg/m3)	Modeled Concentration with Surrounding Sources (µg/m3)	Secondary PM (µg/m3)	Background Concentration (µg/m3)	Cumulative Concentration (µg/m3)	Value of Standard (µg/m3)	Percent of Standard	Location		
								UTM E (m)	UTM N (m)	Elevation (ft)
AOS-1: CO 8-hr SIL	29.87	-	-	-	29.87	500	6.0%	642104	3614263	3862.63

Pollutant, Time Period and Standard	Modeled Facility Concentration (µg/m3)	Modeled Concentration with Surrounding Sources (µg/m3)	Secondary PM (µg/m3)	Background Concentration (µg/m3)	Cumulative Concentration (µg/m3)	Value of Standard (µg/m3)	Percent of Standard	Location		
								UTM E (m)	UTM N (m)	Elevation (ft)
AOS-1: CO 1-hr SIL	40.04	-	-	-	40.04	2000	2.0%	640486	3615172	3935.33
AOS-2: CO 8-hr SIL	29.87	-	-	-	29.87	500	6.0%	642104	3614263	3862.63
AOS-2: CO 1-hr SIL	35.82	-	-	-	35.82	2000	1.8%	642104	3614263	3862.63
AOS-1: H_2S 1/2-hr SIL	18.78	-	-	-	18.78	5.0	Significant	641787	3614408	3890.81
AOS-2: H_2S 1/2-hr SIL	18.78	-	-	-	18.78	5.0	Significant	641787	3614408	3890.81
AOS-1: NO_2 Annual SIL	3.88	-	-	-	3.88	1.0	Significant	642224	3615070	3838.52
AOS-1: NO_2 24-hr SIL	38.46	-	-	-	38.46	5.0	Significant	642054	3614262	3867.62
AOS-1: NO_2 1-hr SIL	64.10	-	-	-	64.10	7.52	Significant	642004	3614262	3871.82
AOS-2: NO_2 Annual SIL	3.78	-	-	-	3.78	1.0	Significant	642224	3615070	3838.52
AOS-2: NO_2 24-hr SIL	38.14	-	-	-	38.14	5.0	Significant	642054	3614262	3867.62
AOS-2: NO_2 1-hr SIL	64.10	-	-	-	64.10	7.52	Significant	642004	3614262	3871.82
$PM_{2.5}$ Annual SIL	0.49	-	-	-	0.49	0.13	Significant	642174	3615069	3839.53
$PM_{2.5}$ 24-hr SIL	3.93	-	-	-	3.93	1.2	Significant	641954	3614261	3876.97
PM_{10} Annual SIL	0.53	-	-	-	0.53	1.0	53.2%	642174	3615069	3839.53
PM_{10} 24-hr SIL	5.82	-	-	-	5.82	5.0	Significant	642054	3614262	3867.62

Pollutant, Time Period and Standard	Modeled Facility Concentration (µg/m3)	Modeled Concentration with Surrounding Sources (µg/m3)	Secondary PM (µg/m3)	Background Concentration (µg/m3)	Cumulative Concentration (µg/m3)	Value of Standard (µg/m3)	Percent of Standard	Location		
								UTM E (m)	UTM N (m)	Elevation (ft)
SO_2 Annual SIL	0.80	-	-	-	0.80	1.0	80.4%	641785	3614608	1182.10
AOS-1: SO_2 24-hr SIL	8.19	-	-	-	8.19	5.0	Significant	641786	3614422	3888.91
AOS-1: SO_2 3-hr SIL	23.45	-	-	-	23.45	25.0	93.8%	640186	3618172	3943.44
AOS-1: SO_2 1-hr SIL	25.81	-	-	-	25.81	7.8	Significant	638186	3613672	3835.40
AOS-2: SO_2 24-hr SIL	55.48	-	-	-	55.48	5.0	Significant	641836	3613922	3873.56
AOS-2: SO_2 3-hr SIL	165.59	-	-	-	165.59	25.0	Significant	643486	3616572	3833.23
AOS-2: SO_2 1-hr SIL	167.89	-	-	-	167.89	7.8	Significant	641086	3616572	3876.54
H_2S 1/2-hr NMAAQS	18.78	145.35	-	-	145.35	139.3	Exceeds Standards	642436	3615222	3830.38
NO_2 Annual PSD Class II Increment	3.88	-	-	9.3	13.18	25	52.7%	642224	3615070	3838.52
NO_2 Annual NMAAQS	3.88	-	-	9.3	13.18	94.02	14.0%	642224	3615070	3838.52
NO_2 1-hr NAAQS	50.09	-	-	65.8	115.89	188.03	61.6%	642004	3614262	3871.82
$PM_{2.5}$ Annual PSD Class II Increment	0.53	1.75	0.0037	-	1.76	4	43.9%	641186	3615272	3878.87
$PM_{2.5}$ Annual NAAQS	0.53	2.18	0.0037	6.6	8.79	9	97.6%	641186	3615272	3878.87

Pollutant, Time Period and Standard	Modeled Facility Concentration (µg/m3)	Modeled Concentration with Surrounding Sources (µg/m3)	Secondary PM (µg/m3)	Background Concentration (µg/m3)	Cumulative Concentration (µg/m3)	Value of Standard (µg/m3)	Percent of Standard	Location		
								UTM E (m)	UTM N (m)	Elevation (ft)
$PM_{2.5}$ 24-hr PSD Class II Increment	3.93	11.23	0.14	-	11.37	9	Exceeds Standards	640986	3615272	3888.75
$PM_{2.5}$ 24-hr NAAQS	2.06	9.26	0.14	16.5	25.90	35	74.0%	640986	3615272	3888.75
SO_2 24-hr PSD Class II Increment	42.91	53.18	-	-	53.18	91	58.4%	641686	3624172	3949.44
SO_2 3-hr PSD Class II Increment	130.03	426.40	-	-	426.40	512	83.3%	656186	3609672	3620.37
SO_2 1-hr NAAQS	123.19	733.13	-	-	733.13	196.4	Exceeds Standards	641686	3624172	3949.44

16-X: Summary/conclusions	
	A statement that modeling requirements have been satisfied and that the permit can be issued.
1	Lea Midstream, LLC has demonstrated that the proposed changes to NSR Permit 0342M1 would neither cause nor contribute to an exceedance of the standards for H_2S, CO, NO_2, $PM_{2.5}$, PM_{10}, and SO_2.

From:	Fong, Bryant, ENV
To:	Beth Morley
Cc:	Mustafa, Sufi A., ENV; Adam Erenstein
Subject:	FW: [EXTERNAL] The Dude Processing Plant Modeling Protocol
Date:	Wednesday, August 27, 2025 1:14:23 PM
Attachments:	image001.png The Dude_Modeling Protocol_v2.0_2025 0812.pdf

Beth,

I was forwarded The Dude modeling protocol to review. Apologies for the delayed response.

There are no comments currently. The modeling protocols appear to meet guidelines. Please proceed with modeling.

Bryant Fong
Environmental Scientist / Air Dispersion Modeler
New Mexico Environment Department / Air Quality Bureau
525 Camino de los Marquez, Suite 1
Sante Fe, NM 87505
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From: Beth Morley <Beth.Morley@trinityconsultants.com>
Sent: Friday, August 15, 2025 4:51 PM
To: Mustafa, Sufi A., ENV <sufi.mustafa@env.nm.gov>
Cc: Adam Erenstein <AErenstein@trinityconsultants.com>; Jake Matheson <jmatheson@producersmidstream.com>; Chris Halfast <chalfast@producersmidstream.com>
Subject: [EXTERNAL] The Dude Processing Plant Modeling Protocol

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Hi Sufi,

Please find attached the modeling protocol for Lea Midstream, Inc's The Dude Processing Plant. This protocol is being submitted for your review and approval.

Please contact us if you have any questions or need any additional information

Regards,

Beth Morley
Consultant

P 505.266.6611
Email: Beth.Morley@Trinityconsultants.com

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Pollutant	MW (g/g-mol)	Averaging Period	Measured Design Conc	Units	Measured (µg/m³)	SMC (µg/m³)	NAAQS (µg/m³)	Station Name	AQS ID	Most Recent □ Yrs
PM2.5		Annual		ppb	6.6		9	5□S Hobbs Jefferson (NM)	35-025-0008	2021-2023

rounding follows 40 CFR 50, Appendix N

Note: units must be either ppb or ppm

Equation: Conc. (ppm,cm3/m3) * MW (g/g-mol) * 1,000,000 (ug/g) / molar volume (L/g-mol) / 1000 cm3/L

Temperature (deg C)	25
Pressure (mmHg)	760
Volume of gas at specified temp (liter/g-mol)	24.48

AIR DISPERSION MODELING PROTOCOL

Initial NSR Modeling Protocol

Lea Midstream, Inc.
The Dude Processing Plant

Prepared By:

Adam Erenstein – Principal Consultant
Beth Morley – Consultant

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August 2025

Project 253201.0043

Trinity Consultants

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1. INTRODUCTION

1.1 Purpose of Modeling

The Dude Processing Plant (The Dude) is a gas processing plant owned by and operated by Lea Midstream, Inc (Lea Midstream). The facility utilizes amine sweetening units to remove hydrogen sulfide (H_2S) and carbon dioxide (CO_2) from raw natural gas, followed by dehydration the eliminate moisture. The sweetened gas then enters cryogenic units, where it is cooled to separate valuable natural gas liquids (NGLs) from the gas stream and transported in a sales line. Produced water and condensate are primarily transported off site via truck loadout. The Dude is currently permitted under GCP O&G permit no. 10342M1 and is located 12.3 miles west-northwest of Monument, NM in Lea County.

Lea Midstream is submitting an application pursuant to 20.2.72.200.A NMAC for an initial NSR permit application. With This application, the facility will be permitted for the following units:

- Ten (10) compressor engines (ENG-1 to ENG-7, ENG-20 to ENG-22);
- Twelve (12) generator engines (ENG-8 to ENG-19);
- One (1) reboiler (RBL-1);
- Four (4) hot oil heaters (HO-1, HO-2, HO-3, & HO-4);
- One (1) regen gas heater (HT-1);
- One (1) sour water stripper heater (HT-2);
- One (1) TEG dehydrator (DEHY-1);
- One (1) amine treating unit (AMINE-1);
- Eight (8) condensate storage tanks (TK-1 to TK-8);
- Two (2) produced water storage tanks (PWTK-1 to PWTK-2);
- Two (2) SSM flares (HP-FLARE & FLARE-2);
- One (1) process and SSM flare (LP-FLARE);
- One (1) emergency AGI flare (AGI-FLARE);
- Two (2) combustors (COMB-1 & COMB-2);
- Truck loading emissions (LOAD & PW-LOAD);
- Facility fugitive emissions (FUG); and
- Vented startup, shutdown, and maintenance emissions (SSM)

Lea Midstream seeks to demonstrate compliance with the National Ambient Air Quality Standards (NAAQS), New Mexico Ambient Air Quality Standards (NMAAQS), and PSD Increment standards as applicable for the following pollutants and averaging periods: NO_2 (1-hour and annual), CO (1-hour and 8-hour), SO_2 (1-hour, 3-hour, 24-hour, and annual), H_2S (1/2-hour), $PM_{2.5}$ (24-hour and annual), and PM_{10} (24-hour and annual).

1.2 Facility Description and Location

The approximate UTM coordinates of the facility are 642,186 meters East and 3,614,672 meters North with WGS84 datum at an elevation of approximately 3,863 feet above mean sea level.

2. MODEL INPUT OPTIONS

The latest version of the AERMOD dispersion model (version 24142) will be used for this analysis. The model will be run in regulatory mode with all default options. The ARM2 method will be used to convert NO_X to NO_2. Default minimum and maximum ambient ratios will be utilized.

2.1 Alternate Operating Scenarios

There will be two proposed Alternate operating scenarios (AOS) to be modeled:

- **AOS-1**: HP-FLARE, LP-FLARE, FLARE-2 operating at maximum requested allowable emissions, AGI-FLARE pilot emissions.
- **AOS-2**: AGI-FLARE maximum requested allowable emissions, LP-FLARE pilot and process emissions, HP-FLARE & FLARE-2 pilot emissions.

These AOS will be further detailed in Section 15 of the application package submittal and Section 16-J of the UA4 modeling report. For AOS that occur at different emission points, all scenarios will be modeled in the significant impact analysis, and the scenario that results in the most significant impact will be used to demonstrate compliance through a cumulative analysis.

2.2 Point Sources

Emissions that enter the atmosphere through a stack will be modeled as point sources. Table 1 shows the emission sources and stack parameters for point sources at the new facility. Please note that emissions and stack parameters may vary throughout the development of this application.

Table 1- Project point emission sources and stack parameters to be included in the air dispersion modeling.

Stack Number	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$	H_2S	Height	Temp	Velocity	Diam.
	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	ft	F	ft/s	ft
ENG_1	1.48	0.35	0.0082	0.11	0.11	-	27.0	816	170.0	1.3
ENG_2	1.96	0.47	0.0087	0.11	0.11	-	27.0	847	115.0	2.0
ENG_3	1.96	0.47	0.0087	0.11	0.11	-	27.0	847	115.0	2.0
ENG_4	1.96	0.47	0.0087	0.11	0.11	-	27.0	847	115.0	2.0
ENG_5	1.48	0.35	0.0082	0.11	0.11	-	27.0	816	170.0	1.3
ENG_6	1.48	0.35	0.0082	0.11	0.11	-	27.0	816	170.0	1.3
ENG_7	1.96	0.47	0.0087	0.11	0.11	-	27.0	847	115.0	2.0
ENG_8	0.82	0.32	0.013	0.32	0.32	-	21.8	1079	55.14	2.00
ENG_9	0.82	0.32	0.013	0.32	0.32	-	21.8	1079	55.14	2.00
ENG_10	0.82	0.32	0.013	0.32	0.32	-	21.8	1079	55.14	2.00
ENG_11	0.82	0.32	0.013	0.32	0.32	-	21.8	1079	55.14	2.00
ENG_12	0.82	0.32	0.013	0.32	0.32	-	21.8	1079	55.14	2.00
ENG_13	0.82	0.32	0.013	0.32	0.32	-	21.8	1079	55.14	2.00
ENG_14	0.82	0.32	0.013	0.32	0.32	-	21.8	1079	55.14	2.00
ENG_15	0.82	0.32	0.013	0.32	0.32	-	21.8	1079	55.14	2.00
ENG_16	0.82	0.32	0.013	0.32	0.32	-	21.8	1079	55.14	2.00
ENG_17	0.82	0.32	0.013	0.32	0.32	-	21.8	1079	55.14	2.00

Stack Number	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$	H_2S	Height	Temp	Velocity	Diam.
	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	ft	F	ft/s	ft
ENG_18	0.82	0.32	0.013	0.32	0.32	-	21.8	1079	55.14	2.00
ENG_19	0.82	0.32	0.013	0.32	0.32	-	21.8	1079	55.1	2.0
ENG_20	2.47	2.07	0.018	0.24	0.24	-	28.8	796	127.14	2.50
ENG_21	2.47	2.07	0.018	0.24	0.24	-	28.8	796	127.14	2.50
ENG_22	1.48	0.35	0.0082	0.11	0.11	-	27.0	816	170.0	1.3
RBL_1	0.15	0.12	0.0011	0.011	0.011	-	16.0	600	7.83	1.30
HO_1	0.39	0.48	0.019	0.20	0.20	-	15.0	600	39.05	2.50
HO_2	0.50	0.42	0.0037	0.038	0.038	-	15.6	800	35.7	1.3
HO_3	0.34	0.29	0.0026	0.026	0.026	-	15.0	600	5.00	2.50
HO_4	1.91	1.61	0.0143	0.15	0.15	-	15.0	800	34.28	2.50
HT_1	1.03	0.86	0.0077	0.078	0.078	-	15.8	800	28.8	2.0
HT_2	0.10	0.082	0.0007	0.0075	0.0075	-	16.0	600	20.00	0.70
HP_FLARE*	6.50	29.62	1.34	-	-	0.015	142.4	1832	65.62	7.11
LP_FLARE*	178.37	813.16	1165.91	-	-	11.90	178.4	1832	65.62	38.94
FLARE_2*	136.46	622.12	0.11	-	-	0.0012	213	1832	65.62	34.16
AGIFLARE*	31.38	143.06	3278.71	-	-	35.543	213	1832	65.62	16.28
COMB_1	136.46	622.12	0.11	-	-	0.0012	10.8	1600	6.55	2.50
COMB_2	31.38	143.06	3278.71	-	-	35.54	10.8	1600	1.30	2.50

* Emissions and stack parameters dependent on AOS.

2.3 Flares

Emissions from flares will be modeled as point sources using the velocity, temperature, and effective stack diameter prescribed in Section 5.2.3 of the NMED Modeling Guidelines[1].

To properly simulate flaring events, Trinity proposes to adjust the release height of flare emissions above the physical flare height to reflect the enhanced buoyancy generated by the combusted gas heat release rate. Equation (2) in Section 2.1.2 of EPA's AERSCREEN procedures will be used to calculate the effective release height.[2] Application of the effective release height is commonly used to simulate both flare pilot emissions and flared gas events at major stationary sources in other Western U.S. states[3,4,5,6] and conforms with EPA's AERSCREEN flare screening procedures. Supporting documentation for effective flaring height is presented in

[1] New Mexico Air Quality Bureau Air Dispersion Modeling Guidelines Revised June 2024

[2] AERSCREEN User's Guide, Section 2.1.2 (Flares). EPA-454/B-21-005. April 2021.

[3] Air Quality Modeling Guidelines for Arizona Air Quality Permits, Section 3.3.6 (Flares). Arizona Department of Environmental Quality. November 2019.

[4] ADEC Modeling Review Procedures Manual, Section 2.7.2.4 (Flares). Alaska Department of Environmental Conservation. October 2018.

[5] TCEQ Interoffice Memorandum "Technical Basis for Flare Parameters", Page 3. September 2004

[6] Letter to EPA from the State of Wyoming's Office of the Governor, Section 2.5.1.4 (AERMOD Hourly Emission File Development). October 2015.

Appendix A. The modeled effective release height for the flares will not exceed the Good Engineering Practice (GEP) stack height described in EPA's GEP Technical Support document[7]

Table 2- AOS Flare Effective Heights

Stack Number	AOS-1 Effective Flaring Height	AOS-2 Effective Flaring Height	Actual Stack Height
	ft	ft	ft
HP_FLARE	142.4	116.3	115
LP_FLARE	178.46	51.6	45
FLARE_2	213	120.8	120
AGIFLARE	201.53	213	199

Table 3- AOS-1 Flare emission sources and stack parameters

Stack Number	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$	H_2S	Height	Temp	Velocity	Diam.
	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	ft	F	ft/s	ft
HP_FLARE	6.50	29.62	1.34	-	-	0.015	142.4	1832	65.62	7.11
LP_FLARE	178.37	813.16	1165.91	-	-	11.90	178.46	1832	65.62	38.96
FLARE_2	136.46	622.12	0.11	-	-	0.0012	213	1832	65.62	34.16
AGIFLARE	0.045	0.20	0.00054	-	-	-	201.53	1832	65.62	0.63

Table 4- AOS-2 Flare emission sources and stack parameters

Stack Number	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$	H_2S	Height	Temp	Velocity	Diam.
	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	ft	F	ft/s	ft
HP_FLARE	0.011	0.052	0.00014	-	-	-	116.3	1832	65.62	0.32
LP_FLARE	0.33	1.51	0.030	-	-	0.00031	51.6	1832	65.62	1.65
FLARE_2	0.0039	0.018	0.00005	-	-	-	120.8	1832	65.62	0.19
AGIFLARE	31.38	143.06	3278.71	-	-	35.543	213	1832	65.62	16.28

2.4 Volume Sources

Fugitive H_2S from truck loading operation, facility components, and vented startup, shutdown, and maintenance activities will be modeled as volume sources. The volume source release height and initial lateral and vertical dimensions will follow NMED Modeling Guidelines[8] and are provided Table 5.

[7] Guideline for Determination of Good Engineering Practice Stack Height (Technical Support Document for the Stack Height Regulations). EPA-450/4-80-023R.

[8] New Mexico Air Quality Bureau Air Dispersion Modeling Guidelines Revised June 2024

Table 5- Project volume emission sources and stack parameters to be included in the air dispersion modeling.

Volume Source	H_2S	Release Height	Initial Lateral Dimension	Initial Vertical Dimension
	lb/hr	ft	ft	ft
LOAD	0.000012	4.57	1.06	2.13
PWLOAD	0.059	4.57	1.06	2.13
FUG	0.058	1.22	2.13	0.23
SSM	0.032	1.22	2.13	0.23

2.5 Building Downwash

A downwash analysis using the latest version of BPIP will be conducted and incorporated into the modeling analysis to account for potential effluent downwash due to structures at the facility. All building heights and dimensions will be confirmed before any modeling is done.

Table 6- Circular Building Downwash Structures

Building ID	X Coordinate M	Y Coordinate m	Elevation m	Height ft	Radius ft	Corners ft
TK_1	641941.05	3614487.09	1180.78	20	6	24
TK_2	641945.41	3614487.09	1180.66	20	6	24
TK_3	641950.50	3614487.09	1180.51	20	6	24
TK_4	641955.38	3614487.09	1180.37	20	6	24
TK_5	641941.05	3614481.58	1180.85	20	6	24
TK_6	641945.41	3614481.58	1180.72	20	6	24
TK_7	641950.50	3614481.58	1180.56	20	6	24
TK_8	641955.38	3614481.58	1180.42	20	6	24
PWTK_1	641945.41	3614476.48	1180.79	20	6	24
PWTK_2	641950.50	3614476.48	1180.63	20	6	24
AMTK_1	642027.33	3614461.58	1178.23	12	4	24
ROTK_1	642032.04	3614461.58	1178.08	12	4	24
TEGTK_1	642036.91	3614461.58	1177.95	12	4	24
LUBE_TK_1	641955.38	3614476.48	1180.48	12	4	24
LUBE_TK_2	641989	3614675	1176.61	12	4	24

Table 7- Rectangular Building Downwash Structures

Building ID	Building Description	X Coordinate m	Y Coordinate m	Elevation m	Height* ft	X Length ft	Y Length ft	Angle
MCC_AM	Plant 1 Amine MCC	642022.52	3614600.19	1178.57	9.5	40	8	0
MV_MCC	Plant 1 MV MCC	642038.83	3614598.68	1178.43	11.25	38	15	0
LV_MCC	Plant 1 LV MCC	642051.83	3614599.22	1178.2	13	20	8	0
AGI_MCC	Plant 1 AGI MCC	642378.56	3614561.07	1171.27	13	70	16	0
MV_MCC_2	Plant 2 MV MCC	642053.6	3614707.78	1175.62	11.25	48	16.66	0
LV_MCC_2	Plant 2 LV MCC	642072.50	3614707.78	1175.65	12	213	60	0
REFRIG	Refrig VDF Building	642088.03	3614524.05	1176.86	13	12	25	0
CONTROL	Control Room	642045.34	3614305.38	1178.97	8	61	12	0

Building ID	Building Description	X Coordinate m	Y Coordinate m	Elevation m	Height* ft	X Length ft	Y Length ft	Angle
SHOP	Shop	642077.82	3614307.45	1178.01	14	60	80	0
TK_PROP	Propane Tank	641931.66	3614488.28	1181	4	45	8	90

* Building heights used for screening but may be subject to change within the final model.

2.6 Receptor Grid Description and Elevation Data

The center point of the facility will be designated at 642,186 meters East and 3,614,672 meters North. This center point will serve as the center point for a variable density square receptor grid. The facility will be modeled with the following receptor grid design:

- Fenceline: 50 m grid spacing
- Very Fine Grid Resolution: 50 m grid spacing from 0 m to 800 m of center point
- Fine Grid Resolution: 100 m spacing from 800 m to 3,000 m of center point
- Medium Grid Resolution: 250 m spacing from 3,000 m to 6,000 m of center point
- Course Grid Resolution: 500 m spacing from 6,000 m to 10,000 m of center point
- Very Course Grid Resolution: 1,000 m from 10,000 m to 50,000 m of center point

It is expected that the highest impacts from the proposed source will be at or near the facility property.

The elevations of receptors and facility sources will be determined using the most recent NED data currently available (1/3 arc-second DEM) from the USGS website.

2.7 Meteorological Data

The Hobbs NWS dataset will be used for five meteorological years (2017-2021) as available on the NMED website.

3. PROPOSED MODELING

3.1 Significance Analysis (SIL)

The modeled ground-level concentrations will be compared to the corresponding significant impact levels (SILs) to determine whether any modeled ground-level concentrations at any receptor locations are greater than the SIL (i.e., "significant" receptors). If the significance analysis reveals that modeled ground-level concentrations for a particular pollutant and averaging period are greater than the applicable SIL, a Cumulative Impact Analysis (CIA) will be performed at the significant receptors.

3.2 Cumulative Impact Analysis (CIA)

The CIA will include impacts from the facility sources and background concentrations and/or surrounding sources as applicable.

The inclusion of background concentrations will follow the guidelines shown Table 20: "Modeling the Design Value Summary (Default Modeling)" from the Modeling Guidelines[9]. If necessary, the following monitors will be used for background concentrations:

- Del Norte High School (350010023) for CO;
- Hobbs-Jefferson Monitor (5ZS, 350250008) for NO_2;
- Hobbs-Jefferson Monitor (5ZS, 350250008) for $PM_{2.5}$; and
- Hobbs-Jefferson Monitor (5ZS, 350250008) for PM_{10};

Based on the NMED Modeling Guidelines, background concentrations will be added to the model results and compared to the NAAQS and NMAAQS standards for NO_2, CO, PM_{10} and $PM_{2.5}$ for all applicable averaging periods.

For PM_{10} and $PM_{2.5}$, the facility will be modeled with surrounding sources within 10 km of the facility and background concentration will be added to the modeling results and compared to the NAAQS standards for all applicable averaging periods. An inventory of the surrounding sources will be obtained from the NMED MergeMaster.

Based on EPA's Guidance for $PM_{2.5}$ Permit Modeling and NMED's Modeling Guidelines, sources that emit at least 40 tpy of NO_x or 40 tpy of SO_2 are considered to emit significant amounts of precursors. Sources with significant increases of $PM_{2.5}$ precursors must qualitatively and/or quantitatively account for the secondary formation of $PM_{2.5}$. The secondary formation of $PM_{2.5}$ will be calculated in this model following the NMED Modeling guidelines.

Based on the NMED Modeling Guidelines for H_2S modeling, if the facility is in the Pecos-Permian Basin Intrastate AQCR, H_2S will be modeling using the 1-hour averaging time and compared to the ½ hour averaging period.

Based on the NMED Modeling Guidelines for SO_2 modeling, if the facility is in the Pecos-Permian Basin Intrastate AQCR (AQCR 155), it will be modeled with surrounding sources, as representative monitoring is

[9] New Mexico Air Quality Bureau Air Dispersion Modeling Guidelines Revised June 2024

not available for background data. Short term/intermittent SSM emissions will be removed from surrounding sources for the 1-hour SO_2 CIA model based on additional NMED guidance presented in Appendix B.

3.3 PSD Increment Analysis

If the results of the ROI analysis for NO_2, SO_2, $PM_{2.5}$, or PM_{10} indicate concentrations greater than significance levels, PSD increment analysis will be conducted for the appropriate averaging periods. If required, the PSD increment analysis will be conducted including all PSD increment consuming and expanding sources within 25 km of the facility, plus sources emitting over 1000 pounds per hour within 50 km of the facility. The surrounding source information will be obtained from NMED MergeMaster. The predicted maximum concentrations will be compared to the appropriate Class II PSD Standard.

3.4 Class I Areas Analysis

The nearest Class I area is Carlsbad Caverns National Park at 61.2 km from the facility. A Class I area analysis will not need to be performed as the national park is not within the 50 km inclusion zone for PSD minor sources.

APPENDIX A. EFFECTIVE FLARING HEIGHT REFERENCES



AERSCREEN User's Guide

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AERSCREEN.INP horizontal stack source inputs

```
** POINTHOR DATA      Rate     Height      Temp.  Velocity      Diam.      Flow
**                0.1896E+01    5.0902  353.7056   13.2662    0.6096     8204.
```

Horizontal stack source prompts inputs

If the user enters "H" or "h" for horizontal stack source:

Enter Emission Rate (g/s):

Enter Stack Height (meters):

Enter Stack Diameter (meters):

Enter Stack Temperature (K)
Enter 0 for ambient temperature
or a negative number for temperature difference ((K))
between stack temperature and ambient temperature:

Option (1) - Exit Velocity (m/s)
Option (2) - Exit Velocity (ft/s)
Option (3) - Flow Rate (ACFM)

Enter Option for Flow Rate or Exit Velocity:

If the user chooses option 1, the prompt is:

Enter Exit Velocity (m/s):

If the user chooses option 2, the prompt is:

Enter Exit Velocity (ft/s):

If the user chooses option 3, the prompt is:

Enter Flow Rate (ACFM):

Figure 4. AERSCREEN.INP and prompts inputs for horizontal stack sources.

2.1.2 Flares

Flare sources are denoted by the term "** FLARE DATA" in the input file in the line above the source parameters. Flare source inputs are, with English and metric units:

- emission rate (lb/hr or g/s)
- stack height (feet or meters)
- total heat release rate (cal/sec)
- radiative heat loss fraction

The heat loss fraction can be user selected or the SCREEN3 default value of 0.55. For information about heat loss fractions, see Leahey and Davies (1984). AERSCREEN will process

the flare in AERMOD as a POINT source type. For the exit velocity and exit temperature, AERSCREEN defaults these values to 20 m/s and 1,273 K, respectively as done in SCREEN3 (U.S. EPA, 1995). The stack diameter and effective stack height used in AERMOD are calculated from the inputs as:

$$D = 9.88 \times 10^{-4} \times \sqrt{HR \times (1 - HL)} \quad (1)$$

$$h_{eff} = H_s + 4.56 \times 10^{-3} \times HR^{0.478} \quad (2)$$

Where D is effective stack diameter, HR is the heat release rate, HL is the heat loss fraction, H_{eff} is effective stack height and H_s is the stack height entered by the user.

AERSCREEN.INP and prompt inputs (in italics) are shown in Figure 5.

AERSCREEN.INP flare source inputs				
** FLARE DATA	Rate	Height	Heat	HeatLoss
**	0.1000E+03	35.0000	0.1000E+08	0.550
Flare source prompts inputs				
If the user enters "F" or "f" for flare source: *Enter Emission Rate (g/s):* *Enter Flare Stack Height (meters):* *Enter Total Heat Release Rate (cal/sec):* *Enter Radiative Heat Loss Fraction –* *<Enter> for default value of 0.55:*				

Figure 5. AERSCREEN.INP and prompts inputs for flare sources.

2.1.3 Volume sources

Volume sources are denoted by the term "** VOLUME DATA" in the input file in the line above the source parameters. Volume source inputs are, with English and metric units:

- emission rate (lb/hr or g/s)
- release height, i.e. center of volume (feet or meters)
- initial lateral dimension of the volume (feet or meters)
- initial vertical dimension of the volume (feet or meters)

AERSCREEN.INP and prompt inputs (in italics) are shown in Figure 6.

Air Quality Modeling Guidelines for Arizona Air Quality Permits

PREPARED BY:

FACILITIES EMISSIONS CONTROL SECTION

AIR QUALITY DIVISION

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

November 1, 2019

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- Length – length of roadway segment (Aspect ratio in AERMOD extended to 100:1 before warning);
- Top of plume, release height, plume width, and Sigma Z set to values listed above for volume sources;
- Emission rate in grams/second/m^2

3.3.6 Flares

Flares are typically modeled in either standard mode or event mode. In standard mode, the pilot gas, purged gas or assist gas is burning at relatively low intensity - a small flame is usually present. In event mode, the flare is burning during temporary startup, shutdown, maintenance of a process or control unit - a large flame is present, with intense heat release and buoyancy.

Flares are typically modeled similar to point sources. However, the heat release from the flare is utilized to calculate plume rise. For screening purposes, the flare options in the AERSCREEN model are acceptable. For refined modeling, it is necessary to compute equivalent emission parameters (i.e. adjusted values of temperature, stack height, and diameter) to account for the buoyancy of the plume since the flare option is not available in the AERMOD model.

Several methods for computing equivalent emission parameters appear in the literature. However, it does not seem that any one method is universally accepted. The technique to calculate the buoyancy flux for flares generally follows the technique described in the *SCREEN3 User's Guide* (U.S. EPA, 1995), *Ohio EPA's Air Dispersion Modeling Guidance* (Ohio EPA, 2003) *and Alaska Modeling Review Procedures Manual* (ADEC, 2006). In general, use the following parameters to model a "typical" flare:

- Effective stack exit velocity = 20 meters per second
- Effective stack exit temperature = 1273 Kelvin
- Adjust the stack height and inside diameter to account for the flame height and the buoyancy of the plume by using the following equations:

$$H_{equiv} = H_{actual} + 0.944(Q_c)^{0.478}$$

$$D_{equiv} = 0.1755(Q_c)^{0.5}$$

where, H_{equiv} = equivalent release height of the flare, in meters
H_{actual} =actual height of the flare stack above grade, in meters
Q_c = heat release of the flare, in MMBTU/hr
D_{equiv} = equivalent diameter of the flare, in meters

This method pertains to the "typical" flare. The method will be relatively accurate depending on flare parameters such as heat content, molecular weight of the fuel, and velocity of the uncombusted fuel/air mixture. Hence, this method may not be suitable for all conceivable situations. In this case, the Permittee may submit a properly documented method for consideration by ADEQ.

Flare emissions from different modes should be evaluated to determine the worst-case impact. For a flare "event", the emissions associated with the startup, shutdown or maintenance should be considered. Modeling emissions due to malfunction is not required unless the emissions are the result of poor maintenance, careless operation, or other preventable conditions (U.S. EPA, 2017a). Similar to a load analysis, the emission rate and the "stack parameters" that leads to highest ground level impact should be used in modeling short-term impact. For annual impact analysis, a representative combination of different operation modes should be developed to determine an average annual emission rate. However, it is not appropriate to average "stack parameters", such as exit velocity and effective diameter. The parameters that would lead to higher impact should be used in modeling.

3.3.7 Open Pit Sources

Open pit algorithms are used to model particulate emissions from open pits, such as surface copper mines and rock quarries. These algorithms simulate emissions that initially disperse in three dimensions with little or no plume rise. Open pit algorithms are available in AERMOD, which essentially adopts the ISC3 open pit algorithm. In the AERMOD model, the open pit algorithm uses an effective area for modeling pit emissions based on meteorological conditions. The algorithm then utilizes the numerical integration area source algorithm to model the impact of the emissions from the effective area sources. The following parameters are needed to model open pit sources: open pit emission rate (emission rate per unit area), average release height above the base of the pit, the initial length and width of the pit, and the volume of the pit. An optional input is "ANGLE," which specifies the orientation angle for the rectangular open pit in degrees from North, measured positive in clockwise direction (*Addendum User's Guide for the AMS/EPA Regulatory Model – AERMOD*, U.S.EPA, 2004a).

3.3.8 Pseudo Point / Non-Standard Point Source

Pseudo point sources may be used to represent vent emissions, such as those from storage tanks. Typically such releases occur at ambient temperature and with little driving force. Consequently, these releases are characterized with minimal momentum and buoyancy. The configuration of these sources must reflect these characteristics by adjusting the stack parameters.

The Texas Commission on Environmental Quality (TCEQ) provides a method to model pseudo point sources (TCEQ, 1999). If it is necessary to model emissions from fugitive sources and if a pseudo-point characterization is appropriate, then the Permittee can use the following modeling parameters:

- Stack exit velocity = 0.001 meters per second
- Stack exit diameter = 0.001 meter
- Stack exit temperature = 0 Kelvin (causes the AERMOD model to use the ambient temperature as the exit temperature)

ADEC Modeling Review Procedures Manual



October 8, 2018

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2.7.2.4 Flares

Flares can be tricky EUs to model. The operating scenario should be defined as to whether the applicant is modeling a flaring event or just the pilot, purge gas, and assist gas. A flare typically operates in a standard mode and an event mode. In the standard mode, a small flame is present, resulting from the combustion of pilot, purge, and assist gas. A flaring event is usually characterized by a large flame, due to rerouting of product during the temporary shutdown of a process or control unit.

The following definitions, provided by BP Exploration (Alaska), Inc. may be helpful in understanding flare terminology.

Pilots: Pilot gas is the component of the flared gas needed to insure continuous ignition of any gas flared from the facilities. This is analogous to the pilot found of a natural gas furnace or water heater in your home. The amount of pilot gas required is dependent on the type and number of pilots. The number of pilots is dependent on the design of the flare which takes into account flare size and configuration. The rate for each pilot is constant after it is set initially to establish a stable flame resistant to being blown out by high winds.

Purge Gas: Purge gas, sometimes called sweep gas, is the component of the flared gas used to prevent the formation of an explosive mixture through ingress of air into the piping of the flare system. The normal purge rate is calculated for no influence by wind and is dependent on the pipe diameter, type of flare tip, and the number of flare tips. Purge gas volumes are sometimes adjusted above the normal rate to overcome the effects of wind gusts. These effects including blowing air back through the tips, blowing the burning flame back inside the flare tip, and blowing the flame out.

Assist Gas: Facilities may operate two separation systems, high pressure and low pressure, for processing of incoming hydrocarbons. These systems separate gas, oil, and water streams in a series of separation vessels which operate at successively lower pressure. Consequently the flare system consists of high pressure and low pressure flares for use with the appropriate level and operating pressure. Because of less volatile hydrocarbon components and lower gas velocities in the low pressure system, combustion of this gas is less efficient and unassisted burning may result in the formation of black smoke. Therefore, in order to assure more complete combustion and minimize the generation of black smoke from flaring of low pressure gas, assist gas from the high pressure system is combined with the low pressure gas at the flare.

Flares are identified as a unique point source as they do not have a defined stack exit diameter. For modeling, it is necessary to compute equivalent emission parameters, i.e. adjusted values of stack height and "stack" diameter.

AERSCREEN has a source category for flares, and makes these adjustments internally based on the user input data. AERMOD does not have a source category for flares, and therefore, would need to have the adjustments made by the modeler outside the model prior to running AERMOD. The approach is as follows (the equations below are the more commonly used form expressing the total heat release in MMBtu/hr; they have been

changed from the form found in EPA manuals in which the total heat release is expressed in calories/second):

1. Compute the adjustment to stack height ($H_{equiv.}$) as a function of total heat release Q in MMBtu/hr:[66]

   $$H_{equiv.} = H_{actual} + 0.944 * (Q)^{0.478}$$

   where $H_{equiv.}$ and H_{actual} have units of meters;

   Note: *1) some flares are rated in calories per second and the conversion factor is 1 Btu/hr for every 0.06993 cal/s; and 2) the adjustment accounts for flame length and assumes the flame is tilted 45-degrees from the vertical.*

2. Assume a temperature of 1,273 °K;

3. Assume an exit velocity of 20 meters/sec;

4. Assume an effective stack diameter (d_{eff}) of

   $$d_{eff} = 0.1755 * (Q)^{0.5}$$

   Note: *Some stationary sources in Prudhoe Bay have horizontal flares. In these cases, an exit velocity of 0.001 m/s should be used when modeling with AERMOD (see the discussion on horizontal stacks in Section 2.7.1).*

Effective diameter is applicable for both vertical and horizontal flares since it's back-calculated from a buoyancy flux assumption. Buoyancy flux is not a function of flare orientation. Therefore, the equation can be used for both horizontal and vertical flare orientations.

This method pertains to the "typical" flare, and will be more or less accurate depending on various parameters of the flare in question, such as heat content and molecular weight of the fuel, velocity of the uncombusted fuel/air mixture, presence of steam for soot control, etc. Hence, this method may not be applicable to every situation. For example, the Central Compressor Plant in Prudhoe Bay utilizes "candle" flares for some of their flaring needs. A methodology was developed with R10 in the early 1990's to model the candle flares as area sources. Other unique situations may also exist, in which case the applicant may submit his own properly documented method for review and approval.

The calculation of PM-10 and PM-2.5 emissions from flares is not straight forward. Section 13.5 of AP-42 presents guidance on calculating emissions from industrial flares. Table 13.5-1 of that document presents an emission factor for soot, but not PM-10. Furthermore, the soot concentration is expressed in units of micrograms per liter (µg/l) of

[66] The equation for adjusting the flare stack height was originally published by M. Beychok in *Fundamentals of Stack Gas Dispersion* (1979).

exhaust gas, as a function of the amount of smoke in the flare (e.g., lightly smoking, heavily smoking, etc.).

As an alternate method, ADEC has allowed applicants to conservatively estimate PM-10 emissions from flares as a function of the uncombusted fuel mass. If one knows the mass flow of the fuel and the combustion efficiency of the flare (obtained from the manufacturer), the residual amount of unburned fuel mass emission rate is assumed to be the mass emission rate of PM-10.

Texas Commission On Environmental Quality

INTEROFFICE MEMORANDUM

To: APD Technical Staff Date: September 10, 2004

From: Dom Ruggeri, P.E., Team Leader
Air Dispersion Modeling Team

Subject: Technical Basis for Flare Parameters

This memo provides the technical basis for default and derived flare stack parameters used in screening and refined modeling demonstrations. Please refer questions to Keith Zimmermann or Karianne Kurth.

Background.

Because of the design and operation of a flare, it is difficult to obtain the necessary input parameters for atmospheric dispersion modeling. A large open flame radiates a significant portion of the heat of combustion associated with a flaring gas stream. The buoyancy of the combustion gases will be related to the remaining sensible heat of the flare gases. The modeling strategy developed in the late 1970's focused on two methods to determine the buoyancy flux component, F, of plume rise. One method uses a traditional point source type characterization with user-provided stack diameter, exit temperature, diameter, and exit gas velocity to determine the value of F. In this method, the heat release of the flared gas is used to derive an equivalent stack diameter while the temperature and velocity are fixed. This method must be used with the Environmental Protection Agency (EPA) Industrial Source Complex (ISC3) model since there are no specific input options for a flare. The second method was developed for the flare source type characterization. In this method, the user provides the heat release from the flare and the model internally uses a fixed temperature and velocity to calculate the effective diameter. Either method can be used with the SCREEN3 program.

Method 1. Derivation of Equivalent Stack Parameter.

In this method, developed by the Texas Air Control Board (TACB) and the EPA in the late 1970's and early 1980's, stack parameters are derived such that a buoyancy flux parameter calculated by the model will be equivalent to the actual buoyancy flux of the flare's combustion gases. The buoyancy flux parameter equation, used by the ISC3 and SCREEN3 models to calculate plume rise (Δh), requires four variables: stack temperature (T), ambient temperature (T_a), stack gas velocity (v), and stack diameter (d) (Equation 1). Another form of the buoyancy flux equation that is not programmed into the models requires only the heat (assumed to be all sensible) of the stack gases to calculate buoyancy flux (Equation 2). If the heat of the stack gases is known and if three of the four variables are fixed, then the remaining variable in Equation 1 can be found. In Method 1, the stack temperature, ambient temperature, and stack exit velocity are fixed. Therefore, the equivalent stack diameter for a flare can be found by taking the two buoyancy flux equations and solving for diameter, d (Briggs, 1969):

$$F = (gvd^2 / 4) \ [(T - T_a) / T] \qquad (1)$$

$$F = (3.7 \times 10^{-5}) \ q_h \qquad (2)$$

Where:

F = buoyancy flux (m^4/s^3)
g = acceleration due to gravity (m/s^2)
v = stack gas exit velocity (m/s)
d = stack diameter (m)
T = stack temperature (K)
T_a = ambient temperature (K)
q_n = net heat release (sensible heat) (cal/s)

In order to determine an equivalent stack diameter, set the two equations equally to each other. To solve for diameter, hold all other variables in the first equation constant.

$$(3.7 \times 10^{-5})\ q_n = (gvd^2 / 4)\ [(T - T_a) / T] \qquad (3)$$

A default value of T = 1273 K is a reasonable value to use for the exit temperature of the flare. Based on a typical range of ambient temperatures in Texas, T_a could vary between approximately 0 ˚C and 40 ˚C (273 K and 313 K) (TACB, 1979).

In order to avoid stack-tip downwash, use $v \geq 1.5u$ (Briggs, 1969), where u = wind speed (m/s). Since Texas rarely has continuous wind speeds greater than 30 miles per hour (mph), set u = 30 mph. Solve to get v = 45 mph, or 20.12 m/s. Set v = 20 m/s as a reasonable substitute variable for the exit velocity.

The TCEQ method to determine an equivalent stack diameter uses the following default values: v = 20 m/s, T = 1273 K, and let T_a = 308 K (35˚C). The ambient temperature is chosen to provide a reasonable, conservative estimate of plume rise. When holding all other variables in Equation 1 constant, the difference between buoyancy flux component values calculated for T_a = 0 ˚C and T_a = 40 ˚C is 4 percent (TACB, 1979). The value for q_n is determined from the gross heat release (total heat of combustion of gases going to the flare) using the following formula (Tan, 1967):

$$q_n = q\ (\ 1 - 0.048\ \sqrt{\ }(MW)) \qquad (4)$$

Where:

q_n = net heat release (sensible heat) (cal/s)
q = gross heat release (cal/s)
MW = mean molecular weight of stream going to the flare (g/gmole).

Now, solving Equation 3:

$$(3.7 \times 10^{-5})\ q_n = [(9.8)(20)d^2 / 4]\ [(1273 - 308) / 1273] \qquad (5)$$

The result is:

$$q_n = (1003906)\ d^2 \qquad (6)$$

Solve for d and get:

$$d = 10^{-3}\ (q_n)^{½} \qquad (7)$$

The default values for velocity, temperature, and diameter are used by the model to calculate the amount of plume rise (Δh) above the flare's flame tip. The effective plume height (H_e), that is, the height of the centerline of the plume above the ground, is the flare height plus the calculated amount of plume rise (Δh) using the velocity, temperature, and diameter defined in this method. In the TCEQ method, no additional plume height is considered for the length of the flame.

$$H_e = H_s + \Delta h \qquad (8)$$

Where:

H_s = physical height of the flare (m)
Δh = plume rise above the top of the flare (m)

In summary, the relationship between the stack diameter and the heat release is based on reasonably assumed parameters for the conditions of a flare. It may be appropriate to deviate from the conservative TCEQ parameters for real-world, episodic events. *If a deviation is made from the parameters assumed in the TCEQ method, then one must derive a new relationship between stack diameter and heat release.* For example, using Equation 7 to determine diameter while using a velocity other than 20 m/s would result in errors in the modeling results. This method is referenced in the User's Guide to the Texas Climatological Model (Aug. 1980), App. C and the User's Guide to the Texas Episodic Model (Oct. 1979), App. E.

Method 2: Direct Input of Flare Parameters to SCREEN3.

The EPA SCREEN3 version contains an option for the direct input of flare parameters. The screening model requires only the height of the flare (m), the emission rate (g/s), and the total (gross) heat release of the flare. The program code within the SCREEN3 program assumes stack parameters as defined below in the method developed by EPA.

The EPA method used in SCREEN3 to determine an equivalent stack diameter uses net heat release determined by the following equation:

$$q_n = (0.45)\ \ q \qquad (9)$$

Where:

q = gross heat release from the flare (cal/s) input by the user
q_n = net heat release from the flare (cal/s)

Equation 9 is documented in the SCREEN3 User's guide. Experimental data provided support for EPA's assumption that 55 percent of the gross heat released from the flare is radiative and only the remaining 45 percent of the gross heat released is sensible and remains available for plume rise (Leahey, 1984).

The following default values are internally used in the SCREEN3 program: v = 20 m/s, T = 1273 K, and T_a = 293 K, or 20 °C (SCREEN3 User's Guide). Equation 3 can be solved using these values to obtain Equation 10 below. Equation 10 is similar to Equation 7, TCEQ's method for determining stack diameter.

$$d = 9.88 \times 10^{-4} (q_n)^{½} \qquad (10)$$

Where:

q_n = net heat release (cal/s) as defined in Equation 9

The EPA SCREEN3 model uses these values for velocity, temperature, and diameter to calculate the amount of plume rise (Δh) above the flare's flame tip.

The physical release height of the flare is adjusted in the EPA method by adding the calculated length of the flame to the height of the top of the flare structure, using the formula:

$$H_a = H_s + [(4.56 \times 10^{-3}) (q^{0.478})] \qquad (11)$$

Where:

H_a = Adjusted flare height (m)
H_s = Physical flare height (m)
q = gross heat release (cal/s) input by the user

This formula is from an American Petroleum Institute (API) publication providing a plot of flame length vs. heat release and is summarized in Fundamentals of Stack Gas Dispersion (Beychok, 1979). The above equation is then derived from the API publication's simple assumption that the flare tilts at 45 degrees. The flame length is added to the physical flare height to obtain the adjusted flare height. This equation also is referenced in the SCREEN3 FORTRAN source code within the file named SCREEN3A.FOR.

The effective plume height (H_e), that is, the centerline of the plume above the ground, is the adjusted flare height summed with the calculated amount of plume rise (Δh) using the velocity, temperature, and diameter defined in this method.

$$H_e = H_a + \Delta h \qquad (12)$$

The effective plume height (H_e) is the height the model uses for the centerline of the Gaussian distribution of concentration. A greater effective stack height will result in lower ground level concentrations. Adding a flame length to the height of the flare results in a greater effective stack height which will produce a less conservative ground level concentration.

Summary

The two methods for modeling flares are comparable. In the original TCEQ method development, the net heat released from the flare is calculated based on the mean molecular weight of the stream going to the flare. This approach tends to result in approximately 50-75 percent of the gross heat released from the flare contributing to plume rise. No addition to the plume height is considered for the length of the flame. In addition, the TCEQ method assumes a conservative ambient temperature of 308 degrees K.

In the EPA method, the radiant heat from the flare is always assumed to be 55 percent of the gross heat release, regardless of what gas stream is going to the flare. This approach leaves only 45 percent of the gross heat release of the flare available for plume rise. This would result in a reduced amount of plume rise. This is somewhat offset by the EPA assumption that the release height of the flare should be adjusted by adding a value representing the length of a flame tilted at 45 degrees. In addition, the EPA method assumes an ambient temperature of 293 K.

The ISC3 model does not have an option for the direct input of the gross heat release from a flare. A set of pseudo-stack parameters must be calculated in order to use the ISC3 model to estimate downwind concentrations from a flare. For consistency, we prefer that the TCEQ method be used to determine stack parameters for screening modeling as well. However, it may be appropriate to deviate from the conservative TCEQ parameters in order to obtain representative concentrations for real-world, episodic events.

References

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MATTHEW H. MEAD
GOVERNOR

THE STATE OF WYOMING

STATE CAPITOL
CHEYENNE, WY 82002

Office of the Governor

October 27, 2015

Shaun McGrath
Administrator Region 8
U.S. Environmental Protection Agency
1595 Wynkoop Street
Denver, CO 80202-1129

Re: Wyoming Department of Environmental Quality Designation Recommendation for Carbon County, Wyoming

Dear Administrator McGrath,

This letter responds to Janet McCabe's (U. S. Environmental Protection Agency (EPA) Acting Assistant Administrator) March 20, 2015 letter to Director Todd Parfitt (Wyoming Department of Environmental Quality (DEQ)) regarding attainment designations for the 2010 1-hour sulfur dioxide (SO_2) National Ambient Air Quality Standard. This recommendation meets the extended due date of November 2, 2015.

The March 2, 2015 court order directs attainment in three rounds: round one completion date July 2, 2016; round two completion date December 31, 2017; and round three completion date December 31, 2020. Sinclair Wyoming Refining Company's (SWRC) SO_2 air quality monitor recorded a violation of the 2010 SO_2 NAAQS between calendar years 2012 and 2014 in Carbon County. This resulted in Carbon County's inclusion as an area subject to round one designation.

The DEQ's Air Quality Division (AQD) has conducted extensive evaluations of the SWRC SO_2 air quality monitor (AQS ID number 56-007-0852) and surrounding areas. These evaluations are the basis of this designation recommendation. The DEQ-AQD also received modeling from SWRC to assist with the decision. SWRC's modeling was not conducted in accordance with the SO_2 Modeling Technical Assistance Document and was not considered by the DEQ-AQD (supporting document attached).

The DEQ-AQD considered the information in the technical support document and determined available information was inconclusive (due to location of the SWRC SO_2 air quality monitor and the dispersion modeling evaluation). The DEQ-AQD recommends that Carbon County remain unclassified at this time.

PHONE: (307) 777-7434

FAX: (307) 632-3909

The DEQ-AQD will work with the EPA (in accordance with 40 CFR 51.1200) to identify SWRC as a stationary source subject to further air quality characterization (SO_2 Data Requirements Rule). The DEQ-AQD has decided to include SWRC in round three of designations – requiring SWRC to conduct additional ambient SO_2 monitoring. This additional monitoring data will be used for the final designation due December 31, 2020.

The DEQ-AQD is pursuing an enforcement action for violation of permit conditions related to ambient air monitors against SWRC. The proposed order will require Sinclair to modify its permitted ambient boundary and to install a monitor in the Town of Sinclair. The DEQ-AQD will coordinate with the EPA and SWRC on a monitoring network in anticipation of the December 31, 2020 designation.

I look forward to working with the EPA finalize an attainment designation for Carbon County, Wyoming.

Sincerely,

Matthew H. Mead
Governor

MHM:ts

Encl.

1. Wyoming Department of Environmental Quality, Air Quality Division: Final Air Dispersion Modeling Report in Support of the 2010 1-Hour Sulfur Dioxide NAAQS Designation Recommendation, October 20, 2015
2. Technical Support Document for Carbon County, Wyoming 1-Hour SO2 Designation

cc: Todd Parfitt, Director, Wyoming Department of Environmental Quality



Wyoming Department of Environmental Quality
Air Quality Division

Final Air Dispersion Modeling Report in Support of the 2010 1-Hour Sulfur Dioxide NAAQS Designation Recommendation

SLR Ref: 118.01467.00001

October 20, 2015

Final Air Dispersion Modeling Report in Support of the 2010 1-Hour Sulfur Dioxide NAAQS Designation Recommendation

Prepared for:

Wyoming Department of Environmental Quality - Air Quality Division
200 West 17th Street
Cheyenne, WY 82002

This document has been prepared by SLR International Corp. The material and data in this report were prepared under the supervision and direction of the undersigned.

Prepared By:
Patrick McKean, CCM, Senior Scientist

Reviewed by:
Jason Reed, CCM, Senior Scientist

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For times when RCFA emissions data were available for a given TGTU, the calculated RCFA total lb/hr SO_2 emission rate was used in place of that TGTU's CEMS data for the corresponding hours, regardless of the codes that were present in the CEMS data.

2.5.1. CEMS/RCFA Report Emission Substitutions for Flares

The following information in each flare RCFA report was reviewed for purposes of preparing hourly emission rates that were used as replacements for the CEMS data:

- Start/end times for each event;
- The average pound per hour (lb/hr) SO_2 emission rate during each event;
- The total SO_2 lb/event emissions; and
- The average flare gas flow rate during each event.

For times when RCFA emissions data were available for a given flare, the reported lb/hr SO_2 emission rate was used in place of that flare's CEMS data for the corresponding hours. If a flaring event lasted less than one hour, then the reported lb/event value was used for the hour in which the emissions occurred.

This procedure was followed for the two candlestick flares (North and South flares). During one of the flaring events (February 4 through February 13, 2014), there were three days (February 6 through February 8) when refinery gases were assumed to be released from the Emergency Ground Flare, based on the event description in the RCFA report. This flare does not have a CEMS and is only used for emergency purposes; therefore, the RCFA emissions from the ground flare were used during February 6 through February 8, with zero emissions occurring for all other days in the 2012-2014 period.

2.5.1.4 AERMOD Hourly Emission File Development

The AERMOD hourly emission files were developed using the available CEMS and RCFA report data, along with emission rates and stack parameters from the modeling files associated with SWRC's 2014 minor source permit action MD-15648. Hourly emission files are used in AERMOD for varying emission rates, stack temperatures, and velocities. Other stack information such as the Universal Transverse Mercator (UTM) locations, base elevations, and diameters are "fixed" in the model and were obtained from the previous modeling files, with updates where appropriate in coordination with the WDEQ-AQD.

The hourly emission files were developed by adding the following information to SWRC's CEMS spreadsheets.

TGTUs and FCCU:

- The required AERMOD keywords, model times (hours converted to hour-ending to be consistent with the meteorological data), and the modeled stack ID.

- If RCFA report information was available, the total lb/hr SO_2 emission rates from the RCFA report was input to the hourly emission file, in units of grams per second (g/s). In these cases, the CEMS emission rates were not used.
- If the CEMS data were coded as "DOWN", then 0 g/s was input to the hourly emission file. If the CEMS data coded as "ND", the permitted emission rate was input to the hourly emission file, along with the previous permitted stack parameters.
- For hours with valid CEMS emissions data that were not substituted with RCFA data, the CEMS emission rates and exhaust temperatures were input to the hourly emission file.
- For hours with valid CEMS emissions and flow rates, SLR used the CEMS actual flow rate (acf/hr) and previous modeled stack diameter to calculate the stack velocity in the hourly emission file. If CEMS emissions or flow rate was coded as "ND", then the previous permitted stack velocity was input to the hourly emission file.

North and South Flares:

- The required AERMOD keywords, model times (hours converted to hour-ending to be consistent with the meteorological data), and the modeled stack ID.
- If RCFA report information was available, the total lb/hr SO_2 emission rates from the RCFA report was input to the hourly emission file, in units of g/s. In these cases, the CEMS emission rates were not used.
- Since the effective release height and diameter cannot be varied in the AERMOD hourly emission files, these parameters were calculated following EPA's screening procedures (EPA 1995) using each flare's physical stack height and average flare gas heat content obtained from the 2012, 2013, and 2014 annual emission reports. The gas heat contents for each year were applied to the flare gas flow rates during events for each year. The calculated 3-year average effective release heights and diameters were used in the AERMOD input file for the stack height and diameter.
- The flare exhaust temperature and velocity were set to the EPA (1995) default values of 1,273 Kelvin (K) and 20 meters per second (m/s), respectively.

The Emergency Ground Flare was characterized in AERMOD as a volume source, in consultation with the WDEQ-AQD. Since the Emergency Ground Flare only had emissions from February 6 through February 8, 2014, the AERMOD hourly emission file contained RCFA report emissions for this period with zero emissions occurring for all other days in the 2012-2014 period.

2.5.2 OFF-SITE SOURCES

Off-site sources were obtained from SWRC's 2014 minor source permit action MD-15648. The following off-site sources were included in the AERMOD model runs:

- Rostad Mortuary Crematory; and
- Wyoming Department of Corrections

APPENDIX B. ADDITIONAL NMED GUIDANCE

Adam Erenstein

From: Mustafa, Sufi A., ENV <sufi.mustafa@env.nm.gov>
Sent: Tuesday, July 15, 2025 12:06 PM
To: Adam Erenstein
Subject: RE: [EXTERNAL] RE: Monument Gas Plant

Adam
You may remove short term/intermittent SSM emission from other surrounding sources for 1- hour SO2 cumulative model.

Sufi A. Mustafa, Ph.D.
Manager Air Dispersion Modeling and Emission Inventory Section
New Mexico Environment Department's Air Quality Bureau
Office: (505) 629 6186
sufi.mustafa@state.nm.us
525 Camino de los Marquez
Suite 1
Santa Fe, New Mexico, 87505
https://www.env.nm.gov/air-quality/

"Innovation, Science, Collaboration, Compliance"

From: Adam Erenstein <AErenstein@trinityconsultants.com>
Sent: Tuesday, July 15, 2025 11:56 AM
To: Mustafa, Sufi A., ENV <sufi.mustafa@env.nm.gov>
Subject: RE: [EXTERNAL] RE: Monument Gas Plant

Sufi,
Thank you for getting back to me regarding Monument and for the below information regarding how to address SSM. I wanted to confirm that it would it be safe to appropriate to remove other sources of SSM from the surrounding sources too since they would also be short term/intermittent ?

Regards,

Adam Erenstein
Principal Consultant, Manager of Consulting Services

P 505.266.6611 M 480.760.3860
Email: aerenstein@trinityconsultants.com
9400 Holly Avenue NE, Building 3, Suite B, Albuquerque, NM 87122

Trinity Consultants

Connect with us: LinkedIn / YouTube / trinityconsultants.com

View our capabilities in the Environmental Consulting, Built Environment, Life Sciences, and Water & Ecology markets.

Book time to meet with me

From: Mustafa, Sufi A., ENV <sufi.mustafa@env.nm.gov>
Sent: Tuesday, July 15, 2025 11:43 AM
To: Adam Erenstein <AErenstein@trinityconsultants.com>
Subject: RE: [EXTERNAL] RE: Monument Gas Plant

Adam
You do not need to model the SSM emissions from Monument Gas Plant as surrounding source emission for your subject facility.
The SSM emissions at a facility are short term/intermittent and adding them in a subject facility's surrounding source list will make 1-hr SO2 modeled cumulative concentrations very conservative.
Please let me know if you want to discuss it any further.

Sufi A. Mustafa, Ph.D.
Manager Air Dispersion Modeling and Emission Inventory Section
New Mexico Environment Department's Air Quality Bureau
Office: (505) 629 6186
sufi.mustafa@state.nm.us
525 Camino de los Marquez
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Santa Fe, New Mexico, 87505
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"Innovation, Science, Collaboration, Compliance"

From: Adam Erenstein <AErenstein@trinityconsultants.com>
Sent: Monday, July 14, 2025 1:30 PM
To: Mustafa, Sufi A., ENV <sufi.mustafa@env.nm.gov>
Subject: [EXTERNAL] RE: Monument Gas Plant

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Sufi,
Hope you had a good weekend. I wanted to follow up with you regarding our discussion on Monument GP to see if you had a chance to look into this?

Regards,

Adam Erenstein
Principal Consultant, Manager of Consulting Services

P 505.266.6611 M 480.760.3860
Email: aerenstein@trinityconsultants.com

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.

There is no compliance test history as this is an initial NSR permit. The facility is currently permitted under a GCP O&G permit #10342M1, but the facility has not been fully constructed and is not in operations.

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 information needed for this application.

Section 22: Certification

Company Name: Lea Midstream, LLC

I, James Hegar, 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 19th day of August, 2025, upon my oath or affirmation, before a notary of the State of Texas.

*Signature 8/19/25
Date

James Hegar
Printed Name

COO & EVP
Title

Scribed and sworn before me on this 19th day of August, 2025.

My authorization as a notary of the State of Texas expires on the 2nd day of April, 2029.

Sharla Korkmas 8.19.2025
Notary's Signature Date

Sharla Korkmas
Notary's Printed Name

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