



September 2, 2021

UPS #: 1Z5V32102916225089

Attn: Ms. Kirby Olson
Major Source Program Manager
New Mexico Environment Department
Air Quality Bureau
525 Camino de los Marquez, Suite 1
Santa Fe, NM 87505

Re: **Title V Permit Application**
Longhorn Compressor Station NSR Permit # 8349-M1
Tiger Compressor Station NSR Permit # 7623-M1
Spartan Compressor Station NSR Permit # 7681-M1
Bulldog Compressor Station NSR Permit # 8153
XTO Energy Inc.

Dear Ms. Olson,

XTO Energy Inc. is submitting the Title V Permit applications for the Bulldog, Longhorn, Tiger, & Spartan Compressor Station. The electronic files will be provided via email or secure file transfer.

If you have any questions concerning this application, please call me at 832-624-4426 or at Raymond.Tole@ExxonMobil.com.

Sincerely,

A handwritten signature in blue ink, appearing to read 'R. P. Tole Jr.' with a stylized flourish at the end.

Raymond P. Tole Jr. P.E.
Environmental Engineer
XTO Energy Inc.

**LONGHORN COMPRESSOR STATION
EDDY COUNTY, NEW MEXICO
TITLE V PERMIT APPLICATION**



**PREPARED FOR:
RAYMOND TOLE
ENVIRONMENTAL ENGINEER
XTO ENERGY INC.
8/19/2021**

LONGHORN COMPRESSOR STATION

TITLE V PERMIT APPLICATION

Table of Attachments

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Section # 1
UA1 Form

Mail Application To: New Mexico Environment Department Air Quality Bureau Permits Section 525 Camino de los Marquez, Suite 1 Santa Fe, New Mexico, 87505 Phone: (505) 476-4300 Fax: (505) 476-4375 www.env.nm.gov/aq		For Department use only: AIRS No.:
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Universal Air Quality Permit Application

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

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

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.: [] in the amount of []
- ☒ I acknowledge the required submittal format for the hard copy application is printed double sided 'head-to-toe', 2-hole punched (except the Sect. 2 landscape tables is printed 'head-to-head'), numbered tab separators. Incl. a copy of the check on a separate page.
- ☒ I acknowledge there is an annual fee for permits in addition to the permit review fee: www.env.nm.gov/air-quality/permit-fees-2/.
- ☐ This facility qualifies for the small business fee reduction per 20.2.75.11.C. NMAC. The full \$500.00 filing fee is included with this application and I understand the fee reduction will be calculated in the balance due invoice. The Small Business Certification Form has been previously submitted or is included with this application. (Small Business Environmental Assistance Program Information: www.env.nm.gov/air-quality/small-biz-eap-2/.)

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

Section 1 – Facility Information

Section 1-A: Company Information

		AI # if known (see 1 st 3 to 5 #s of permit IDEA ID No.): 39012	Updating Permit/NOI #:
1	Facility Name: Longhorn Compressor Station	Plant primary SIC Code (4 digits): 1311	
		Plant NAIC code (6 digits): 2111130	
a	Facility Street Address (If no facility street address, provide directions from a prominent landmark): See Section 1-D.4.		
2	Plant Operator Company Name: XTO Energy Inc.	Phone/Fax: (832) 624-4426	
a	Plant Operator Address: 22777 Springwoods Village Parkway; Spring, TX 77389		

b	Plant Operator's New Mexico Corporate ID or Tax ID: 1522747	
3	Plant Owner(s) name(s): XTO Energy Inc.	Phone/Fax: (832) 624-4426
a	Plant Owner(s) Mailing Address(s): 22777 Springwoods Village Parkway; Spring, TX 77389	
4	Bill To (Company): XTO Energy Inc.	Phone/Fax: (832) 624-4426
A	Mailing Address: 22777 Springwoods Village Parkway; Spring, TX 77389	E-mail: raymond.tole@exxonmobil.com
5	☒ Preparer: Brett Zogas ☒ Consultant: DiSorbo Consulting, LLC	Phone/Fax: (713) 955-1218
a	Mailing Address: 1001 Louisiana St., Ste 3250, Houston, TX 77002	E-mail: bzogas@disorboconsult.com
6	Plant Operator Contact: Raymond Tole	Phone/Fax: (832) 624-4426
a	Address: 22777 Springwoods Village Parkway; Spring, TX 77389	E-mail: raymond.tole@exxonmobil.com
7	Air Permit Contact: Raymond Tole	Title: Environmental Engineer
a	E-mail: raymond.tole@exxonmobil.com	Phone/Fax: (832) 624-4426
b	Mailing Address: 22777 Springwoods Village Parkway; Spring, TX 77389	
c	The designated Air permit Contact will receive all official correspondence (i.e. letters, permits) from the Air Quality Bureau.	

Section 1-B: Current Facility Status

1.a	Has this facility already been constructed? ☒ Yes ☐ No	1.b If yes to question 1.a, is it currently operating in New Mexico? ☒ Yes ☐ No
2	If yes to question 1.a, was the existing facility subject to a Notice of Intent (NOI) (20.2.73 NMAC) before submittal of this application? ☐ Yes ☒ No	If yes to question 1.a, was the existing facility subject to a construction permit (20.2.72 NMAC) before submittal of this application? ☒ Yes ☐ No
3	Is the facility currently shut down? ☐ Yes ☒ No	If yes, give month and year of shut down (MM/YY):
4	Was this facility constructed before 8/31/1972 and continuously operated since 1972? ☐ Yes ☒ No	
5	If Yes to question 3, has this facility been modified (see 20.2.72.7.P NMAC) or the capacity increased since 8/31/1972? ☐ Yes ☐ No ☒ N/A	
6	Does this facility have a Title V operating permit (20.2.70 NMAC)? ☐ Yes ☒ No	If yes, the permit No. is: P-
7	Has this facility been issued a No Permit Required (NPR)? ☐ Yes ☒ No	If yes, the NPR No. is:
8	Has this facility been issued a Notice of Intent (NOI)? ☐ Yes ☒ No	If yes, the NOI No. is:
9	Does this facility have a construction permit (20.2.72/20.2.74 NMAC)? ☒ Yes ☐ No	If yes, the permit No. is: 8349
10	Is this facility registered under a General permit (GCP-1, GCP-2, etc.)? ☐ Yes ☒ No	If yes, the register No. is:

Section 1-C: Facility Input Capacity & Production Rate

1	What is the facility's maximum input capacity, specify units (reference here and list capacities in Section 20, if more room is required)			
a	Current	Hourly: 9.17 mmscf	Daily: 220 mmscfd	Annually: 80.3 bscf
b	Proposed	Hourly: 9.17 mmscf	Daily: 220 mmscfd	Annually: 80.3 bscf
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: 9.17 mmscf	Daily: 220 mmscfd	Annually: 80.3 bscf

b	Proposed	Hourly: 9.17 mmcsf	Daily: 220 mmcsfd	Annually: 80.3 bscf
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Section 1-D: Facility Location Information

1	Section: 23	Range: 30E	Township: 22S	County: Eddy	Elevation (ft): 3318
2	UTM Zone: ☐ 12 or ☒ 13			Datum: ☐ NAD 27 ☐ NAD 83 ☒ WGS 84	
a	UTM E (in meters, to nearest 10 meters): 607520			UTM N (in meters, to nearest 10 meters): 3582220	
b	AND Latitude (deg., min., sec.): 32° 22' 18"			Longitude (deg., min., sec.): -103° 51' 26"	
3	Name and zip code of nearest New Mexico town: Loving - 88256				
4	Detailed Driving Instructions from nearest NM town (attach a road map if necessary): From the corner of N. 4 th and GR Howard Rd., drive E on GR Howard Rd. for 1.6 mi. to L on Hwy 387. Drive 1.5 mi. to R on NM 31. Drive 4.5 to R on NM 128E. Drive 8.7 mi. to L on Cimarron Rd. Drive 2.8 mi. to R at tee. Drive 0.2 mi. to L into site.				
5	The facility is 15 (distance) miles NE (direction) of Loving (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, Lea				
8	20.2.72 NMAC applications only : Will the property on which the facility is proposed to be constructed or operated be closer than 50 km (31 miles) to other states, Bernalillo County, or a Class I area (see www.env.nm.gov/aqb/modeling/classIareas.html)? ☐ Yes ☐ No (20.2.72.206.A.7 NMAC) If yes, list all with corresponding distances in kilometers: N/A – Not a 20.2.72 NMAC application.				
9	Name nearest Class I area: Carlsbad Caverns				
10	Shortest distance (in km) from facility boundary to the boundary of the nearest Class I area (to the nearest 10 meters): 52.34				
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: < 2 miles				
12	Method(s) used to delineate the Restricted Area: None "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:		☐ AM ☐ PM	End: ☐ AM ☐ PM
3	Month and year of anticipated start of construction: Already started (July 2020).			
4	Month and year of anticipated construction completion: TBD. See Table 2-A for construction dates for completed sources.			
5	Month and year of anticipated startup of new or modified facility: Partially started (July 2020). See Table 2-A for more details.			
6	Will this facility operate at this site for more than one year? ☒ Yes ☐ No			

Section 1-F: Other Facility Information

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

Section 1-G: Streamline Application

(This section applies to 20.2.72.300 NMAC Streamline applications only)

1	☐ I have filled out Section 18, "Addendum for Streamline Applications." ☒ N/A (This is not a Streamline application.)
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Section 1-H: Current Title V Information - Required for all applications from TV Sources

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

1	Responsible Official (R.O.) (20.2.70.300.D.2 NMAC): Richard Cannon		Phone: (575) 988-7138
a	R.O. Title: Production Manager – NM Delaware Basin	R.O. e-mail: rick.e.cannon@exxonmobil.com	
b	R. O. Address: 3104 East Green Street; Carsbad, NM 8820		
2	Alternate Responsible Official (20.2.70.300.D.2 NMAC):		Phone:
a	A. R.O. Title:	A. R.O. e-mail:	
b	A. R. O. Address:		
3	Company's Corporate or Partnership Relationship to any other Air Quality Permittee (List the names of any companies that have operating (20.2.70 NMAC) permits and with whom the applicant for this permit has a corporate or partnership relationship): None		
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.): XTO Energy Inc.		
a	Address of Parent Company: 22777 Springwood Village Parkway; Spring, TX 77389		
5	Names of Subsidiary Companies ("Subsidiary Companies" means organizations, branches, divisions or subsidiaries, which are owned, wholly or in part, by the company to be permitted.): None		
6	Telephone numbers & names of the owners' agents and site contacts familiar with plant operations: N/A		

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: None
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Section 1-I – Submittal Requirements

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

Hard Copy Submittal Requirements:

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

Electronic files sent by (check one):

☐ CD/DVD attached to paper application

☐ secure electronic transfer. Air Permit Contact Name _____

Email _____

Phone number _____

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

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

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

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

- 1) All required electronic documents shall be submitted as 2 separate CDs or submitted through the AQB secure file transfer service. Submit a single PDF document of the entire application as submitted and the individual documents comprising the application.
- 2) The documents should also be submitted in Microsoft Office compatible file format (Word, Excel, etc.) allowing us to access the text and formulas in the documents (copy & paste). Any documents that cannot be submitted in a Microsoft Office compatible

format shall be saved as a PDF file from within the electronic document that created the file. If you are unable to provide Microsoft office compatible electronic files or internally generated PDF files of files (items that were not created electronically: i.e. brochures, maps, graphics, etc.), submit these items in hard copy format. We must be able to review the formulas and inputs that calculated the emissions.

- 3) It is preferred that this application form be submitted as 4 electronic files (3 MSWord docs: Universal Application section 1 [UA1], Universal Application section 3-19 [UA3], and Universal Application 4, the modeling report [UA4]) and 1 Excel file of the tables (Universal Application section 2 [UA2]). Please include as many of the 3-19 Sections as practical in a single MS Word electronic document. Create separate electronic file(s) if a single file becomes too large or if portions must be saved in a file format other than MS Word.
- 4) The **electronic file names** shall be a maximum of 25 characters long (including spaces, if any). The format of the electronic Universal Application shall be in the format: "A-3423-FacilityName". The "A" distinguishes the file as an application submittal, as opposed to other documents the Department itself puts into the database. Thus, all electronic application submittals should begin with "A-". Modifications to existing facilities should use the **core permit number** (i.e. '3423') the Department assigned to the facility as the next 4 digits. Use 'XXXX' for new facility applications. The format of any separate electronic submittals (additional submittals such as non-Word attachments, re-submittals, application updates) and Section document shall be in the format: "A-3423-9-description", where "9" stands for the **section #** (in this case Section 9-Public Notice). Please refrain, as much as possible, from submitting any scanned documents as this file format is extremely large, which uses up too much storage capacity in our database. Please take the time to fill out the **header information** throughout all submittals as this will identify any loose pages, including the Application Date (date submitted) & Revision number (0 for original, 1, 2, etc.; which will help keep track of subsequent partial update(s) to the original submittal. Do not use special symbols (#, @, etc.) in file names. The footer information should not be modified by the applicant.

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Section # 2
UA2 Form

Table 2-A: Regulated Emission Sources

Unit and stack numbering must correspond throughout the application package. Equipment exemptions under 2.72.202 NMAC do not apply to 20.2.73 NMAC. Identify process equipment that is used to reroute emissions back into the process or sales pipeline in Table 2-A, such as a VRU, VRT, ULPS, Flashing Vessel, or Blowcase.

Unit Number ¹	Source Description	Make	Model #	Serial #	Manufacturer's Rated Capacity ³ (Specify Units)	Requested Permitted Capacity ³ (Specify Units)	Date of Manufacture ²	Controlled by Unit #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB) ⁴	Replacing Unit No.
							Date of Construction/Reconstruction ²	Emissions vented to Stack #				
LPS	Low Pressure Separator	Kiewit EG	N/A	KOS-00005	N/A	N/A	2019	FL1	31000132	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							2019	FL1				
SKTK1	Water Skim Tank (Primary)	STEELMATION	N/A	P-000-469-918-000003	1000 bbl	1000 bbl	2019	FL1	40400311	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							2019	FL1				
SKTK2	Water Skim Tank (Backup)	Unknown	N/A	TBD	1000 bbl	1000 bbl	TBD	FL1	40400311	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							TBD	FL1				
OT1	Condensate Tank	STEELMATION	N/A	P-000-463-144-0000018	500 bbl	500 bbl	2019	FL1	40400311	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							2019	FL1				
OT2	Condensate Tank	STEELMATION	N/A	P-000-463-144-0000014	500 bbl	500 bbl	2019	FL1	40400311	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							2019	FL1				
OT3	Condensate Tank	STEELMATION	N/A	P-000-463-144-0000015	500 bbl	500 bbl	2019	FL1	40400311	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							2019	FL1				
OT4	Condensate Tank	STEELMATION	N/A	P-000-463-144-0000016	500 bbl	500 bbl	2019	FL1	40400315	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							2019	FL1				
WT1	Produced Water Tank	STEELMATION	N/A	P-000-463-144-0000013	500 bbl	500 bbl	2019	FL1	40400315	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							2019	FL1				
WT2	Produced Water Tank	STEELMATION	N/A	P-000-463-144-0000017	500 bbl	500 bbl	2019	FL1	40400315	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							2019	FL1				
FL1	Flare 1	Tornado	GUYED DUAL AIR ASSIST	14785/17154	80 mmcsfd	80 mmcsfd	2019	N/A	31000205	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							2019	FL1				
FL2	Flare 2	TBD	TBD	TBD	80 mmcsfd	80 mmcsfd	TBD	N/A	31000205	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							TBD	FL2				
FL3	Flare 3	TBD	TBD	TBD	80 mmcsfd	80 mmcsfd	TBD	N/A	31000205	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							TBD	FL3				
VC1	Vapor Combustor	CIMARRON ENERGY	N/A	5604792	N/A	N/A	2019	N/A	31000205	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							2019	VC1				

Unit Number ¹	Source Description	Make	Model #	Serial #	Manufacturer's Rated Capacity ³ (Specify Units)	Requested Permitted Capacity ³ (Specify Units)	Date of Manufacture ²	Controlled by Unit #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB) ⁴	Replacing Unit No.
							Date of Construction/ Reconstruction ²	Emissions vented to Stack #				
ENG1	Natural Gas Engine	Caterpillar	G3616	ZZY00906	5000 HP	5000 HP	3/1/2019	CAT1	20200254	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4 SLB RICE	N/A
							3/1/2019	ENG1				
ENG2	Natural Gas Engine	Caterpillar	G3616	ZZY00911	5000 HP	5000 HP	3/1/2019	CAT2	20200254	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4 SLB RICE	N/A
							3/1/2019	ENG2				
ENG3	Natural Gas Engine	Caterpillar	G3616	ZZY00912	5000 HP	5000 HP	3/1/2019	CAT3	20200254	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4 SLB RICE	N/A
							3/1/2019	ENG3				
ENG4	Natural Gas Engine	Caterpillar	G3616TA	TBD	5000 HP	5000 HP	TBD	CAT4	20200254	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4 SLB RICE	N/A
							TBD	ENG4				
ENG5	Natural Gas Engine	Caterpillar	G3616TA	TBD	5000 HP	5000 HP	TBD	CAT5	20200254	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4 SLB RICE	N/A
							TBD	ENG5				
ENG6	Natural Gas Engine	Caterpillar	G3616TA	TBD	5000 HP	5000 HP	TBD	CAT6	20200254	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4 SLB RICE	N/A
							TBD	ENG6				
ENG7	Natural Gas Engine	Caterpillar	G3616TA	TBD	5000 HP	5000 HP	TBD	CAT7	20200254	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4 SLB RICE	N/A
							TBD	ENG7				
ENG8	Natural Gas Engine	Caterpillar	G3616TA	TBD	5000 HP	5000 HP	TBD	CAT8	20200254	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4 SLB RICE	N/A
							TBD	ENG8				
ENG9	Natural Gas Engine	Caterpillar	G3616TA	TBD	5000 HP	5000 HP	TBD	CAT9	20200254	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4 SLB RICE	N/A
							TBD	ENG9				
ENG10	Natural Gas Engine	Caterpillar	3516J	N6W01216	1380 HP	1380 HP	2/1/2019	CAT10	20200254	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4 SLB RICE	N/A
							2/1/2019	ENG10				
ENG11	Natural Gas Engine	Caterpillar	3516J	N6W01187	1380 HP	1380 HP	1/1/2019	CAT11	20200254	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4 SLB RICE	N/A
							1/1/2019	ENG11				
ENG12	Natural Gas Engine	Caterpillar	3516J	TBD	1380 HP	1380 HP	TBD	CAT12	20200254	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4 SLB RICE	N/A
							TBD	ENG12				

Unit Number ¹	Source Description	Make	Model #	Serial #	Manufact-urer's Rated Capacity ³ (Specify Units)	Requested Permitted Capacity ³ (Specify Units)	Date of Manufacture ²	Controlled by Unit #	Source Classi-fication Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB) ⁴	Replacing Unit No.
							Date of Construction/ Reconstruction ²	Emissions vented to Stack #				
ENG13	Natural Gas Engine	Caterpillar	3306B	TBD	192 HP	192 HP	TBD	N/A	20200253	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4 SRB RICE	N/A
DEHY1	TEG Dehydrator with Condenser	Titan	N/A	WIP.NO 001314-000	80 MMscfd	80 MMscfd	2019	COND1	31000227	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							2019	VC1				
RB1	Glycol Regenator	N/A	N/A	N/A	3.0 MMBtu/hr	3.0 MMBtu/hr	TBD	N/A	31000228	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							TBD	RB1				
DEHY2	TEG Dehydrator with Condenser	N/A	N/A	N/A	80 MMscfd	80 MMscfd	TBD	COND2	31000227	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							TBD	VC1				
RB2	Glycol Regenator	N/A	N/A	N/A	3.0 MMBtu/hr	3.0 MMBtu/hr	TBD	N/A	31000228	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							TBD	RB2				
DEHY3	TEG Dehydrator with Condenser	N/A	N/A	N/A	80 MMscfd	80 MMscfd	TBD	COND3	31000227	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							TBD	VC1				
RB3	Glycol Regenator	N/A	N/A	N/A	3.0 MMBtu/hr	3.0 MMBtu/hr	TBD	N/A	31000228	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							TBD	RB3				
LOAD	Truck Loading	N/A	N/A	N/A	631 BOPD 438 BWPD	631 BOPD 438 BWPD	N/A	N/A	40400250	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							N/A	N/A				
FUG	Fugitive Emissions	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	N/A
							N/A	N/A				
HTR1	Auxiliary Heater	Wenco EC	N/A	12160	0.75 MMBtu/hr	0.75 MMBtu/hr	2019	N/A	31000404	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							2019	HTR1				
HTR2	Auxiliary Heater	N/A	N/A	N/A	0.75 MMBtu/hr	0.75 MMBtu/hr	TBD	N/A	31000404	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							TBD	HTR2				
HTR3	Auxiliary Heater	N/A	N/A	N/A	1.5 MMBtu/hr	1.5 MMBtu/hr	TBD	N/A	31000404	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							TBD	HTR3				
VRU	Vapor Recovery Unit	N/A	N/A	N/A	N/A	N/A	TBD	N/A	N/A	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
							TBD	N/A				

¹ Unit numbers must correspond to unit numbers in the previous NOI unless a complete cross reference table of all units in both NOIs is provided.

² Specify dates required to determine regulatory applicability.

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

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

Table 2-B: Insignificant Activities¹ (20.2.70 NMAC) OR Exempted Equipment (20.2.72 NMAC)

All 20.2.70 NMAC (Title V) applications must list all Insignificant Activities in this table. All 20.2.72 NMAC applications must list Exempted Equipment in this table. If equipment listed on this table is exempt under 20.2.72.202.B.5, include emissions calculations and emissions totals for 20.2.B.5 "similar functions" units, operations, and activities in Section 6, Calculations. Equipment and activities exempted under 20.2.72.202 NMAC may not necessarily be Insignificant under 20.2.70 NMAC (and vice versa). Unit & stack numbering must be consistent throughout the application package. Per Exemptions Policy 02-012.00 (see http://www.env.nm.gov/aqb/permit/aqb_pol.html), 20.2.72.202.B NMAC Exemptions do not apply, but 20.2.72.202.A NMAC exemptions do apply to NOI facilities under 20.2.73 NMAC. List 20.2.72.301.D.4 NMAC Auxiliary Equipment for Streamline applications in Table 2-A. The List of Insignificant Activities (for TV) can be found online at <http://www.env.nm.gov/aqb/forms/InsignificantListTitleV.pdf>. TV sources may elect to enter both TV Insignificant Activities and Part 72 Exemptions on this form.

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

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

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

Table 2-C: Emissions Control Equipment

Unit and stack numbering must correspond throughout the application package. 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. Flares, Enclosed Combustion Devices, Catalytic Converters and Air Fuel Ratio (AFR) Controllers shall be reported on Table 2-C. For each AFR, note whether the AFR are aftermarket or integral to the engine.

[illegible]

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

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

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.	NO _x		CO		VOC		SO _x		PM ¹		PM ₁₀ ¹		PM _{2.5} ¹		H ₂ S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
ENG1	4.13	18.11	31.64	138.56	11.34	49.66	0.46	2.02	0.38	1.66	0.38	1.66	0.38	1.66	-	-	-	-
ENG2	4.13	18.11	31.64	138.56	11.34	49.66	0.46	2.02	0.38	1.66	0.38	1.66	0.38	1.66	-	-	-	-
ENG3	4.13	18.11	31.64	138.56	11.34	49.66	0.46	2.02	0.38	1.66	0.38	1.66	0.38	1.66	-	-	-	-
ENG4	4.13	18.11	31.64	138.56	11.34	49.66	0.46	2.02	0.38	1.66	0.38	1.66	0.38	1.66	-	-	-	-
ENG5	4.13	18.11	31.64	138.56	11.34	49.66	0.46	2.02	0.38	1.66	0.38	1.66	0.38	1.66	-	-	-	-
ENG6	4.13	18.11	31.64	138.56	11.34	49.66	0.46	2.02	0.38	1.66	0.38	1.66	0.38	1.66	-	-	-	-
ENG7	4.13	18.11	31.64	138.56	11.34	49.66	0.46	2.02	0.38	1.66	0.38	1.66	0.38	1.66	-	-	-	-
ENG8	4.13	18.11	31.64	138.56	11.34	49.66	0.46	2.02	0.38	1.66	0.38	1.66	0.38	1.66	-	-	-	-
ENG9	4.13	18.11	31.64	138.56	11.34	49.66	0.46	2.02	0.38	1.66	0.38	1.66	0.38	1.66	-	-	-	-
ENG10	1.90	8.33	7.45	32.65	5.04	22.07	0.14	0.60	0.11	0.50	0.11	0.50	0.11	0.50	-	-	-	-
ENG11	1.90	8.33	7.45	32.65	5.04	22.07	0.14	0.60	0.11	0.50	0.11	0.50	0.11	0.50	-	-	-	-
ENG12	1.90	8.33	7.45	32.65	5.04	22.07	0.14	0.60	0.11	0.50	0.11	0.50	0.11	0.50	-	-	-	-
ENG13	0.26	1.16	0.85	3.71	0.19	0.84	0.02	0.09	0.02	0.08	0.02	0.08	0.02	0.08	-	-	-	-
FL1 (Pilot)	0.06	0.28	0.13	0.56	0.09	0.37	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.01	-	-	-	-
FL2 (Pilot)	0.06	0.28	0.13	0.56	0.09	0.37	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.01	-	-	-	-
FL3 (Pilot)	0.06	0.28	0.13	0.56	0.09	0.37	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.01	-	-	-	-
SKTK1/SKTK2	-	-	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-
OT1	-	-	-	-	22.75	99.65	-	-	-	-	-	-	-	-	-	-	-	-
OT2	-	-	-	-	22.75	99.65	-	-	-	-	-	-	-	-	-	-	-	-
OT3	-	-	-	-	22.75	99.65	-	-	-	-	-	-	-	-	-	-	-	-
OT4	-	-	-	-	22.75	99.65	-	-	-	-	-	-	-	-	-	-	-	-
WT1	-	-	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-
WT2	-	-	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-

Unit No.	NOx		CO		VOC		SOx		PM ¹		PM10 ¹		PM2.5 ¹		H ₂ S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
LPS	Emissions from the LPS are sent to the sales line.																	
DEHY1	-	-	-	-	31.65	138.63	-	-	-	-	-	-	-	-	-	-	-	-
RB1	0.55	2.40	0.46	2.02	0.03	0.13	0.04	0.16	-	-	0.04	0.18	0.04	0.18	-	-	-	-
DEHY2	-	-	-	-	31.65	138.63	-	-	-	-	-	-	-	-	-	-	-	-
RB2	0.55	2.40	0.46	2.02	0.03	0.13	0.04	0.16	-	-	0.04	0.18	0.04	0.18	-	-	-	-
DEHY3	-	-	-	-	31.65	138.63	-	-	-	-	-	-	-	-	-	-	-	-
RB3	0.55	2.40	0.46	2.02	0.03	0.13	0.04	0.16	-	-	0.04	0.18	0.04	0.18	-	-	-	-
LOAD	-	-	-	-	60.09	0.38	-	-	-	0.01	0.00	0.01	0.00	0.01	-	-	-	-
FUG	-	-	-	-	2.01	29.03	-	-	-	-	-	-	-	-	-	-	-	-
SSM	-	-	-	-	---	10.00	-	-	-	-	-	-	-	-	-	-	-	-
VC1	0.03	0.14	0.06	0.28	0.04	0.19	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.01	-	-	-	-
HTR1	0.14	0.60	0.12	0.50	0.01	0.03	0.01	0.04	0.01	0.05	0.01	0.05	0.01	0.05	-	-	-	-
HTR2	0.14	0.60	0.12	0.50	0.01	0.03	0.01	0.04	0.01	0.05	0.01	0.05	0.01	0.05	-	-	-	-
HTR3	0.27	1.20	0.23	1.01	0.02	0.07	0.02	0.08	0.02	0.09	0.02	0.09	0.02	0.09	-	-	-	-
Totals	45.59	199.68	310.22	1358.77	365.81	1369.67	4.73	20.71	-	-	3.94	17.25	3.94	17.25	-	-	-	-

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-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.	NO _x		CO		VOC		SO _x		PM ¹		PM ₁₀ ¹		PM _{2.5} ¹		H ₂ S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
ENG1	4.13	18.11	4.75	20.78	3.06	13.41	0.46	2.02	0.38	1.66	0.38	1.66	0.38	1.66	-	-	-	-
ENG2	4.13	18.11	4.75	20.78	3.06	13.41	0.46	2.02	0.38	1.66	0.38	1.66	0.38	1.66	-	-	-	-
ENG3	4.13	18.11	4.75	20.78	3.06	13.41	0.46	2.02	0.38	1.66	0.38	1.66	0.38	1.66	-	-	-	-
ENG4	4.13	18.11	4.75	20.78	3.06	13.41	0.46	2.02	0.38	1.66	0.38	1.66	0.38	1.66	-	-	-	-
ENG5	4.13	18.11	4.75	20.78	3.06	13.41	0.46	2.02	0.38	1.66	0.38	1.66	0.38	1.66	-	-	-	-
ENG6	4.13	18.11	4.75	20.78	3.06	13.41	0.46	2.02	0.38	1.66	0.38	1.66	0.38	1.66	-	-	-	-
ENG7	4.13	18.11	4.75	20.78	3.06	13.41	0.46	2.02	0.38	1.66	0.38	1.66	0.38	1.66	-	-	-	-
ENG8	4.13	18.11	4.75	20.78	3.06	13.41	0.46	2.02	0.38	1.66	0.38	1.66	0.38	1.66	-	-	-	-
ENG9	4.13	18.11	4.75	20.78	3.06	13.41	0.46	2.02	0.38	1.66	0.38	1.66	0.38	1.66	-	-	-	-
ENG10	1.90	8.33	1.12	4.90	1.36	5.96	0.14	0.60	0.11	0.50	0.11	0.50	0.11	0.50	-	-	-	-
ENG11	1.90	8.33	1.12	4.90	1.36	5.96	0.14	0.60	0.11	0.50	0.11	0.50	0.11	0.50	-	-	-	-
ENG12	1.90	8.33	1.12	4.90	1.36	5.96	0.14	0.60	0.11	0.50	0.11	0.50	0.11	0.50	-	-	-	-
ENG13	0.26	1.16	0.85	3.71	0.19	0.84	0.02	0.09	0.02	0.08	0.02	0.08	0.02	0.08	-	-	-	-
FL1/FL2/FL3	1551.07	11.59	3096.52	23.13	2724.96	27.23	0.00	0.00	69.69	0.48	69.69	0.48	69.69	0.48	-	-	-	-
SKTK1/SKTK2	Emissions Represented at FL1.																	
OT1	Emissions Represented at FL1.																	
OT2	Emissions Represented at FL1.																	
OT3	Emissions Represented at FL1.																	
OT4	Emissions Represented at FL1.																	
WT1	Emissions Represented at FL1.																	
WT2	Emissions Represented at FL1.																	
LPS	Emissions Represented at FL1.																	
DEHY1	Emissions Represented at VC1.																	
RB1	0.55	2.40	0.46	2.02	0.03	0.13	0.04	0.16	0.04	0.18	0.04	0.18	0.04	0.18	-	-	-	-

Unit No.	NOx		CO		VOC		SOx		PM ¹		PM10 ¹		PM2.5 ¹		H ₂ S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
DEHY2	Emissions Represented at VC1.																	
RB2	0.55	2.40	0.46	2.02	0.03	0.13	0.04	0.16	0.04	0.18	0.04	0.18	0.04	0.18	-	-	-	-
DEHY3	Emissions Represented at VC1.																	
RB3	0.55	2.40	0.46	2.02	0.03	0.13	0.04	0.16	0.04	0.18	0.04	0.18	0.04	0.18	-	-	-	-
LOAD	-	-	-	-	0.79	0.38	-	-	-	-	-	-	-	-	-	-	-	-
FUG	-	-	-	-	2.01	8.80	-	-	-	-	-	-	-	-	-	-	-	-
HTR1	0.14	0.60	0.12	0.50	0.01	0.03	0.01	0.04	0.01	0.05	0.01	0.05	0.01	0.05	-	-	-	-
HTR2	0.14	0.60	0.12	0.50	0.01	0.03	0.01	0.04	0.01	0.05	0.01	0.05	0.01	0.05	-	-	-	-
HTR3	0.27	1.20	0.23	1.01	0.02	0.07	0.02	0.08	0.02	0.09	0.02	0.09	0.02	0.09	-	-	-	-
VC1	0.33	1.44	0.65	2.87	1.94	8.50	0.00	0.00	0.01	0.04	0.01	0.04	0.01	0.04	-	-	-	-
SSM	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	-	-
Totals	1596.8	211.7	3145.9	239.5	2761.6	194.8	4.7	20.7	73.6	17.7	73.6	17.7	73.6	17.7	-	-	-	-

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).

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

² **Condensable Particulate Matter:** Include condensable particulate matter emissions for PM10 and PM2.5 if the source is a combustion source. Do not include condensable particulate matter for TSP unless TSP 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).

X 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.

Form Revision: 5/29/2019 Table 2-G: Page 1 Printed 8/19/2021 2:33 PM

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.

Stack Number	Serving Unit Number(s) from Table 2-A	Orientation (H=Horizontal V=Vertical)	Rain Caps (Yes or No)	Height Above Ground (ft)	Temp. (F)	Flow Rate		Moisture by Volume (%)	Velocity (ft/sec)	Inside Diameter (ft)
						(acfs)	(dscfs)			
RB1	RB1	V	N	20	1000	22.09	N/A	N/A	28.13	1.00
RB2	RB2	V	N	20	1000	22.09	N/A	N/A	28.13	1.00
RB3	RB3	V	N	20	1000	22.09	N/A	N/A	28.13	1.00
VC1	VC1 (Pilot + Vapors)	V	N	13	1500	23.77	N/A	N/A	1.21	5.00
FL2	FL1 (Pilot Only)	V	N	140	1832	0.11	N/A	N/A	65.60	0.83
FL2	FL2 (Pilot Only)	V	N	140	1832	0.11	N/A	N/A	65.60	0.83
FL3	FL3 (Pilot Only)	V	N	140	1832	0.11	N/A	N/A	65.60	0.83
ENG1	ENG1	V	N	25	829	522.05	N/A	N/A	295.42	1.50
ENG2	ENG2	V	N	25	829	522.05	N/A	N/A	295.42	1.50
ENG3	ENG3	V	N	25	829	522.05	N/A	N/A	295.42	1.50
ENG4	ENG4	V	N	25	829	522.05	N/A	N/A	295.42	1.50
ENG5	ENG5	V	N	25	829	522.05	N/A	N/A	295.42	1.50
ENG6	ENG6	V	N	25	829	522.05	N/A	N/A	295.42	1.50
ENG7	ENG7	V	N	25	829	522.05	N/A	N/A	295.42	1.50
ENG8	ENG8	V	N	25	829	522.05	N/A	N/A	295.42	1.50
ENG9	ENG9	V	N	25	829	522.05	N/A	N/A	295.42	1.50
ENG10	ENG10	V	N	20	831	134.38	N/A	N/A	171.10	1.00
ENG11	ENG11	V	N	20	831	134.38	N/A	N/A	171.10	1.00
ENG12	ENG12	V	N	20	831	134.38	N/A	N/A	171.10	1.00
ENG13	ENG13	V	N	15	1115	15.72	N/A	N/A	35.58	0.75
HTR1	HTR1	V	N	20	1000	5.52	N/A	N/A	7.03	1.00
HTR2	HTR2	V	N	20	1000	5.52	N/A	N/A	7.03	1.00
HTR3	HTR3	V	N	20	1000	11.04	N/A	N/A	14.06	1.00

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

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

Stack No.	Unit No.(s)	Total HAPs		Formaldehyde X HAP or □ TAP		Acetaldehyde X HAP or □ TAP		Benzene X HAP or □ TAP		Provide Pollutant Name Here □ HAP or □ TAP		Provide Pollutant Name Here □ HAP or □ TAP		Provide Pollutant Name Here □ HAP or □ TAP		Provide Pollutant Name Here □ HAP or □ TAP		Provide Pollutant Name Here □ HAP or □ TAP	
		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
ENG1	ENG1	0.5	2.3	0.4	2.0	0.1	0.4	0.0	0.0										
ENG2	ENG2	0.5	2.3	0.4	2.0	0.1	0.4	0.0	0.0										
ENG3	ENG3	0.5	2.3	0.4	2.0	0.1	0.4	0.0	0.0										
ENG4	ENG4	0.5	2.3	0.4	2.0	0.1	0.4	0.0	0.0										
ENG5	ENG5	0.5	2.3	0.4	2.0	0.1	0.4	0.0	0.0										
ENG6	ENG6	0.5	2.3	0.4	2.0	0.1	0.4	0.0	0.0										
ENG7	ENG7	0.5	2.3	0.4	2.0	0.1	0.4	0.0	0.0										
ENG8	ENG8	0.5	2.3	0.4	2.0	0.1	0.4	0.0	0.0										
ENG9	ENG9	0.5	2.3	0.4	2.0	0.1	0.4	0.0	0.0										
ENG10	ENG10	1.4	1.5	0.3	1.4	0.0	0.1	0.0	0.0										
ENG11	ENG11	1.4	1.5	0.3	1.4	0.0	0.1	0.0	0.0										
ENG12	ENG12	1.4	1.5	0.3	1.4	0.0	0.1	0.0	0.0										
ENG13	ENG13	0.1	0.5	0.1	0.4	0.0	0.0	0.0	0.0										
FL1/FL2/ FL3	FL1/FL2/FL3	119.4	1.5	--	--	0.0	0.0	0.0	0.0										
SKTK1/ SKTK2	SKTK1/ SKTK2	Emissions Represented at FL1/FL2/FL3																	
OT1	OT1	Emissions Represented at FL1/FL2/FL3																	
OT2	OT2	Emissions Represented at FL1/FL2/FL3																	
OT3	OT3	Emissions Represented at FL1/FL2/FL3																	
OT4	OT4	Emissions Represented at FL1/FL2/FL3																	
WT1	WT1	Emissions Represented at FL1/FL2/FL3																	
WT2	WT2	Emissions Represented at FL1/FL2/FL3																	
LPS	LPS	Emissions Represented at FL1/FL2/FL3																	
DEHY1	DEHY1	Emissions Represented at VC1.																	

Stack No.	Unit No.(s)	Total HAPs		Formaldehyde X HAP or ☐ TAP		Acetaldehyde X HAP or ☐ TAP		Benzene X HAP or ☐ TAP		Provide Pollutant Name Here ☐ HAP or ☐ TAP		Provide Pollutant Name Here ☐ HAP or ☐ TAP		Provide Pollutant Name Here ☐ HAP or ☐ TAP		Provide Pollutant Name Here ☐ HAP or ☐ TAP		Provide Pollutant Name Here ☐ HAP or ☐ TAP	
		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
RB1	RB1	0.0	0.0	--	--	0.0	0.0	0.0	0.0										
DEHY2	DEHY2	Emissions Represented at VC1.																	
RB2	RB2	0.0	0.0	--	--	0.0	0.0	0.0	0.0										
LOAD	LOAD	0.0	0.0	--	--	0.0	0.0	0.0	0.0										
RB3	RB3	0.0	0.0	--	--	0.0	0.0	0.0	0.0										
DEHY3	DEHY3	Emissions Represented at VC1.																	
FUG	FUG	0.1	0.4	--	--	0.0	0.2	0.0	0.0										
VC1	VC1	0.7	3.3	--	--	0.2	0.7	0.5	2.2										
HTR1-HTR3	HTR1-HTR3	0.0	0.0	--	--	0.0	0.0	0.0	0.0										
SSM	SSM	---	---	--	--	--	--	--	--										
Totals:		126.3	31.3	5.1	22.3	1.1	4.7	0.5	2.3										

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 (scf)	Annual Usage (mmscf)	% Sulfur	% Ash
FL1, FL2, FL3	Natural Gas	Field Gas	1165	400.0	3.50	Negligible	0
RB1, RB2, RB3	Natural Gas	Field Gas	1165	2574.8	22.56	Negligible	0
ENG1-ENG8	Natural Gas	Field Gas	1165	32245.1	282.47	Negligible	0
ENG10-ENG12	Natural Gas	Field Gas	1165	9645.8	84.50	Negligible	0
ENG13	Natural Gas	Field Gas	1165	9645.8	84.50	Negligible	0
HTR1-HTR2	Natural Gas	Field Gas	1165	643.7	5.64	Negligible	0
HTR3	Natural Gas	Field Gas	1165	1287.4	11.28	Negligible	0
VC1	Natural Gas	Field Gas	1165	200.0	0.00	Negligible	0

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

[illegible]

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

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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	
Note: 1.00 bbl = 0.159 M ³ = 42.0 gal					MG: Medium Gray	
					BL: Black	
					OT: Other (specify)	

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

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

[illegible]

Table 2-N: CEM Equipment

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

[illegible]

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

[illegible]

Table 2-P: Greenhouse Gas Emissions

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

		CO ₂ ton/yr	N ₂ O ton/yr	CH ₄ ton/yr	SF ₆ ton/yr	PFC/HFC ton/yr ²									Total GHG Mass Basis ton/yr ⁴	Total CO ₂ e ton/yr ⁵
Unit No.	GWPs ¹	1	298	25	22,800	footnote 3										
VC1	mass GHG	1636.24	0.00	0.09											1636.3	
	CO ₂ e	1636.24	0.00	2.21												1638.5
ENG1-9	mass GHG	197273.81	0.33	3.27											197277.4	
	CO ₂ e	197273.81	97.32	81.64												197452.8
ENG10-12	mass GHG	20427.83	0.03	0.33											20428.2	
	CO ₂ e	20427.83	9.70	8.14												20445.7
RB1	mass GHG	1537.34	0.00	0.03											1537.4	
	CO ₂ e	1537.34	0.86	0.72												1538.9
RB2	mass GHG	1537.34	0.00	0.03											1537.4	
	CO ₂ e	1537.34	0.86	0.72												1538.9
HTR1-2	mass GHG	768.67	0.00	0.01											768.7	
	CO ₂ e	768.67	0.43	0.36												769.5
HTR-3	mass GHG	768.67	0.00	0.01											768.7	
	CO ₂ e	768.67	0.43	0.36												769.5
FL1-FL3	mass GHG	9488.63	0.01	1.45											9490.1	
	CO ₂ e	9488.63	3.71	36.36												9528.7
RB3	mass GHG	1537.34	0.00	0.03											1537.4	
	CO ₂ e	1537.34	0.86	0.72												1538.9
ENG13	mass GHG	1069.74	0.00	0.02											1069.8	
	CO ₂ e	1069.74	0.50	0.42												1070.7
	mass GHG															
	CO ₂ e															
	mass GHG															
	CO ₂ e															
Total	mass GHG														236051	
	CO ₂ e															236292

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

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

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

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

⁵ CO₂e means Carbon Dioxide Equivalent and is calculated by multiplying the TPY mass emissions of the green house gas by its GWP.

Section # 3
UA3 Form

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.

XTO Energy Inc. (XTO) is submitting this Title V Operating Permit application to the New Mexico Environmental Department (NMED) for the Longhorn Compressor Station. This initial Title V Operating Permit application is submitted under section 20.2.70.300.B(1) of the New Mexico Administrative Code (NMAC).

The Longhorn Compressor Station facility is a typical compressor station with natural gas engines, dehydration, storage tanks, and flares. The facility is currently authorized under New Source Review (NSR) Permit 8349, issued on January 16, 2020. As required by 20.2.70.300.B(1) NMAC, XTO is submitting this initial Title V Operating Permit application within twelve months of the facility commencing operation as a Part 70 source.

XTO Energy Inc. elected to use the flat 10 ton per year VOC SSM emission rate allowed by policy. Other SSM emissions are routed to the flare and included with regular facility operation in Table 2E of the application.

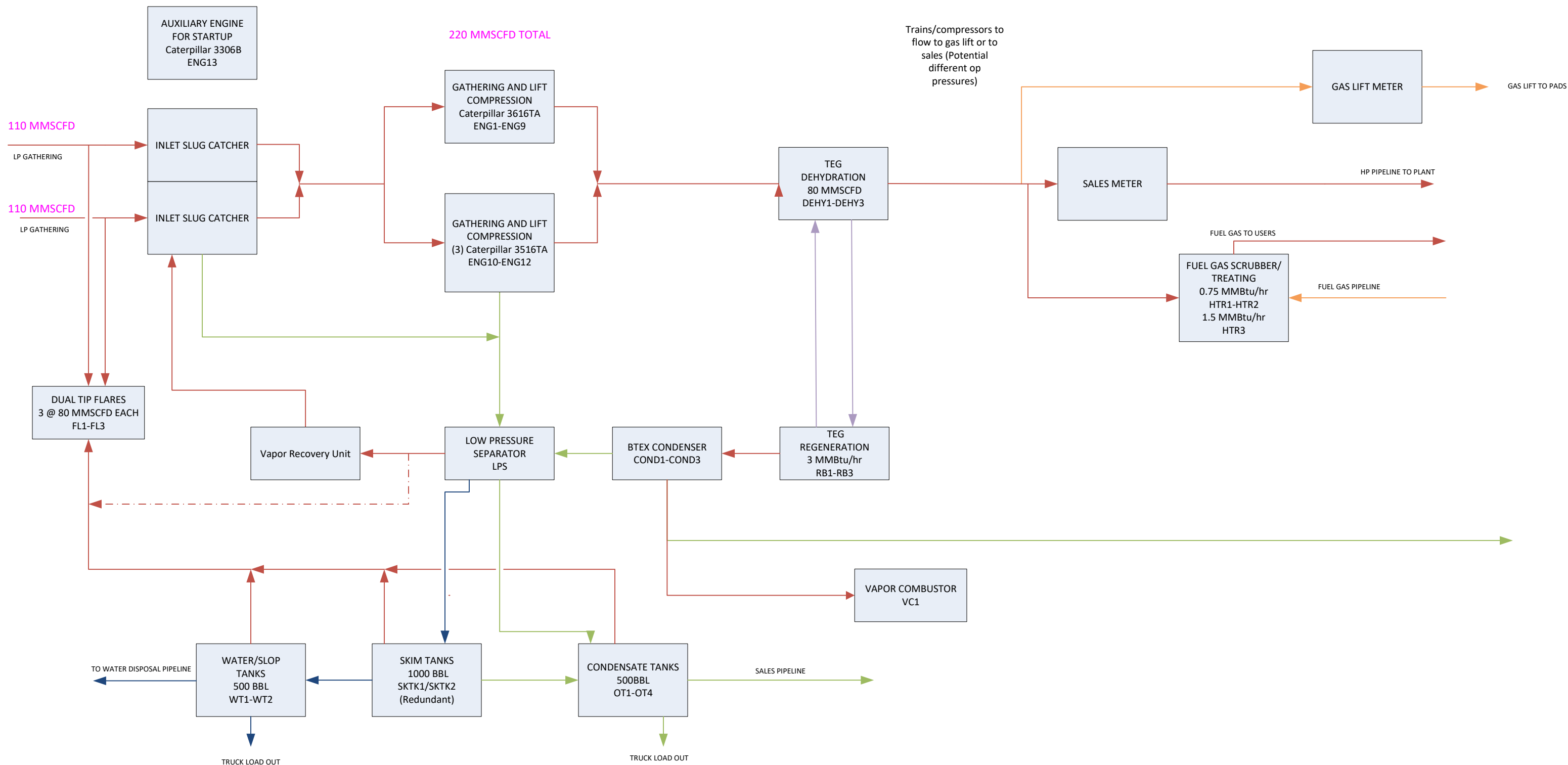
Section 4

Process Flow Sheet

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

A process flow diagram for the facility is included.

XTO LONGHORN COMPRESSOR STATION



Section 5

Plot Plan Drawn To Scale

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

A plot plan for the facility is included.

UTM North [m]

3554800
3554850
3554900
3554950
3555000

595500

595550

595600

595650

595700

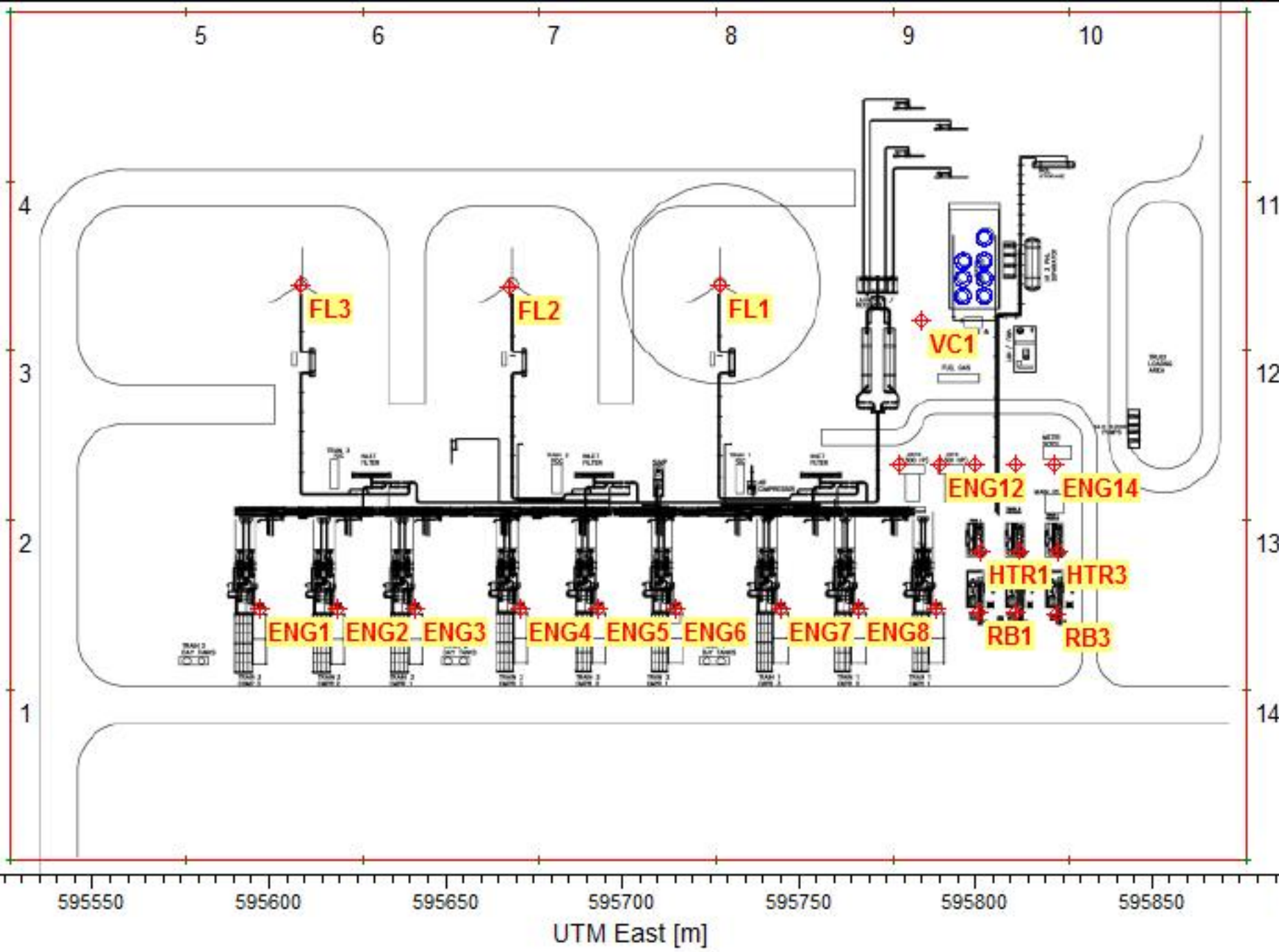
595750

595800

595850

595900

UTM East [m]



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.

The PLU 22 Big Sinks analysis from the 2nd Bone Springs formation is used in this application. The wells flowing into the station are from the 2nd Bone Springs formation.

Flare (FL1/FL2/FL3)

FL1/FL2/FL3 use continuously lit pilot systems. Emission rates for NO_x and CO are calculated using factors from TNRCC. H₂S, SO₂ and VOC emissions were calculated based on the gas composition. The pilots are assumed to use 400 scf/hr of pilot/purge gas. The flares would be used to combust high pressure inlet or sales gas and overhead gas from the low pressure separator during VRU downtime. Documentation is provided in Section 14 that the flares comply with NSPS 40 CFR 60, which requires flares to achieve 98% efficiency. The mass flow of gas was modeled using Promax. Emission rates for NO_x and CO are calculated using factors from TNRCC. H₂S, SO₂ and VOC emissions were calculated based on the gas analysis.

Vapor Combustor (VC1)

VC1 uses a continuously lit pilot system. Emission rates for NO_x and CO are calculated using factors from TNRCC. H₂S, SO₂ and VOC emissions were calculated based on the gas composition. The pilots are assumed to use 200 scf/hr of pilot/purge gas. VC1 will be used to control uncondensed vapors from the dehydrator condensers. Documentation is provided in Section 14 that the combustors achieve 98% efficiency. The mass flow of gas generated by the dehydrators was modeled using Promax. Emission rates for NO_x and CO are calculated using factors from TNRCC. H₂S, SO₂ and VOC emissions were calculated based on the gas analysis.

Low Pressure Separator (LPS)

The LPS is a piece of process equipment, not an emission point. The mass flow of gas generated at the LPS was modeled using Promax. Gas from the LPS is routed to the flares. Any emissions resulting from combustion of gas generated at the LPS are represented at FL1/FL2/FL3.

Skim Tanks (SKTK1/SKTK2)

The skim tanks collect water from the LPS, condensed liquids from the dehydrator, and liquids from the condensers. Flashing and working/breathing emissions were estimated using Promax, assuming a flow of 458 BWPd. Emissions from the skim tanks are routed to FL1/FL2/FL3.

Condensate Tanks (OT1 to OT4)

Flashing and working/breathing emissions were estimated using Promax, assuming a flow of 681 BOPd. FL1/FL2/FL3 are used to control vapors with a collection efficiency of 98%. Condensate is trucked offsite.

Water Tanks (WT1, WT2)

Water tank emissions were estimated using Promax, assuming a throughput of 446 BWPd. FL1/FL2/FL3 are used to control vapors with a collection efficiency of 98%. Water is trucked offsite for disposal.

Fugitives (FUG)

Fugitives for the facility were calculated in EPA/API average emission factors.

Caterpillar 3616, 3608, and 3516– ENG-1 to ENG-13

Emission factors for NO_x, CO, formaldehyde, and VOC are based on manufacturer's data. Emission rates TSP, PM₁₀, and PM_{2.5} were calculated using AP-42 Table 3.2-3 emission factors. PM₁₀ and PM_{2.5} emissions are set equal to TSP emissions as a conservative measure. SO₂ emissions were calculated based on the units' fuel consumption and a maximum sulfur content of 5 grains per 100 standard cubic feet (5 gr/100 scf). Hazardous Air Pollutants (HAPs) except for formaldehyde were calculated using AP-42 factors. The following operational flexibility factors were added:

- All engines – 25% was added to the NO_x emission factors
- 3516 – 25% was added to the VOC emission factor

Triethylene Glycol Dehydrators (DEHY1-DEHY3)

Emissions from the dehydrators are calculated using BR&E ProMax simulation software. Flash tank vapors are routed back to mixing with the inlet gas. Each dehydrator is equipped with a condenser. Condensed liquids are routed to the skim tank and

any remaining gas is burned at the vapor combustor (VC1). The emissions being released at VC1 from the dehydration process are represented as a separate emission point (DEHY1-DEHY3).

Line Heaters (HTR1-HTR3) and Glycol Regenerator Heaters (RB1-RB3)

Emission of NO_x, CO, VOC, HAP, and PM/PM₁₀/PM_{2.5} are based on AP-42 Table 1.4-1 emission factors for small heaters (<100 MMBtu/hr). PM₁₀ and PM_{2.5} emissions are set equal to PM emissions. SO₂ emissions were based on the unit's fuel consumption and a maximum sulfur content of 5 grains per 100 standard cubic feet (5 gr/100 scf).

Truck Loading (LOAD)

Uncontrolled emissions from oil loading of trucks were calculated using Equation 1 of AP-42 Section 5.2. Maximum slop oil loading rates are calculated using 631 BOPD for 365 days of the year. Relevant portions of AP-42 Section 5.2 are included in Section 7. Oil truck loading will be uncontrolled. Uncontrolled emissions from produced water truck loading were calculated using Promax, assuming water production rate of 438 BWPD for 365 days of the year.

Startup, Shutdown, and Maintenance (SSM)

SSM emissions not routed to the flare system were assumed equal to the flat 10 tpy of VOC per State guidance. Specific SSM emissions include small equipment blowdowns, tank emptying and refilling, tank roof landing, and miscellaneous activities. Other SSM emissions are routed to the flare and calculated in accordance with the flare methodology above.

Section 6.a

Green House Gas Emissions

(Submitting under 20.2.70, 20.2.72 20.2.74 NMAC)

Title V (20.2.70 NMAC), Minor NSR (20.2.72 NMAC), and PSD (20.2.74 NMAC) applicants must estimate and report greenhouse gas (GHG) emissions to verify the emission rates reported in the public notice, determine applicability to 40 CFR 60 Subparts, and to evaluate Prevention of Significant Deterioration (PSD) applicability. GHG emissions that are subject to air permit regulations consist of the sum of an aggregate group of these six greenhouse gases: carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

Calculating GHG Emissions:

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

Sources for Calculating GHG Emissions:

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

Global Warming Potentials (GWP):

Applicants must use the Global Warming Potentials codified in Table A-1 of the most recent version of 40 CFR 98 Mandatory Greenhouse Gas Reporting. The GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to that of one unit mass of CO₂ over a specified time period.

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

Metric to Short Ton Conversion:

Short tons for GHGs and other regulated pollutants are the standard unit of measure for PSD and title V permitting programs. 40 CFR 98 Mandatory Greenhouse Reporting requires metric tons.

1 metric ton = 1.10231 short tons (per Table A-2 to Subpart A of Part 98 – Units of Measure Conversions)

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
FACILITY EMISSIONS SUMMARY

EMISSIONS SUMMARY TABLE

EMISSION SOURCE DESCRIPTION	FACILITY IDENTIFICATION NUMBER	STACK NUMBER	NOx		CO		VOC (INCLUDES HAPs)		SO ₂		PM _{10 & 2.5}		HAPs		CO _{2e}
			lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	TPY
CATERPILLAR G3616 COMPRESSOR ENGINE	ENG1	ENG1	4.13	18.11	4.75	20.78	3.06	13.41	0.46	2.02	0.38	1.66	0.53	2.33	21939
CATERPILLAR G3616 COMPRESSOR ENGINE	ENG2	ENG2	4.13	18.11	4.75	20.78	3.06	13.41	0.46	2.02	0.38	1.66	0.53	2.33	21939
CATERPILLAR G3616 COMPRESSOR ENGINE	ENG3	ENG3	4.13	18.11	4.75	20.78	3.06	13.41	0.46	2.02	0.38	1.66	0.53	2.33	21939
CATERPILLAR G3616 COMPRESSOR ENGINE	ENG4	ENG4	4.13	18.11	4.75	20.78	3.06	13.41	0.46	2.02	0.38	1.66	0.53	2.33	21939
CATERPILLAR G3616 COMPRESSOR ENGINE	ENG5	ENG5	4.13	18.11	4.75	20.78	3.06	13.41	0.46	2.02	0.38	1.66	0.53	2.33	21939
CATERPILLAR G3616 COMPRESSOR ENGINE	ENG6	ENG6	4.13	18.11	4.75	20.78	3.06	13.41	0.46	2.02	0.38	1.66	0.53	2.33	21939
CATERPILLAR G3616 COMPRESSOR ENGINE	ENG7	ENG7	4.13	18.11	4.75	20.78	3.06	13.41	0.46	2.02	0.38	1.66	0.53	2.33	21939
CATERPILLAR G3616 COMPRESSOR ENGINE	ENG8	ENG8	4.13	18.11	4.75	20.78	3.06	13.41	0.46	2.02	0.38	1.66	0.53	2.33	21939
CATERPILLAR G3616 COMPRESSOR ENGINE	ENG9	ENG9	4.13	18.11	4.75	20.78	3.06	13.41	0.46	2.02	0.38	1.66	0.53	2.33	21939
CATERPILLAR G3516j COMPRESSOR ENGINE	ENG10	ENG10	1.90	8.33	1.12	4.90	1.36	5.96	0.14	0.60	0.11	0.50	0.35	1.51	6815
CATERPILLAR G3516j COMPRESSOR ENGINE	ENG11	ENG11	1.90	8.33	1.12	4.90	1.36	5.96	0.14	0.60	0.11	0.50	0.35	1.51	6815
CATERPILLAR G3516j COMPRESSOR ENGINE	ENG12	ENG12	1.90	8.33	1.12	4.90	1.36	5.96	0.14	0.60	0.11	0.50	0.35	1.51	6815
CATERPILLAR G3306B COMPRESSOR ENGINE	ENG13	ENG13	0.26	1.16	0.85	3.71	0.19	0.84	0.02	0.09	0.02	0.08	0.11	0.47	1071
VAPOR COMBUSTOR	VC1	VC1	0.33	1.44	0.65	2.87	1.94	8.50	0.00	0.00	0.01	0.04	0.75	3.27	1638
UTILITY FLARES: INCLUDES PILOTS AND PROCESS GAS	FL1/FL2/FL3	FL1/FL2/FL3	1551.07	11.59	3096.52	23.13	2724.96	27.23	0.00	0.00	69.69	0.48	119.44	1.50	9529
WATER SKIM TANK: 1000 BBL (REDUNDANT)	SKTK1-SKTK2	SKTK1-SKTK2	Emissions Represented at FL1/FL2/FL3												
CONDENSATE STORAGE TANK: 500 BBL	OT1	FL1/FL2/FL3	Emissions Represented at FL1/FL2/FL3												
CONDENSATE STORAGE TANK: 500 BBL	OT2	FL1/FL2/FL3	Emissions Represented at FL1/FL2/FL3												

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
FACILITY EMISSIONS SUMMARY

EMISSIONS SUMMARY TABLE

EMISSION SOURCE DESCRIPTION	FACILITY IDENTIFICATION NUMBER	STACK NUMBER	NOx		CO		VOC (INCLUDES HAPs)		SO ₂		PM _{10 & 2.5}		HAPs		CO ₂ e
			lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	TPY
CONDENSATE STORAGE TANK: 500 BBL	OT3	FL1/FL2/FL3	Emissions Represented at FL1/FL2/FL3												
CONDENSATE STORAGE TANK: 500 BBL	OT4	FL1/FL2/FL3	Emissions Represented at FL1/FL2/FL3												
PRODUCED WATER TANK: 500 BBL	WT1	FL1/FL2/FL3	Emissions Represented at FL1/FL2/FL3												
PRODUCED WATER TANK: 500 BBL	WT2	FL1/FL2/FL3	Emissions Represented at FL1/FL2/FL3												
LOW PRESSURE SEPARATOR	LPS	FL1/FL2/FL3	Emissions Represented at FL1/FL2/FL3												
TRIETHYLENE GLYCOL DEHYDRATOR	DEHY1	VC1	Emissions Represented at VC1												
GLYCOL REGENERATOR (3.0 MMBTU/HR)	RB1	RB1	0.55	2.40	0.46	2.02	0.03	0.13	0.04	0.16	0.04	0.18	0.01	0.04	1539
TRIETHYLENE GLYCOL DEHYDRATOR	DEHY2	VC1	Emissions Represented at VC1												
GLYCOL REGENERATOR (3.0 MMBTU/HR)	RB2	RB2	0.55	2.40	0.46	2.02	0.03	0.13	0.04	0.16	0.04	0.18	0.01	0.04	1539
TRIETHYLENE GLYCOL DEHYDRATOR	DEHY3	VC1	Emissions Represented at VC1												
GLYCOL REGENERATOR (3.0 MMBTU/HR)	RB3	RB3	0.55	2.40	0.46	2.02	0.03	0.13	0.04	0.16	0.04	0.18	0.01	0.04	1539
AUXILIARY HEATER (0.75 MMBTU/HR)	HTR1	HTR1	0.14	0.60	0.12	0.50	0.01	0.03	0.01	0.04	0.01	0.05	0.00	0.01	385
AUXILIARY HEATER (0.75 MMBTU/HR)	HTR2	HTR2	0.14	0.60	0.12	0.50	0.01	0.03	0.01	0.04	0.01	0.05	0.00	0.01	385
AUXILIARY HEATER (1.5 MMBTU/HR)	HTR3	HTR3	0.27	1.20	0.23	1.01	0.02	0.07	0.02	0.08	0.02	0.09	0.00	0.02	769
TRUCK LOADING (UNCAPTURED VAPORS)	LOAD	LOAD	---	---	---	---	0.79	0.38	---	---	---	---	0.04	0.02	---
SSM ACTIVITIES	SSM	SSM	---	---	---	---	---	10.00	---	---	---	---	---	---	---
FUGITIVE EMISSIONS: EQUIPMENT LEAKS	FUGITIVES	FUGITIVES	---	---	---	---	2.01	8.80	---	---	---	---	0.10	0.42	---
TOTAL FACILITY WIDE EMISSIONS			NOx		CO		VOC (INCLUDES HAPs)		SO ₂		PM _{10 & 2.5}		HAPs		CO ₂ e
			lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	TPY
			1596.8	211.7	3145.9	239.5	2761.6	194.8	4.7	20.7	73.6	17.7	126.3	31.3	236292

XTO ENERGY INC.
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COMPRESSOR ENGINES

Uncontrolled Emissions Calculations

Source ID	Unit Description	Annual Hours	Rated HP	MMbtu/hp-hr ¹ (HHV)	Manufacturer's Data				AP-42 Factors			lb/hr ⁴							tpy						
					g/hp-hr ²				lb/MMBtu ³																
					NOx	CO	VOC	HCHO	SO ₂	PM _{10 & 2.5}	Acetaldehyde	NOx	CO	VOC	HCHO	SO ₂	PM _{10 & 2.5}	Acetaldehyde	NOx	CO	VOC	HCHO	SO ₂	PM _{10 & 2.5}	Acetaldehyde
ENG1	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	0.38	2.87	1.00	0.15	0.01226	0.01006	0.00836	4.13	31.64	11.34	1.65	0.46	0.38	0.31	18.11	138.56	49.66	7.24	2.02	1.66	1.38
ENG2	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	0.38	2.87	1.00	0.15	0.01226	0.01006	0.00836	4.13	31.64	11.34	1.65	0.46	0.38	0.31	18.11	138.56	49.66	7.24	2.02	1.66	1.38
ENG3	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	0.38	2.87	1.00	0.15	0.01226	0.01006	0.00836	4.13	31.64	11.34	1.65	0.46	0.38	0.31	18.11	138.56	49.66	7.24	2.02	1.66	1.38
ENG4	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	0.38	2.87	1.00	0.15	0.01226	0.01006	0.00836	4.13	31.64	11.34	1.65	0.46	0.38	0.31	18.11	138.56	49.66	7.24	2.02	1.66	1.38
ENG5	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	0.38	2.87	1.00	0.15	0.01226	0.01006	0.00836	4.13	31.64	11.34	1.65	0.46	0.38	0.31	18.11	138.56	49.66	7.24	2.02	1.66	1.38
ENG6	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	0.38	2.87	1.00	0.15	0.01226	0.01006	0.00836	4.13	31.64	11.34	1.65	0.46	0.38	0.31	18.11	138.56	49.66	7.24	2.02	1.66	1.38
ENG7	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	0.38	2.87	1.00	0.15	0.01226	0.01006	0.00836	4.13	31.64	11.34	1.65	0.46	0.38	0.31	18.11	138.56	49.66	7.24	2.02	1.66	1.38
ENG8	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	0.38	2.87	1.00	0.15	0.01226	0.01006	0.00836	4.13	31.64	11.34	1.65	0.46	0.38	0.31	18.11	138.56	49.66	7.24	2.02	1.66	1.38
ENG9	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	0.38	2.87	1.00	0.15	0.01226	0.01006	0.00836	4.13	31.64	11.34	1.65	0.46	0.38	0.31	18.11	138.56	49.66	7.24	2.02	1.66	1.38
ENG10	CATERPILLAR G3516J COMPRESSOR ENGINE	8760	1380	0.008144	0.63	2.45	1.63	0.39	0.01226	0.01006	0.00836	1.90	7.45	5.04	1.19	0.14	0.11	0.09	8.33	32.65	22.07	5.20	0.60	0.50	0.41
ENG11	CATERPILLAR G3516J COMPRESSOR ENGINE	8760	1380	0.008144	0.63	2.45	1.63	0.39	0.01226	0.01006	0.00836	1.90	7.45	5.04	1.19	0.14	0.11	0.09	8.33	32.65	22.07	5.20	0.60	0.50	0.41
ENG12	CATERPILLAR G3516J COMPRESSOR ENGINE	8760	1380	0.008144	0.63	2.45	1.63	0.39	0.01226	0.01006	0.00836	1.90	7.45	5.04	1.19	0.14	0.11	0.09	8.33	32.65	22.07	5.20	0.60	0.50	0.41
ENG13	CATERPILLAR G3306B COMPRESSOR ENGINE	8760	192	0.009122	0.63	2	0.44	0.24	0.012261	0.01006	0.00279	0.26	0.85	0.19	0.10	0.02	0.02	0.00	1.16	3.71	0.84	0.44	0.09	0.08	0.02

¹HHV is based on the Fuel Consumption Rate @ 100% Load from the Gas Engine Rating Pro Report

²The VOC emission factor (g/hp-hr) includes HCHO. 25% was added to NOx on all engines. 25% was added to VOC on 3516.

³SO₂ Emissions were calculated using the emission factor from Table 3.2-2. PM Emission Factor = 7.71E-05 lb/MMBTU + 7.71E-05 lb/MMBTU + 9.91E-03 lb/MMBTU = 0.01006 lb/MMBTU

⁴The VOC hourly rate includes formaldehyde and acetaldehyde.

Total Emissions Per Pollutant (TPY)	NOx	CO	VOC	HCHO	SO ₂	PM _{10 & 2.5}	Acetaldehyde
	189.09	1348.73	513.94	81.21	20.06	16.46	16.46

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
COMPRESSOR ENGINES

Controlled Emissions Calculations

Source ID	Unit Description	Annual Hours	Rated HP	MMBtu/hp-hr ¹ (HHV)	Control Efficiency (%)			Manufacturer's Data g/hp-hr ²				AP-42 Factors lb/MMBtu ³			lb/hr ⁴							tpy						
					CO	VOC	HCHO	NOx	CO	VOC	HCHO	SO ₂	PM _{10 & 2.5}	Acetaldehyde	NOx	CO	VOC	HCHO	SO ₂	PM _{10 & 2.5}	Acetaldehyde	NOx	CO	VOC	HCHO	SO ₂	PM _{10 & 2.5}	Acetaldehyde
ENG1	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	85.00	73.00	73.00	0.38	0.43	0.27	0.04	0.0123	0.01006	0.00836	4.13	4.75	3.06	0.45	0.46	0.38	0.08	18.11	20.78	13.41	1.96	2.02	1.66	0.37
ENG2	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	85.00	73.00	73.00	0.38	0.43	0.27	0.04	0.0123	0.01006	0.00836	4.13	4.75	3.06	0.45	0.46	0.38	0.08	18.11	20.78	13.41	1.96	2.02	1.66	0.37
ENG3	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	85.00	73.00	73.00	0.38	0.43	0.27	0.04	0.0123	0.01006	0.00836	4.13	4.75	3.06	0.45	0.46	0.38	0.08	18.11	20.78	13.41	1.96	2.02	1.66	0.37
ENG4	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	85.00	73.00	73.00	0.38	0.43	0.27	0.04	0.0123	0.01006	0.00836	4.13	4.75	3.06	0.45	0.46	0.38	0.08	18.11	20.78	13.41	1.96	2.02	1.66	0.37
ENG5	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	85.00	73.00	73.00	0.38	0.43	0.27	0.04	0.0123	0.01006	0.00836	4.13	4.75	3.06	0.45	0.46	0.38	0.08	18.11	20.78	13.41	1.96	2.02	1.66	0.37
ENG6	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	85.00	73.00	73.00	0.38	0.43	0.27	0.04	0.0123	0.01006	0.00836	4.13	4.75	3.06	0.45	0.46	0.38	0.08	18.11	20.78	13.41	1.96	2.02	1.66	0.37
ENG7	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	85.00	73.00	73.00	0.38	0.43	0.27	0.04	0.0123	0.01006	0.00836	4.13	4.75	3.06	0.45	0.46	0.38	0.08	18.11	20.78	13.41	1.96	2.02	1.66	0.37
ENG8	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	85.00	73.00	73.00	0.38	0.43	0.27	0.04	0.0123	0.01006	0.00836	4.13	4.75	3.06	0.45	0.46	0.38	0.08	18.11	20.78	13.41	1.96	2.02	1.66	0.37
ENG9	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	85.00	73.00	73.00	0.38	0.43	0.27	0.04	0.0123	0.01006	0.00836	4.13	4.75	3.06	0.45	0.46	0.38	0.08	18.11	20.78	13.41	1.96	2.02	1.66	0.37
ENG10	CATERPILLAR G3516J COMPRESSOR ENGINE	8760	1380	0.008144	85.00	73.00	73.00	0.63	0.37	0.44	0.11	0.0123	0.01006	0.00836	1.90	1.12	1.36	0.32	0.14	0.11	0.03	8.33	4.90	5.96	1.40	0.60	0.50	0.11
ENG11	CATERPILLAR G3516J COMPRESSOR ENGINE	8760	1380	0.008144	85.00	73.00	73.00	0.63	0.37	0.44	0.11	0.0123	0.01006	0.00836	1.90	1.12	1.36	0.32	0.14	0.11	0.03	8.33	4.90	5.96	1.40	0.60	0.50	0.11
ENG12	CATERPILLAR G3516J COMPRESSOR ENGINE	8760	1380	0.008144	85.00	73.00	73.00	0.63	0.37	0.44	0.11	0.0123	0.01006	0.00836	1.90	1.12	1.36	0.32	0.14	0.11	0.03	8.33	4.90	5.96	1.40	0.60	0.50	0.11
ENG13	CATERPILLAR G3306B COMPRESSOR ENGINE	8760	192	0.009397	N/A	N/A	N/A	0.63	2.00	0.44	0.24	0.0123	0.01006	0.00279	0.26	0.85	0.19	0.10	0.02	0.02	0.00	1.16	3.71	0.84	0.44	0.09	0.08	0.02

¹HHV is based on the Fuel Consumption Rate @ 100% Load from the Gas Engine Rating Pro Report

²The VOC emission factor (g/hp-hr) includes HCHO, 25% was added to NOx on all engines, 25% was added to VOC on 3516.

³SO₂ Emissions were calculated using the emission factor from Table 3.2-2. PM Emission Factor = 7.71E-05 lb/MMBTU + 7.71E-05 lb/MMBTU + 9.91E-03 lb/MMBTU = 0.01006 lb/MMBTU

⁴The VOC hourly rate includes formaldehyde and acetaldehyde.

Total Emissions Per Pollutant (TPY)	NOx	CO	VOC	HCHO	SO ₂	PM _{10 & 2.5}	Acetaldehyde
	189.09	205.46	139.37	22.25	20.06	16.46	3.70

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
COMPRESSOR ENGINES

Greenhouse Gas Emissions Calculations

					Engine Data g/hp-hr	40 CFR 98 Factors ² lb/MMBtu												
								lb/hr				tpy						
Source ID	Unit Description	Annual Hours	Rated HP	MMBtu/hp- hr ¹ (HHV)	CO2	CH ₄	N ₂ O	CO2	CH ₄	CH ₄ as CO2e	N ₂ O	N ₂ O as CO2e	CO2	CH ₄	CH ₄ as CO2e	N ₂ O	N ₂ O as CO2e	Total CO2e
ENG1	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	454	0.00221	0.00022	5004.41	0.0828	2.07	0.0083	2.47	21919.31	0.36	9.07	0.04	10.81	21939.20
ENG2	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	454	0.00221	0.00022	5004.41	0.0828	2.07	0.0083	2.47	21919.31	0.36	9.07	0.04	10.81	21939.20
ENG3	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	454	0.00221	0.00022	5004.41	0.0828	2.07	0.0083	2.47	21919.31	0.36	9.07	0.04	10.81	21939.20
ENG4	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	454	0.00221	0.00022	5004.41	0.0828	2.07	0.0083	2.47	21919.31	0.36	9.07	0.04	10.81	21939.20
ENG5	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	454	0.00221	0.00022	5004.41	0.0828	2.07	0.0083	2.47	21919.31	0.36	9.07	0.04	10.81	21939.20
ENG6	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	454	0.00221	0.00022	5004.41	0.0828	2.07	0.0083	2.47	21919.31	0.36	9.07	0.04	10.81	21939.20
ENG7	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	454	0.00221	0.00022	5004.41	0.0828	2.07	0.0083	2.47	21919.31	0.36	9.07	0.04	10.81	21939.20
ENG8	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	454	0.00221	0.00022	5004.41	0.0828	2.07	0.0083	2.47	21919.31	0.36	9.07	0.04	10.81	21939.20
ENG9	CATERPILLAR G3616 COMPRESSOR ENGINE	8760	5000	0.007514	454	0.00221	0.00022	5004.41	0.0828	2.07	0.0083	2.47	21919.31	0.36	9.07	0.04	10.81	21939.20
ENG10	CATERPILLAR G3516J COMPRESSOR ENGINE	8760	1380	0.008144	511	0.00221	0.00022	1554.63	0.0248	0.62	0.0025	0.74	6809.28	0.11	2.71	0.01	3.23	6815.23
ENG11	CATERPILLAR G3516J COMPRESSOR ENGINE	8760	1380	0.008144	511	0.00221	0.00022	1554.63	0.0248	0.62	0.0025	0.74	6809.28	0.11	2.71	0.01	3.23	6815.23
ENG12	CATERPILLAR G3516J COMPRESSOR ENGINE	8760	1380	0.008144	511	0.00221	0.00022	1554.63	0.0248	0.62	0.0025	0.74	6809.28	0.11	2.71	0.01	3.23	6815.23
ENG13	CATERPILLAR G3306B COMPRESSOR ENGINE	8760	192	0.009122	577	0.00221	0.00022	244.23	0.0039	0.10	0.0004	0.12	1069.74	0.02	0.42	0.00	0.50	1070.67

¹HHV is based on the Fuel Consumption Rate @ 75% Load from the Gas Engine Rating Pro Report

²Warming potential for CH₄ is 25. N₂O is 298.

Total Emissions (TPY)	Total CO2e
	218969.11

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
BURNER CALCULATIONS

CRITERIA & REGULATED POLLUTANTS

Source ID	Fuel Gas (BTU/SCF)	Operating Hours	Burner Rating (MMBTU/Hr)	AP-42 Factors lb/MMSCF (lb/MMBtu for SO ₂)					lb/hr					tpy				
				NO _x	CO	VOC	SO ₂	PM _{10 & 2.5}	NO _x	CO	VOC	SO ₂	PM _{10 & 2.5}	NO _x	CO	VOC	SO ₂	PM _{10 & 2.5}
HTR1	1165.1	8760	0.75	114	96	6.3	0.0123	8.7	0.14	0.12	0.01	0.01	0.01	0.60	0.50	0.03	0.04	0.05
HTR2	1165.1	8760	0.75	114	96	6.3	0.0123	8.7	0.14	0.12	0.01	0.01	0.01	0.60	0.50	0.03	0.04	0.05
HTR3	1165.1	8760	1.50	114	96	6.3	0.0123	8.7	0.27	0.23	0.02	0.02	0.02	1.20	1.01	0.07	0.08	0.09
RB1	1165.1	8760	3.00	114	96	6.3	0.0123	8.7	0.55	0.46	0.03	0.04	0.04	2.40	2.02	0.13	0.16	0.18
RB2	1165.1	8760	3.00	114	96	6.3	0.0123	8.7	0.55	0.46	0.03	0.04	0.04	2.40	2.02	0.13	0.16	0.18
RB3	1165.1	8760	3.00	114	96	6.3	0.0123	8.7	0.55	0.46	0.03	0.04	0.04	2.40	2.02	0.13	0.16	0.18

*Source: AP-42 Table 1.4-1, 1.4-2, & 1.4-3. SO₂ - 5 gr/100 scf

**Burners - 70% Efficiency

Total (tpy)	NO _x	CO	VOC	SO ₂ ¹	PM _{10 & 2.5}
	9.61	8.07	0.53	0.64	0.73

HAZARDOUS AIR POLLUTANTS (HAPs)

Source ID	Fuel Gas (BTU/SCF)	Operating Hours	Burner Rating (MMBTU/Hr)	AP-42 Factors lb/MMSCF					lb/hr					tpy				
				Benzene	Toluene	N-Hexane	HCHO	Dichloro benzene	Benzene	Toluene	N-Hexane	HCHO	Dichloro benzene	Benzene	Toluene	N-Hexane	HCHO	Dichloro benzene
HTR1	1165.1	8760	0.75	0.0021	0.0034	1.8	0.0750	0.0012	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
HTR2	1165.1	8760	0.75	0.0021	0.0034	1.8	0.0750	0.0012	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
HTR3	1165.1	8760	1.50	0.0021	0.0034	1.8	0.0750	0.0012	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
RB1	1165.1	8760	3.00	0.0021	0.0034	1.8	0.0750	0.0012	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.04	0.00	0.00
RB2	1165.1	8760	3.00	0.0021	0.0034	1.8	0.0750	0.0012	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.04	0.00	0.00
RB3	1165.1	8760	3.00	0.0021	0.0034	1.8	0.0750	0.0012	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.04	0.00	0.00

*Source: AP-42 Table 1.4-1, 1.4-2, & 1.4-3

**Burners - 70% Efficiency

Total Individual HAPS (tpy)	Benzene	Toluene	N-Hexane	HCHO	Dichloro benzene
	0.00	0.00	0.15	0.01	0.00

Total Combined HAPS (tpy)	0.16
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XTO ENERGY INC
LONGHORN COMPRESSOR STATION
HEATERS - EXHAUST STACK FLOW & FUEL CONSUMPTION RATES

Exhaust Stack and Fuel Consumption Data

Source Name	HTR1-2
Burner Rating (btu/hr)	750000
Heating Value (btu/scf)	1165
3" eclipse air mixer: (Air/Gas Ratio) ¹	5/1
Stack Temperature (°F)	1000
Stack Diameter (ft)	1.0
Stack Height (ft)	20
Fuel Consumption (scf/hr)	644
Fuel Consumption (scf/day)	15449
Fuel Consumption (mmscf/year)	5.639
Air Injection Rate (scf/hr)	6437.0
Total exhaust flow rate @ STP (scf/hr)	7080.7
Total exhaust flow rate @ STP (scf/sec)	2.0
Total exhaust flow rate @ 1000 °F (acf/hr)	19880.5
Total exhaust flow rate @ 1000 °F (acf/sec)	5.5
Exhaust Stack Exit Velocity @ STP (ft/sec)	2.504
Exhaust Stack Exit Velocity @ 1000 °F (ft/sec)	7.031

¹Air/Gas Ratio is based on the Manufacturer's Data of XTO's typical burner installations

XTO ENERGY INC
LONGHORN COMPRESSOR STATION
HEATERS - EXHAUST STACK FLOW & FUEL CONSUMPTION RATES

Exhaust Stack and Fuel Consumption Data

Source Name	HTR3
Burner Rating (btu/hr)	1500000
Heating Value (btu/scf)	1165
3" eclipse air mixer: (Air/Gas Ratio) ¹	5/1
Stack Temperature (°F)	1000
Stack Diameter (ft)	1.0
Stack Height (ft)	20
Fuel Consumption (scf/hr)	1287
Fuel Consumption (scf/day)	30898
Fuel Consumption (mmscf/year)	11.28
Air Injection Rate (scf/hr)	12874.02
Total exhaust flow rate @ STP (scf/hr)	14161.42
Total exhaust flow rate @ STP (scf/sec)	3.93
Total exhaust flow rate @ 1000 °F (acf/hr)	39760.92
Total exhaust flow rate @ 1000 °F (acf/sec)	11.04
Exhaust Stack Exit Velocity @ STP (ft/sec)	5.01
Exhaust Stack Exit Velocity @ 1000 °F (ft/sec)	14.06

¹Air/Gas Ratio is based on the Manufacturer's Data of XTO's typical burner installations

XTO ENERGY INC
LONGHORN COMPRESSOR STATION
HEATERS - EXHAUST STACK FLOW & FUEL CONSUMPTION RATES

Exhaust Stack and Fuel Consumption Data

Source Name	RB1-RB3
Burner Rating (btu/hr)	3000000
Heating Value (btu/scf)	1165
3" eclipse air mixer: (Air/Gas Ratio) ¹	5/1
Stack Temperature (°F)	1000
Stack Diameter (ft)	1.0
Stack Height (ft)	20
Fuel Consumption (scf/hr)	2575
Fuel Consumption (scf/day)	61795
Fuel Consumption (mmscf/year)	22.56
Air Injection Rate (scf/hr)	25748.04
Total exhaust flow rate @ STP (scf/hr)	28322.84
Total exhaust flow rate @ STP (scf/sec)	7.87
Total exhaust flow rate @ 1000 °F (acf/hr)	79521.83
Total exhaust flow rate @ 1000 °F (acf/sec)	22.09
Exhaust Stack Exit Velocity @ STP (ft/sec)	10.02
Exhaust Stack Exit Velocity @ 1000 °F (ft/sec)	28.13

¹Air/Gas Ratio is based on the Manufacturer's Data of XTO's typical burner installations

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
FL1/FL2/FL3 - UTILITY FLARES

Flare Emissions Summary Table

Stream Source	NOx		CO		Total VOC (Includes Total HAPs)		SO ₂		PM ₁₀ & 2.5		Total HAPs	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
FL1 Pilot	0.06	0.28	0.13	0.56	0.09	0.37	0.00	0.00	0.00	0.01	0.00	0.01
FL2 Pilot	0.06	0.28	0.13	0.56	0.09	0.37	0.00	0.00	0.00	0.01	0.00	0.01
FL3 Pilot	0.06	0.28	0.13	0.56	0.09	0.37	0.00	0.00	0.00	0.01	0.00	0.01
High Pressure Gas Flaring												
Inlet Gas Flaring	1550.24	7.75	3094.86	15.47	2721.44	13.61	0.00	0.00	69.67	0.35	119.18	0.60
Low Pressure Gas Flaring												
Captured Truck Loading Emissions (To Flare)	0.02	0.08	0.04	0.17	0.11	0.47	0.00	0.00	0.00	0.00	0.01	0.03
LPS Vapors Normal Operation	0.01	0.01	0.01	0.03	0.03	0.06	0.00	0.00	0.01	0.02	0.00	0.00
LPS Vapors VRU Downtime	0.30	0.65	0.59	1.30	1.34	2.94	0.00	0.00	0.01	0.02	0.11	0.24
Water Tank Vapors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Skim Tank Vapors					0.00	0.00					0.00	0.00
Oil Storage Tank Vapors	0.32	1.41	0.64	2.82	1.82	7.97	0.00	0.00	0.01	0.03	0.14	0.60
Total Pilot Emissions	0.19	0.85	0.39	1.69	0.26	1.12	0.00	0.00	0.01	0.04	0.00	0.02
Total Process Gas Emissions	1550.88	10.74	3096.13	21.45	2724.71	26.11	0.00	0.00	69.68	0.44	119.44	1.49
Total Emissions	1551.07	11.59	3096.52	23.13	2724.96	27.23	0.00	0.00	69.69	0.48	119.44	1.50

1 Gas can be routed to one or all flares.

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
INLET GAS FLARING

Total Gas Flared	220,000,000.0	SCF/Day
Total Gas Flared	91,666,667	SCF/Year
Duration	10	Hours/Year
Flared	Yes	(Yes/No)
Vented	No	(Yes/No)
Heating Value	1225	Btu/SCF (Gas Analysis)

Component	Estimated Quantity Emitted from the Flare (lb/day)	Total Estimated Quantity Emitted (lb/day)	Hourly Emission Rate (lb/hr)	Annualized Emission Rate (TPY)
CO2	31543963.570	31543963.570	1314331.82	6571.66
CH4	539.213	539.213	22.47	0.11
CH4 as CO2e	-	-	561.68	2.81
N2O	53.921	53.921	2.25	0.01
N2O as CO2e	-	-	669.52	3.35
CO	74276.598	74276.598	3094.86	15.47
NOx	37205.701	37205.701	1550.24	7.75
PM	1672.000	1672.000	69.67	0.35
VOCs	65314.478	65314.478	2721.44	13.61
HAPs	2860.368	2860.368	119.18	0.60
SO ₂	0.000	0.000	0.00	0.00
H ₂ S	0.000	0.000	0.00	0.00

Flare Emission Factors
NOx: 0.138
CO: 0.2755

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
FLARE PILOT & PURGE GAS EMISSIONS (FL1/FL2/FL3)

Pilot Fuel + Purge Gas	9600	SCF/Day (Per Flare)
Duration	8760	Hours/Year
Flared	Yes	(Yes/No)
Vented	No	(Yes/No)
Heating Value	1165	Btu/SCF (Gas Analysis)

Component	Estimated Quantity Emitted from the Flare (lb/day)	Total Estimated Quantity Emitted (lb/day)	Hourly Emission Rate (lb/hr)	Annualized Emission Rate (TPY)
CO ₂	1308.682	1308.682	54.53	238.83
CH ₄	0.022	0.022	0.00	0.00
CH ₄ as CO ₂ e	-	-	0.02	0.10
N ₂ O	0.002	0.002	0.00	0.00
N ₂ O as CO ₂ e	-	-	0.03	0.12
CO	3.082	3.082	0.13	0.56
NO _x	1.544	1.544	0.06	0.28
PM	0.073	0.073	0.00	0.01
VOCs	2.042	2.042	0.09	0.37
HAPs	0.029	0.029	0.00	0.01
SO ₂	0.000	0.000	0.00	0.00
H ₂ S	0.000	0.000	0.00	0.00

Flare Emission Factors

NO_x: 0.138

CO: 0.2755

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
LOW PRESSURE SEPARATOR GAS TO FLARE & VRU

Flaring of Gas from Low Pressure Separator

Uncontrolled Emission Rate ¹ (lb/hr)	Gas Volume to Flare - Normal Operations ¹ (SCF/Day)	Gas Volume to Flare - VRU Down (SCF/Day)
68.608	530.8	26539.7

VOC Emission Components	Uncontrolled Flash Vapors		Controlled Flash Vapors - Normal Operations		Controlled Flash Vapors - VRU Downtime - 100% Flared	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Carbon Dioxide	8.4001	36.7922	8.40	18.40	8.40	18.40
Hydrogen Sulfide	0.0000	0.0000	0.00	0.00	0.00	0.00
Nitrogen	0.1918	0.8400	0.00	0.00	0.00	0.01
Methane	15.7814	69.1227	0.01	0.01	0.32	0.69
Ethane	15.8037	69.2200	0.01	0.01	0.32	0.69
Propane	20.8631	91.3803	0.01	0.02	0.42	0.91
Iso-Butane	4.8540	21.2603	0.00	0.00	0.10	0.21
N-Butane	13.4346	58.8437	0.01	0.01	0.27	0.59
Iso-Pentane	4.9585	21.7182	0.00	0.00	0.10	0.22
N-Pentane	6.3624	27.8674	0.00	0.01	0.13	0.28
Cyclopentane	0.0000	0.0000	0.00	0.00	0.00	0.00
n-Hexane	2.9962	13.1233	0.00	0.00	0.06	0.13
Cyclohexane	1.1353	4.9728	0.00	0.00	0.02	0.05
i-Hexane	4.0310	17.6557	0.00	0.00	0.08	0.18
i-Heptane	4.6872	20.5300	0.00	0.00	0.09	0.21
Methylcyclohexane	1.0978	4.8083	0.00	0.00	0.02	0.05
2,2,4-Trimethylpentane	0.0000	0.0000	0.00	0.00	0.00	0.00
Benzene	0.6386	2.7972	0.00	0.00	0.01	0.03
Toluene	0.5354	2.3449	0.00	0.00	0.01	0.02
Ethylbenzene	0.0374	0.1638	0.00	0.00	0.00	0.00
Xylene	0.1008	0.4415	0.00	0.00	0.00	0.00
n-Octane	1.4036	6.1477	0.00	0.00	0.03	0.06
Triethylene Glycol	0.0000	0.0000	0.00	0.00	0.00	0.00
Water	1.4722	6.4481	0.00	0.00	0.03	0.06
VOC Stream Total	67.1359	294.0551	0.03	0.06	1.34	2.94

TOTAL EMISSIONS SUMMARY - CONTROLLED²

Emission Component	lb/hr	TPY ³	lb/hr	TPY ³
NMNEVOC (Includes TOTAL HAPs)	0.03	0.06	1.34	2.94
TOTAL HAPs	0.00	0.00	0.11	0.24

¹Uncontrolled emissions and gas volume are based on Promax Results.

²Controlled Emissions Were Calculated by the Following: Uncontrolled Emissions * (1 - VRU Efficiency) * (1 - Flare Destruction Efficiency)

Flare Reduction = 98% VRU Collection Efficiency = 98% VRU Downtime Hours = 4380

³Annual rates (tpy) calculated by multiplying hourly emission rate by 4380 during normal operation and by 4380 during VRU downtime.

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
LOW PRESSURE SEPARATOR GAS TO COMBUSTOR - PRODUCTS OF COMBUSTION

Flaring of Gas from Low Pressure Separator - Normal Operations

Total Gas Production	26540	SCF/Day
Amount Flared After VRU	531	SCF/Day
Duration	4380	Hours/Year
Flared	Yes	(Yes/No)
Heating Value	1947.0	BTU/SCF (Promax)

Component	Estimated Quantity Emitted from the Flare (lb/day)	Total Estimated Quantity Emitted (lb/day)	Hourly Emission Rate (lb/hr)	Annualized Emission Rate (TPY)
CO	0.285	0.285	0.01	0.03
NOx	0.143	0.143	0.01	0.01
SO ₂	0.000	0.000	0.00	0.00
H ₂ S	0.000	0.000	0.00	0.00
PM _{10 & 2.5}	0.202	0.202	0.01	0.02

¹ The CO and NOx emission factors (0.2755lb and 0.138/MMBtu) are based on TCEQ document RG-109, Basis for Emission Calculation from Flare Systems.

² Emissions are based on the following example calculation: SCF/day * 14.7 / 10.73 / 528 * VOC weight % * Gas MW

³ Emissions are based on the following example calculation: SCF/day * 14.7 / 10.73 / 528 * H₂S PPM * H₂S MW. SO₂ is calculated assuming MW ratio of 64.07:43.08.

⁴ PM_{10 & 2.5} emissions are based on AP-42, Section 1.4.

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
LOW PRESSURE SEPARATOR GAS TO COMBUSTOR - PRODUCTS OF COMBUSTION

Flaring of Gas from Low Pressure Separator - VRU Downtime

Total Gas Production	26540	SCF/Day
Amount Flared	26540	SCF/Day
Duration	4380	Hours/Year
Flared	Yes	(Yes/No)
Heating Value	1947.0	BTU/SCF (Promax)

Component	Estimated Quantity Emitted from the Flare (lb/day)	Total Estimated Quantity Emitted (lb/day)	Hourly Emission Rate (lb/hr)	Annualized Emission Rate (TPY)
CO	14.236	14.236	0.59	1.30
NO _x	7.131	7.131	0.30	0.65
SO ₂	0.004	0.004	0.00	0.00
H ₂ S	0.000	0.000	0.00	0.00
PM _{10 & 2.5}	0.202	0.202	0.01	0.02

¹ The CO and NO_x emission factors (0.2755lb and 0.138/MMBtu) are based on TCEQ document RG-109, Basis for Emission Calculation from Flare Systems.

² Emissions are based on the following example calculation: SCF/day * 14.7 / 10.73 / 528 * VOC weight % * Gas MW

³ Emissions are based on the following example calculation: SCF/day * 14.7 / 10.73 / 528 * H₂S PPM * H₂S MW. SO₂ is calculated assuming MW ratio of 64.07/32.06.

⁴ PM_{10 & 2.5} emissions are based on AP-42, Section 1.4.

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
STORAGE TANK EMISSIONS SUMMARY

VOC EMISSIONS SUMMARY

FIN	Unit Description	Tank Controlled (Yes/No)	Control Type	Material Throughput (bbls/day)	Material Type (Oil/Produced Water)	Working & Breathing Losses		Flash Losses		Total Emissions	
						Lb/hr	TPY	Lb/hr	TPY	Lb/hr	TPY
SKTK1/ SKTK2	Skim Tanks	Yes	Flare	450	WATER	0.00	0.00	-	-	0.00	0.00
OT1	Condensate Storage Tank	Yes	Flare	158	OIL	0.05	0.22	0.41	1.78	0.46	1.99
OT2	Condensate Storage Tank	Yes	Flare	158	OIL	0.05	0.22	0.41	1.78	0.46	1.99
OT3	Condensate Storage Tank	Yes	Flare	158	OIL	0.05	0.22	0.41	1.78	0.46	1.99
OT4	Condensate Storage Tank	Yes	Flare	158	OIL	0.05	0.22	0.41	1.78	0.46	1.99
WT1	Water Storage Tank	Yes	Flare	219	WATER	0.00	0.00	-	-	0.00	0.00
WT2	Water Storage Tank	Yes	Flare	219	WATER	0.00	0.00	-	-	0.00	0.00
Storage Tank Emissions						0.20	0.87	1.62	7.10	1.82	7.97

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
CONDENSATE TANK FLASH GAS ROUTED TO FLARE

Condensate Tank (OT1-OT4) Flash Emissions

Condensate Production	631	Barrels / Day
	26482	Gallons / Day

Uncontrolled Emission Rate ¹ (lb/hr)	Gas Volume ¹ (SCF/Day)	Production Rate (bb/Day)	Calculated GOR (SCF/BBL)
4.049	17921.4	630.5	28.42

VOC Emission Components	Uncontrolled Flash Vapors		Controlled Flash Vapors	
	lb/hr	TPY	lb/hr	TPY
Methane	2.9356	12.8580	0.06	0.26
Propane	21.3014	93.3002	0.43	1.87
Iso-Butane	5.7789	25.3118	0.12	0.51
N-Butane	16.6203	72.7967	0.33	1.46
Iso-Pentane	6.4363	28.1910	0.13	0.56
N-Pentane	8.3349	36.5070	0.17	0.73
Cyclopentane	0.0000	0.0000	0.00	0.00
n-Hexane	3.9844	17.4517	0.08	0.35
Cyclohexane	1.5472	6.7766	0.03	0.14
Hexane +	5.3514	23.4391	0.11	0.47
Heptanes	6.2170	27.2307	0.12	0.54
Methylcyclohexane	1.4692	6.4352	0.03	0.13
2,2,4-Trimethylpentane	0.0000	0.0000	0.00	0.00
Benzene	1.1909	5.2161	0.02	0.10
Toluene	0.8316	3.6424	0.02	0.07
Ethylbenzene	0.0508	0.2224	0.00	0.00
Xylenes	0.1377	0.6033	0.00	0.01
Octanes+	1.8381	8.0511	0.04	0.16
VOC Stream Total	81.0902	355.1752	1.62	7.10

TOTAL EMISSIONS SUMMARY - CONTROLLED²

Emission Component (All Tanks)	lb/hr	TPY ³
NMNEVOC (Includes TOTAL HAPs)	1.62	7.10
TOTAL HAPs	0.12	0.54
Emission Component (Per Tank)	lb/hr	TPY ³
NMNEVOC (Includes TOTAL HAPs)	0.41	1.78
TOTAL HAPs	0.03	0.14

¹Uncontrolled emissions and gas volume are based on Promax Results.

²Controlled Emissions Were Calculated by the Following: Uncontrolled Emissions * (1 - VRU Efficiency) * (1 - Flare Destruction Efficiency)

Flare Reduction = 98% VRU Collection Efficiency = 0%

³Annual rates (tpy) calculated by multiplying hourly emission rate by 8760.

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
CONDENSATE TANK WORKING & BREATHING ROUTED TO FLARE

Condensate Tank (OT1-OT4) Working & Breathing Emissions

Condensate Production	631	Barrels / Day
	26481.86472	Gallons / Day

Uncontrolled Emission Rate ¹ (lb/hr)	Gas Volume ¹ (SCF/Day)	Production Rate (bbl/Day)	Calculated GOR (SCF/BBL)
0.399	2128.0	630.5	3.38

VOC Emission Components	Uncontrolled W&B Vapors		Controlled W&B Vapors	
	lb/hr	TPY	lb/hr	TPY
Methane	0.0698	0.3058	0.0014	0.0061
Propane	2.8786	12.6085	0.0576	0.2522
Iso-Butane	0.7575	3.3177	0.0151	0.0664
N-Butane	2.2437	9.8276	0.0449	0.1966
Iso-Pentane	0.8220	3.6004	0.0164	0.0720
N-Pentane	1.0469	4.5855	0.0209	0.0917
Cyclopentane	0.0000	0.0000	0.0000	0.0000
n-Hexane	0.5178	2.2681	0.0104	0.0454
Cyclohexane	0.1657	0.7257	0.0033	0.0145
Hexane +	0.6824	2.9889	0.0136	0.0598
Heptanes	0.2236	0.9794	0.0045	0.0196
Methylcyclohexane	0.1768	0.7744	0.0035	0.0155
2,2,4-Trimethylpentane	0.0000	0.0000	0.0000	0.0000
Benzene	0.1030	0.4513	0.0021	0.0090
Toluene	0.0703	0.3080	0.0014	0.0062
Ethylbenzene	0.0045	0.0196	0.0001	0.0004
Xylenes	0.0097	0.0425	0.0002	0.0009
Octanes+	0.2115	0.9262	0.0042	0.0185
VOC Stream Total	9.9141	43.4237	0.1983	0.8685

TOTAL EMISSIONS SUMMARY - CONTROLLED²

Emission Component (All Tanks)	lb/hr	TPY ³
NMNEVOC (Includes TOTAL HAPs)	0.20	0.87
TOTAL HAPs	0.01	0.06
Emission Component (Per Tank)	lb/hr	TPY ³
NMNEVOC (Includes TOTAL HAPs)	0.05	0.22
TOTAL HAPs	0.00	0.02

¹Uncontrolled emissions and gas volume are based on Promax Results.

²Controlled Emissions Were Calculated by the Following: Uncontrolled Emissions * (1 - VRU Efficiency) * (1 - Flare Destruction Efficiency)

Flare Reduction = 98% VRU Collection Efficiency = 0%

³Annual rates (tpy) calculated by multiplying hourly emission rate by 8760.

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
CONDENSATE VAPORS ROUTED TO FLARE

Oil Tank Vapor Combustion Emissions

Total Gas Production	20049	SCF/Day (Includes flashing/W&B from tanks)
Duration	8760	Hours/Year
Flared	Yes	(Yes/No)
Heating Value	2797.6	BTU/SCF (Promax - Most conservative of flashing and W&B)

Component	Estimated Quantity Emitted from the Flare (lb/day)	Total Estimated Quantity Emitted (lb/day)	Hourly Emission Rate (lb/hr)	Annualized Emission Rate (TPY)
CO	15.453	15.453	0.64	2.82
NO _x	7.741	7.741	0.32	1.41
H ₂ S	0.354	0.354	0.01	0.06
SO ₂	0.000	0.000	0.00	0.00
PM _{10 & 2.5}	0.152	0.152	0.01	0.03

¹ The CO and NO_x emission factors (0.2755lb and 0.138/MMBtu) are based on TCEQ document RG-109, Basis for Emission Calculation from Flare Systems.

² Emissions are based on the following example calculation: SCF/day * 14.7 / 10.73 / 528 * VOC weight % * Gas MW

³ Emissions are based on the following example calculation: SCF/day * 14.7 / 10.73 / 528 * H₂S PPM * H₂S MW. SO₂ is calculated assuming MW ratio of 64.07:43.08.

⁴ PM 10 & 2.5 emissions are based on AP-42, Section 1.4.

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
SKIM TANK FLASH EMISSIONS ROUTED TO FLARE

Skim Tank Flashing VOC Emissions

Water Flow	450	Barrels / Day
	18905	Gallons / Day

Uncontrolled Emission Rate ¹ (lb/hr)	Gas Volume ¹ (SCF/Day)	Production Rate (bb/Day)	Calculated GOR (SCF/BBL)
0.029	34.8	450.1	0.08

VOC Emission Components	Uncontrolled Flash Vapors		Controlled Flash Vapors	
	lb/hr	TPY	lb/hr	TPY
Methane	0.0189	0.0829	0.0004	0.0017
Propane	0.0158	0.0694	0.0003	0.0014
Iso-Butane	0.0027	0.0117	0.0001	0.0002
N-Butane	0.0117	0.0512	0.0002	0.0010
Iso-Pentane	0.0055	0.0243	0.0001	0.0005
N-Pentane	0.0084	0.0370	0.0002	0.0007
Cyclopentane	0.0000	0.0000	0.0000	0.0000
n-Hexane	0.0036	0.0156	0.0001	0.0003
Cyclohexane	0.0046	0.0203	0.0001	0.0004
Hexane +	0.0051	0.0221	0.0001	0.0004
Heptanes	0.0042	0.0186	0.0001	0.0004
Methylcyclohexane	0.0022	0.0096	0.0000	0.0002
2,2,4-Trimethylpentane	0.0000	0.0000	0.0000	0.0000
Benzene	0.0207	0.0908	0.0004	0.0018
Toluene	0.0078	0.0340	0.0002	0.0007
Ethylbenzene	0.0001	0.0005	0.0000	0.0000
Xylenes	0.0004	0.0019	0.0000	0.0000
Octanes+	0.0004	0.0016	0.0000	0.0000
VOC Stream Total	0.0933	0.4085	0.0012	0.0050

TOTAL EMISSIONS SUMMARY - CONTROLLED²

Emission Component (All Tanks)	lb/hr	TPY ³
NMNEVOC (Includes TOTAL HAPs)	0.00	0.01
TOTAL HAPs	0.00	0.00
Emission Component (Per Tank)	lb/hr	TPY ³
NMNEVOC (Includes TOTAL HAPs)	0.00	0.01
TOTAL HAPs	0.00	0.00

¹Uncontrolled emissions and gas volume are based on Promax Results.

²Controlled Emissions Were Calculated by the Following: Uncontrolled Emissions * (1 - VRU Efficiency) * (1 - Flare Destruction Efficiency)

Flare Reduction = 98% VRU Collection Efficiency = 0%

³Annual rates (tpy) calculated by multiplying hourly emission rate by 8760.

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
SKIM TANK WORKING & BREATHING ROUTED TO FLARE

Skim Tank Working and Breathing Emissions

Water Flow	450	Barrels / Day
	18905	Gallons / Day

Uncontrolled Emission Rate ¹ (lb/hr)	Gas Volume ¹ (SCF/Day)	Production Rate (bb/Day)	Calculated GOR (SCF/BBL)
0.003	48.5	450.1	0.11

VOC Emission Components	Uncontrolled W&B Vapors		Controlled W&B Vapors	
	lb/hr	TPY	lb/hr	TPY
Methane	0.0006	0.0027	0.0000	0.0001
Propane	0.0015	0.0066	0.0000	0.0001
Iso-Butane	0.0002	0.0010	0.0000	0.0000
N-Butane	0.0011	0.0047	0.0000	0.0001
Iso-Pentane	0.0005	0.0021	0.0000	0.0000
N-Pentane	0.0007	0.0031	0.0000	0.0001
Cyclopentane	0.0000	0.0000	0.0000	0.0000
n-Hexane	0.0003	0.0013	0.0000	0.0000
Cyclohexane	0.0004	0.0017	0.0000	0.0000
Hexane +	0.0004	0.0018	0.0000	0.0000
Heptanes	0.0001	0.0004	0.0000	0.0000
Methylcyclohexane	0.0002	0.0009	0.0000	0.0000
2,2,4-Trimethylpentane	0.0000	0.0000	0.0000	0.0000
Benzene	0.0022	0.0098	0.0000	0.0002
Toluene	0.0008	0.0034	0.0000	0.0001
Ethylbenzene	0.0000	0.0001	0.0000	0.0000
Xylenes	0.0000	0.0001	0.0000	0.0000
Octanes+	0.0000	0.0001	0.0000	0.0000
VOC Stream Total	0.0085	0.0371	0.0001	0.0005

TOTAL EMISSIONS SUMMARY - CONTROLLED²

Emission Component (All Tanks)	lb/hr	TPY ³
NMNEVOC (Includes TOTAL HAPs)	0.00	0.00
TOTAL HAPs	0.00	0.00
Emission Component (Per Tank)	lb/hr	TPY ³
NMNEVOC (Includes TOTAL HAPs)	0.00	0.00
TOTAL HAPs	0.00	0.00

¹Uncontrolled emissions and gas volume are based on Promax Results.

²Controlled Emissions Were Calculated by the Following: Uncontrolled Emissions * (1 - VRU Efficiency) * (1 - Flare Destruction Efficiency)

Flare Reduction = 98% VRU Collection Efficiency = 0%

³Annual rates (tpy) calculated by multiplying hourly emission rate by 8760.

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
WATER TANK WORKING & BREATHING ROUTED TO FLARE

Water Tank Working and Breathing Emissions

Water Flow	438	Barrels / Day
	18377	Gallons / Day

Uncontrolled Emission Rate ¹ (lb/hr)	Gas Volume ¹ (SCF/Day)	Production Rate (bb/Day)	Calculated GOR (SCF/BBL)
0.000	51.5	437.5	0.12

VOC Emission Components	Uncontrolled W&B Vapors		Controlled W&B Vapors	
	lb/hr	TPY	lb/hr	TPY
Methane	0.0005	0.0021	0.0000	0.0000
Propane	0.0001	0.0004	0.0000	0.0000
Iso-Butane	0.0000	0.0000	0.0000	0.0000
N-Butane	0.0000	0.0001	0.0000	0.0000
Iso-Pentane	0.0000	0.0000	0.0000	0.0000
N-Pentane	0.0000	0.0000	0.0000	0.0000
Cyclopentane	0.0000	0.0000	0.0000	0.0000
n-Hexane	0.0000	0.0000	0.0000	0.0000
Cyclohexane	0.0000	0.0000	0.0000	0.0000
Hexane +	0.0000	0.0000	0.0000	0.0000
Heptanes	0.0000	0.0000	0.0000	0.0000
Methylcyclohexane	0.0000	0.0000	0.0000	0.0000
2,2,4-Trimethylpentane	0.0000	0.0000	0.0000	0.0000
Benzene	0.0002	0.0010	0.0000	0.0000
Toluene	0.0000	0.0001	0.0000	0.0000
Ethylbenzene	0.0000	0.0000	0.0000	0.0000
Xylenes	0.0000	0.0000	0.0000	0.0000
Octanes+	0.0000	0.0000	0.0000	0.0000
VOC Stream Total	0.0004	0.0016	0.0000	0.0000

TOTAL EMISSIONS SUMMARY - CONTROLLED²

Emission Component (All Tanks)	lb/hr	TPY ³
NMNEVOC (Includes TOTAL HAPs)	0.00	0.00
TOTAL HAPs	0.00	0.00
Emission Component (Per Tank)	lb/hr	TPY ³
NMNEVOC (Includes TOTAL HAPs)	0.00	0.00
TOTAL HAPs	0.00	0.00

¹Uncontrolled emissions and gas volume are based on Promax Results.

²Controlled Emissions Were Calculated by the Following: Uncontrolled Emissions * (1 - VRU Efficiency) * (1 - Flare Destruction Efficiency)

Flare Reduction = 98% VRU Collection Efficiency = 0%

³Annual rates (tpy) calculated by multiplying hourly emission rate by 8760.

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
SKIM/WATER TANK VAPORS ROUTED TO FLARE

Skim/Water Tank Vapor Combustion Emissions

Total Gas Production	135	SCF/Day (Includes skim tank and flashing/W&B from tanks)
Duration	8760	Hours/Year
Flared	Yes	(Yes/No)
Heating Value	156.9	BTU/SCF (Promax - Most conservative of flashing and W&B)

Component	Estimated Quantity Emitted from the Flare (lb/day)	Total Estimated Quantity Emitted (lb/day)	Hourly Emission Rate (lb/hr)	Annualized Emission Rate (TPY)
CO	0.006	0.006	0.00	0.00
NOx	0.003	0.003	0.00	0.00
H ₂ S	0.000	0.000	0.00	0.00
SO ₂	0.000	0.000	0.00	0.00
PM _{10 & 2.5}	0.001	0.001	0.00	0.00

Flare Emission Factors

NOx: 0.138

CO: 0.2755

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
OIL TRUCK LOADING LOSSES - CONTROLLED

Truck Loading Losses Calculations

Condensate Production	631	bbls / Day
Operating Schedule	365	Day / Year
Total Production	230140	bbls / Year

Promax Report Results

$$LL = 12.46 * SPM/T * (1-EFF/100)$$

Saturation Factor (S) =	0.6
Average True Vapor Pressure of liquid loaded (P) ¹ =	10.02
Average Temperature of bulk liquid loaded in Rankin (T) ¹ =	545.87
Max True Vapor Pressure of liquid loaded (P) ¹ =	11.59
Max Temperature of bulk liquid loaded in Rankin (T) ¹ =	556.69
Molecular Weight (M) ¹ =	51.27
Collection Efficiency ² =	98.7
Average Controlled LL (lb Total HC / bbl Throughput) =	0.0038
Average Controlled LL (lb VOC / bbl Throughput) =	0.0033
Max Controlled LL (lb Total HC / bbl Throughput) =	0.0044
Max Controlled LL (lb VOC / bbl Throughput) =	0.0037
Estimated Throughput (bbls/Year) =	230140
Estimated Throughput (Gallons/Year) =	9665881
Truck Loading Rate (bbls/hour) =	210

Total VOC Emissions	lb/hr	TPY
	0.78	0.38

¹ Based on PROMAX Results

² Based on DOT Oil Trucks at a collection efficiency of 98.7%. Controlled emissions at 98% flare efficiency are shown on the LP Flare Truck Loading page. Emissions here include only those emitted as a result of incomplete collection.

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
TRUCK LOADING EMISSIONS ROUTED TO FLARE

Truck Loading VOC and Combustion Emissions at Flare

Component	Oil Loading (Captured Vapors) ¹			Flare	
	Mole %	Weight %	lb/hr	lb/hr	TPY
Carbon Dioxide	3.574	3.068	0.200	0.200	0.877
Hydrogen Sulfide	0.000	0.000	0.000	0.000	0.000
Nitrogen	0.001	0.000	0.000	0.000	0.000
Methane	1.863	0.583	0.038	0.001	0.003
Ethane	23.166	13.587	0.886	0.018	0.078
Propane	27.939	24.031	1.568	0.031	0.137
Isobutane	5.578	6.323	0.413	0.008	0.036
n-Butane	16.522	18.730	1.222	0.024	0.107
Isopentane	4.876	6.862	0.448	0.009	0.039
n-Pentane	6.210	8.739	0.570	0.011	0.050
Cyclopentane	0.000	0.000	0.000	0.000	0.000
n-Hexane	2.572	4.323	0.282	0.006	0.025
Cyclohexane	0.843	1.383	0.090	0.002	0.008
i-C6	3.389	5.696	0.372	0.007	0.033
iC7	0.955	1.867	0.122	0.002	0.011
Methylcyclohexane	0.771	1.476	0.096	0.002	0.008
2,2,4-Trimethylpentane	0.000	0.000	0.000	0.000	0.000
Benzene	0.565	0.860	0.056	0.001	0.005
Toluene	0.327	0.587	0.038	0.001	0.003
Ethylbenzene	0.018	0.037	0.002	0.000	0.000
o-Xylene	0.039	0.081	0.005	0.000	0.000
Octane	0.792	1.765	0.115	0.002	0.010
Triethylene Glycol	0.000	0.000	0.000	0.000	0.000

Stream Total	6.52	0.33	1.43
VOC Total	5.40	0.11	0.47
HAP Total	0.38	0.01	0.03

Annual Hours (hrs)	8760	Molecular Weight	51
Heating Value of Vapor (Btu/scf)	2798	Volumetric Flow (scf/hr)	48.92
Vapor Balance Loading Capture (%)	98.70%	Heat Released (MMBtu/hr)	0.137
Destruction Efficiency of Flare (%)	98%		

Criteria Pollutant Emissions from Flare ²				
Component	Emission Rate	Emission Rate	Emission Factor	Emission Factor Units
	(lb/hr)	(TPY)		
NO _x	0.02	0.08	0.138	lb/MMBtu
CO	0.04	0.17	0.2755	lb/MMBtu
SO ₂	0.00	0.00	--	--
PM ₁₀	0.00	0.00	7.60	lb/MMscf
PM _{2.5}	0.00	0.00	7.60	lb/MMscf
H ₂ S	0.00	0.00	--	--

¹ Oil Loading vapors properties determined from ProMax

² Flare CO and NOx emission factors from TCEQ Air Permit Technical Guidance for Chemical Sources. PM and PM2.5 emission factors from AP-42, Table 1.4-1 and 1.4-2, July 1998. SO2 emissions assume 100% conversion of H2S to SO2.

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
WATER TRUCK LOADING LOSSES - UNCONTROLLED

Truck Loading Losses Calculations

Water Production	438	bbls / Day
Operating Schedule	365	Day / Year
Total Production	159703	bbls / Year

Promax Report Results

Control Efficiency (0) and Collection Efficiency (0)

Estimated Throughput (bbls/Year) = 159703

Estimated Throughput (Gallons/Year) = 6707507

Truck Loading Rate (bbls/hour) = 210

Total VOC Emissions	lb/hr	TPY
	0.004	0.002

¹Data obtained from Promax

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
DEHYDRATOR VAPORS ROUTED TO VAPOR COMBUSTOR

Dehydrator Vapor Combustion Emissions

Stream Source	NOx		CO		Total VOC		SO ₂		PM _{10 & 2.5}		Total HAPs	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Pilot	0.03	0.14	0.06	0.28	0.04	0.19	0.00	0.00	0.00	0.01	0.00	0.00
DEHY1 Vapors	0.10	0.43	0.20	0.86	0.63	2.77	0.00	0.00	0.00	0.01	0.25	1.09
DEHY2 Vapors	0.10	0.43	0.20	0.86	0.63	2.77	0.00	0.00	0.00	0.01	0.25	1.09
DEHY3 Vapors	0.10	0.43	0.20	0.86	0.63	2.77	0.00	0.00	0.00	0.01	0.25	1.09
Total Pilot Emissions	0.03	0.14	0.06	0.28	0.04	0.19	0.00	0.00	0.00	0.01	0.00	0.00
Total Emissions	0.30	1.30	0.59	2.59	1.90	8.32	0.00	0.00	0.01	0.04	0.75	3.26
Total Emissions	0.33	1.44	0.65	2.87	1.94	8.50	0.00	0.00	0.01	0.04	0.75	3.27

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
VAPOR COMBUSTOR PILOT GAS EMISSIONS (VC1)

Pilot Fuel + Purge Gas	4800	SCF/Day
Duration	8760	Hours/Year
Flared	Yes	(Yes/No)
Vented	No	(Yes/No)
Heating Value	1165.1	Btu/SCF (Gas Analysis)

Component	Estimated Quantity Emitted from the Flare (lb/day)	Total Estimated Quantity Emitted (lb/day)	Hourly Emission Rate (lb/hr)	Annualized Emission Rate (TPY)
CO2	654.341	654.341	27.26	119.42
CH4	0.011	0.011	0.00	0.00
CH4 as CO2e	-	-	0.01	0.05
N2O	0.001	0.001	0.00	0.00
N2O as CO2e	-	-	0.01	0.06
CO	1.541	1.541	0.06	0.28
NOx	0.772	0.772	0.03	0.14
PM	0.036	0.036	0.00	0.01
VOCs	1.021	1.021	0.04	0.19
HAPs	0.015	0.015	0.00	0.00
SO ₂	0.000	0.000	0.00	0.00
H ₂ S	0.000	0.000	0.00	0.00

Flare Emission Factors

NOx: 0.138
CO: 0.2755

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
TEG DEHYDRATOR EMISSIONS

VOC/HAP Emissions Per Dehydration Unit (DEHY1 - DEHY3)

Emission Component	Still Column Emissions (Uncontrolled - Condenser & Regenerator)		Flash Tank Emissions (Closed Loop - Inlet)		Total Combined Dehy Emissions (Uncontrolled)	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Methane	1.1475	5.0260	0.0000	0.0000	1.147	5.026
Propane	4.2509	18.6192	0.0000	0.0000	4.251	18.619
Iso-Butane	0.7984	3.4968	0.0000	0.0000	0.798	3.497
N-Butane	3.6506	15.9896	0.0000	0.0000	3.651	15.990
Iso-Pentane	1.8294	8.0129	0.0000	0.0000	1.829	8.013
N-Pentane	2.8355	12.4195	0.0000	0.0000	2.836	12.420
Cyclopentane	0.0000	0.0000	0.0000	0.0000	0.000	0.000
n-Hexane	1.2595	5.5168	0.0000	0.0000	1.260	5.517
Cyclohexane	1.6412	7.1886	0.0000	0.0000	1.641	7.189
Hexane +	1.7433	7.6355	0.0000	0.0000	1.743	7.636
Heptanes	1.5332	6.7153	0.0000	0.0000	1.533	6.715
Methylcyclohexane	0.8019	3.5125	0.0000	0.0000	0.802	3.513
2,2,4-Trimethylpentane	0.0000	0.0000	0.0000	0.0000	0.000	0.000
Benzene	8.0038	35.0568	0.0000	0.0000	8.004	35.057
Toluene	2.9442	12.8955	0.0000	0.0000	2.944	12.896
Ethylbenzene	0.0455	0.1994	0.0000	0.0000	0.046	0.199
Xylenes	0.1670	0.7314	0.0000	0.0000	0.167	0.731
Octanes+	0.1460	0.6396	0.0000	0.0000	0.146	0.640

UNCONTROLLED EMISSIONS SUMMARY

Emissions Component	lb/hr	TPY
NMNEVOC (Includes TOTAL HAPs)	31.65	138.63
TOTAL HAPs	12.42	54.40

CONTROLLED EMISSIONS SUMMARY

Emissions Component	lb/hr	TPY
NMNEVOC (Includes TOTAL HAPs)	0.63	2.77
TOTAL HAPs	0.25	1.09

HAP Emissions Components	lb/hr	TPY
Benzene	0.16	0.70
Toluene	0.06	0.26
N-Hexane	0.03	0.11

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
UNCONDENSED DEHYDRATOR VAPORS ROUTED TO COMBUSTOR

Combustion Emissions Per Dehydration Unit (DEHY1-DEHY3)

Total Gas Production	9028.1	SCF/Day
Duration	8760	Hours/Year
Flared	Yes	(Yes/No)
Heating Value	1899.3	BTU/SCF (Condenser Vapors)

Component	Estimated Quantity Emitted from the Flare (lb/day)	Total Estimated Quantity Emitted (lb/day)	Hourly Emission Rate (lb/hr)	Annualized Emission Rate (TPY)
CO	4.724	4.724	0.20	0.86
NOx	2.366	2.366	0.10	0.43
SO ₂	0.002	0.002	0.00	0.00
H ₂ S	0.000	0.000	0.00	0.00
PM _{10 & 2.5}	0.069	0.069	0.00	0.01

Flare Emission Factors

NOx: 0.138
CO: 0.2755

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
ROAD EMISSIONS

Total Suspended Particle Emissions $E = k(s/12)^a (W/3)^b$	
a	0.7
b	0.45
k	4.9
Silt %	4.8
Vehicle Weight (tons)	28
E (lbs/VMT)	7.05
Rain Days	70
E-Annual (lbs/VMT)	5.70
Truckloads per year	1856
Driving Distance Per Load (ft)	1000
Annual Distance (miles)	352
Control Efficiency - 15 MPH Limit	0.44
Emissions (lbs/hr)	0.60
Emissions (tpy)	0.56

PM ₁₀ Emissions $E = k(s/12)^a (W/3)^b$	
a	0.9
b	0.45
k	1.5
Silt %	4.8
Vehicle Weight (tons)	28
E (lbs/VMT)	1.80
Rain Days	70
E-Annual (lbs/VMT)	1.45
Truckloads per day	1856
Driving Distance Per Load (ft)	1000
Annual Distance (miles)	352
Control Efficiency - 15 MPH Limit	0.44
Emissions (lbs/hr)	0.15
Emissions (tpy)	0.14

PM _{2.5} Emissions $E = k(s/12)^a (W/3)^b$	
a	0.9
b	0.45
k	0.15
Silt %	4.8
Vehicle Weight (tons)	28
E (lbs/VMT)	0.18
Rain Days	70
E-Annual (lbs/VMT)	0.15
Truckloads per day	1856
Driving Distance Per Load (ft)	1000
Annual Distance (miles)	352
Control Efficiency - 15 MPH Limit	0.44
Emissions (lbs/hr)	0.02
Emissions (tpy)	0.01

Emissions (lbs/hr) = Driving Distance (ft) / 5280 * E (lbs/VMT)
Emissions (tpy) = Annual Distance * E / 2000

References:

EPA. "Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources," Section 13.2.2
AP-42, Office of Air Quality Planning and Standards, Research Triangle Park, NC. 5th edition (11/2006).

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
FUGITIVE EMISSIONS - VOCs

Component Type	Service	Estimated Components Count	Hours	Factors	Total VOC Weight %	Emissions		
						lb/hour	lb/year	tons/year
Valves	Gas/Vapor	193	8760	0.00992070	24.59%	0.47	4123.58	2.06
	Light Oil	132	8760	0.00550000	99.39%	0.72	6320.77	3.16
	Heavy Oil		8760	0.00001900	99.39%	0.00	0.00	0.00
	Water/Light Oil	104	8760	0.00021600	99.39%	0.02	195.58	0.10
Pump Seals	Gas/Vapor		8760	0.00529000	24.59%	0.00	0.00	0.00
	Light Oil	10	8760	0.02866000	99.39%	0.28	2495.23	1.25
	Heavy Oil		8760	0.00113000	99.39%	0.00	0.00	0.00
	Water/Light Oil	10	8760	0.00005300	99.39%	0.00	4.61	0.00
Connectors	Gas/Vapor	386	8760	0.00044000	24.59%	0.04	365.78	0.18
	Light Oil	264	8760	0.00046300	99.39%	0.12	1064.19	0.53
	Heavy Oil		8760	0.00001700	99.39%	0.00	0.00	0.00
	Water/Light Oil	208	8760	0.00024300	99.39%	0.05	440.05	0.22
Flanges	Gas/Vapor	193	8760	0.00086000	24.59%	0.04	357.46	0.18
	Light Oil	132	8760	0.00024300	99.39%	0.03	279.26	0.14
	Heavy Oil	0	8760	0.00000086	99.39%	0.00	0.00	0.00
	Water/Light Oil	104	8760	0.00000620	99.39%	0.00	5.61	0.00
Open-ended Lines	Gas/Vapor	20	8760	0.00441000	24.59%	0.02	189.95	0.09
	Light Oil		8760	0.00309000	99.39%	0.00	0.00	0.00
	Heavy Oil		8760	0.00030900	99.39%	0.00	0.00	0.00
	Water/Light Oil		8760	0.00055000	99.39%	0.00	0.00	0.00
Other:	Gas/Vapor	10	8760	0.01940000	24.59%	0.05	417.81	0.21
	Light Oil		8760	0.01650000	99.39%	0.00	0.00	0.00
	Heavy Oil		8760	0.00006800	99.39%	0.00	0.00	0.00
	Water/Light Oil	5	8760	0.03090000	99.39%	0.15	1345.12	0.67

Emission Component	lb/hr	lb/year	TPY
Total VOC	2.01	17605.01	8.80

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
FUGITIVE EMISSIONS - HAPs

Component Type	Service	Estimated Components Count	Hours	Factors	Total HAPs Weight %	Emissions		
						lb/hour	lb/year	tons/year
Valves	Gas/Vapor	193	8760	0.00992000	1.08%	0.021	180.965	0.090
	Light Oil	132	8760	0.00550000	4.93%	0.036	313.218	0.157
	Heavy Oil	0	8760	0.00001900	4.93%	0.000	0.000	0.000
	Water/Light Oil	104	8760	0.00021600	4.93%	0.001	9.692	0.005
Pump Seals	Gas/Vapor	0	8760	0.00529000	1.08%	0.000	0.000	0.000
	Light Oil	10	8760	0.02866000	4.93%	0.014	123.648	0.062
	Heavy Oil	0	8760	0.00113000	4.93%	0.000	0.000	0.000
	Water/Light Oil	10	8760	0.00005300	4.93%	0.000	0.229	0.000
Connectors	Gas/Vapor	386	8760	0.00044000	1.08%	0.002	16.053	0.008
	Light Oil	264	8760	0.00046300	4.93%	0.006	52.735	0.026
	Heavy Oil	0	8760	0.00001700	4.93%	0.000	0.000	0.000
	Water/Light Oil	208	8760	0.00024300	4.93%	0.002	21.806	0.011
Flanges	Gas/Vapor	193	8760	0.00086000	1.08%	0.002	15.688	0.008
	Light Oil	132	8760	0.00024300	4.93%	0.002	13.839	0.007
	Heavy Oil	0	8760	0.00000086	4.93%	0.000	0.000	0.000
	Water/Light Oil	104	8760	0.00000620	4.93%	0.000	0.278	0.000
Open-ended Lines	Gas/Vapor	20	8760	0.00441000	1.08%	0.001	8.337	0.004
	Light Oil	0	8760	0.00309000	4.93%	0.000	0.000	0.000
	Heavy Oil	0	8760	0.00030900	4.93%	0.000	0.000	0.000
	Water/Light Oil	0	8760	0.00055000	4.93%	0.000	0.000	0.000
Other:	Gas/Vapor	10	8760	0.01940000	1.08%	0.002	18.337	0.009
	Light Oil	0	8760	0.01650000	4.93%	0.000	0.000	0.000
	Heavy Oil	0	8760	0.00006800	4.93%	0.000	0.000	0.000
	Water/Light Oil	5	8760	0.03090000	4.93%	0.008	66.656	0.033

Emission Component	lb/hr	lb/year	TPY
Total HAPs	0.10	841.48	0.42

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
LOW PRESSURE SEPARATOR GAS COMBUSTION (VC1) - GHG EMISSIONS SUMMARY

Flare Emissions Summary Table - Normal Operations

$$1) E_{a,CH_4} = V_a * X_{CH_4} * [(1 - \eta) * Z_L + Z_U] = 65,403.84 \text{ SCF/Yr}$$

$$V_a = 9,686,989.96$$

$$X_{CH_4} = 0.337585993$$

$$N = 0.98$$

$$Z_L = 1.00$$

$$Z_U = 0.00$$

$$2) E_{a,CO_2} (\text{uncombusted}) = V_a * X_{CO_2} = 634,502.25 \text{ SCF/Yr}$$

$$V_a = 9,686,989.96$$

$$X_{CO_2} = 0.0655$$

$$3) E_{a,CO_2} (\text{combusted}) = \sum (\eta * V_a * Y_j * R_j * Z_L)$$

$$N = 0.98$$

$$V_a = 9,686,989.96$$

$$R_j =$$

$$E_{a,CO_2} =$$

$$Y_j = \text{Methane} \quad 0.3376 \quad 1 \quad 3,204,788.28$$

$$\text{Ethane} \quad 0.1804 \quad 2 \quad 3,424,456.36$$

$$\text{Propane} \quad 0.1624 \quad 3 \quad 4,624,105.96$$

$$\text{Butane} \quad 0.1080 \quad 4 \quad 4,100,361.10$$

$$\text{Pentane} + \quad 0.0922 \quad 5 \quad 4,377,723.18$$

$$Z_L = 1.00 \quad 19,731,434.87 \text{ SCF/Yr}$$

$$3) E_{s,n} = \frac{E_{a,n} * (459.67 + T_a) * P_a}{(459.67 + T_s) * P_s}$$

$$E_{a,n}(CH_4) = 65,403.84 = 58,876.99 \text{ SCF/Yr}$$

$$E_{a,n}(CO_2) = 20,365,937.12 = 18,333,558.24 \text{ SCF/Yr}$$

$$T_s = 60^\circ \text{ F}$$

$$T_a = 93.7^\circ \text{ F} \quad \text{Roswell, AP-42}$$

$$P_s = 13.28$$

$$P_a = 12.73 \quad \text{Roswell, AP-42}$$

$$4) \text{Mass}_{s,i} = E_{s,i} * \rho_i * 10^3$$

$$E_{s,i}(\text{CH}_4) = 58,876.99$$

$$E_{s,i}(\text{CO}_2) = 18,333,558.24$$

$$p_i(\text{CH}_4) = 0.0192 \text{ kg/ft}^3 = 1.13 \text{ metric tons}$$

$$p_i(\text{CO}_2) = 0.0526 \text{ kg/ft}^3 = 964.35 \text{ metric tons}$$

$$5) \text{CO}_2\text{e} = \text{CO}_2 + (\text{CH}_4 \times \text{GWP}) \quad \text{short tons} \quad \text{CO}_2\text{e}$$

$$\text{CO}_2 = 964.35 = 1063.01 \quad 1063.01$$

$$\text{CH}_4 = 1.13 = 1.25 \quad 31.15$$

$$\text{CH}_4 \text{ GWP} = 25 \quad 1094.16$$

Source	Annual Volume
LPS - Normal	9686989.96
	9686989.96

* V_a is the sum of gas routed to the flare from the low pressure separator.

XTO ENERGY INC.

LONGHORN COMPRESSOR STATION

TANK GAS COMBUSTION (FL1/FL2/FL3) - GHG EMISSIONS SUMMARY

Flare Emissions Summary Table - Normal Operations

$$1) E_{a,CH_4} = V_a * X_{CH_4} * [(1-\eta) * Z_L + Z_U] = 4,386.13 \text{ SCF/Yr}$$

$$V_a = 7,367,244.44$$

$$X_{CH_4} = 0.029767779$$

$$N = 0.98$$

$$Z_L = 1.00$$

$$Z_U = 0.00$$

$$2) E_{a,CO_2} (\text{uncombusted}) = V_a * X_{CO_2} = 8,337.34 \text{ SCF/Yr}$$

$$V_a = 7,367,244.44$$

$$X_{CO_2} = 0.0011$$

$$3) E_{a,CO_2} (\text{combusted}) = \Sigma (\eta * V_a * Y_j * R_j * Z_L)$$

$$N = 0.98$$

$$V_a = 7,367,244.44$$

$$R_j =$$

$$E_{a,CO_2} =$$

$$Y_j = \text{Methane} \quad 0.0298 \quad 1 \quad 214,920.38$$

$$\text{Ethane} \quad 0.1047 \quad 2 \quad 1,511,572.23$$

$$\text{Propane} \quad 0.2160 \quad 3 \quad 4,678,517.20$$

$$\text{Butane} \quad 0.0586 \quad 4 \quad 1,692,339.64$$

$$\text{Pentane +} \quad 0.3791 \quad 5 \quad 13,686,728.77$$

$$Z_L = 1.00 \quad 21,784,078.23 \quad \text{SCF/Yr}$$

$$3) E_{s,n} = \frac{E_{a,n} * (459.67 + T_a) * P_a}{(459.67 + T_a) * P_s}$$

$$E_{a,n}(\text{CH}_4) = 4,386.13 = 3,948.42 \text{ SCF/Yr}$$

$$E_{a,n}(\text{CO}_2) = 21,792,415.57 = 19,617,684.06 \text{ SCF/Yr}$$

$$T_s = 60^\circ \text{ F}$$

$$T_a = 93.7^\circ \text{ F} \quad \text{Roswell, AP-42}$$

$$P_s = 13.28$$

$$P_a = 12.73 \quad \text{Roswell, AP-42}$$

$$4) \text{Mass}_{s,i} = E_{s,i} * \rho_i * 10^3$$

$$E_{s,i}(\text{CH}_4) = 3,948.42$$

$$E_{s,i}(\text{CO}_2) = 19,617,684.06$$

$$p_i(\text{CH}_4) = 0.0192 \text{ kg/ft}^3 = 0.08 \text{ metric tons}$$

$$p_i(\text{CO}_2) = 0.0526 \text{ kg/ft}^3 = 1031.89 \text{ metric tons}$$

$$5) \text{CO}_2\text{e} = \text{CO}_2 + (\text{CH}_4 \times \text{GWP}) \quad \text{short tons} \quad \text{CO}_2\text{e}$$

$$\text{CO}_2 = 1031.89 = 1137.46 \quad 1137.46$$

$$\text{CH}_4 = 0.08 = 0.08 \quad 2.09$$

$$\text{CH}_4 \text{ GWP} = 25 \quad 1139.55$$

Source	Annual Volume
Oil Tanks	7318028.64
Water Tanks	49215.80
	-
	-
	7367244.44

* V_a is the sum of vapors from the tanks being routed to the flare.

XTO ENERGY INC.
LONGHORN COMPRESSOR STATION
DEHYDRATOR COMBUSTION (VC1) - GHG EMISSIONS SUMMARY

Flare Emissions Summary Table - Normal Operations

$$1) E_{a,CH_4} = V_a * X_{CH_4} * [(1-\eta) * Z_L + Z_U] = 4,539.52 \text{ SCF/Yr}$$

$V_a = 9,885,788.66$
 $X_{CH_4} = 0.022959835$
 $N = 0.98$
 $Z_L = 1.00$
 $Z_U = 0.00$

$$2) E_{a,CO_2} (\text{uncombusted}) = V_a * X_{CO_2} = 2,638,702.80 \text{ SCF/Yr}$$

$V_a = 9,885,788.66$
 $X_{CO_2} = 0.2669$

$$3) E_{a,CO_2} (\text{combusted}) = \sum (\eta * V_a * Y_j * R_j * Z_L)$$

$N = 0.98$
 $V_a = 9,885,788.66$
 $Y_j =$

Methane	0.0230
Ethane	0.0446
Propane	0.0851
Butane	0.0160
Pentane +	0.4592

 $Z_L = 1.00$

$R_j =$		$E_{a,CO_2} =$
1		222,436.55
2		863,609.86
3		2,472,094.68
4		619,037.96
5		22,244,549.58
		26,421,728.63

SCF/Yr

Source	Annual Volume
DEHY1	3295262.89
DEHY2	3295262.89
DEHY3	3295262.89
	-
	-
	9885788.66

$$3) E_{a,n} = \frac{E_{a,n} * (459.67 + T_a) * P_a}{(459.67 + T_a) * P_a}$$

$E_{a,n}(CH_4) = 4,539.52$
 $E_{a,n}(CO_2) = 29,060,431.43$
 $T_s = 60^\circ \text{ F}$
 $T_a = 93.7^\circ \text{ F}$ Roswell, AP-42
 $P_s = 13.28$
 $P_a = 12.73$ Roswell, AP-42

$$4) \text{Mass}_{a,i} = E_{a,i} * \rho_i * 10^3$$

$E_{a,i}(CH_4) = 4,086.51$
 $E_{a,i}(CO_2) = 26,160,402.48$
 $\rho_i(CH_4) = 0.0192 \text{ kg/ft}^3$
 $\rho_i(CO_2) = 0.0526 \text{ kg/ft}^3$

=	0.08	metric tons
=	1376.04	metric tons

$$5) CO_2e = CO_2 + (CH_4 * GWP)$$

CO2 =	1376.04	=	1516.82	1516.82
CH4 =	0.08	=	0.09	2.16
CH4 GWP =	25			1518.98

* V_a is the sum of vapors from the dehydrators being routed to the flare.

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.
-

Backup documentation is provided.

GAS COMPRESSION APPLICATION

ENGINE SPEED (rpm): 1000
 COMPRESSION RATIO: 7.6
 AFTERCOOLER TYPE: SCAC
 AFTERCOOLER - STAGE 2 INLET (°F): 130
 AFTERCOOLER - STAGE 1 INLET (°F): 174
 JACKET WATER OUTLET (°F): 190
 ASPIRATION: TA
 COOLING SYSTEM: JW+1AC, OC+2AC
 CONTROL SYSTEM: ADEM4
 EXHAUST MANIFOLD: DRY
 COMBUSTION: LOW EMISSION
 NOx EMISSION LEVEL (g/bhp-hr NOx): 0.3
 SET POINT TIMING: 17

RATING STRATEGY: STANDARD
 RATING LEVEL: CONTINUOUS
 FUEL SYSTEM: GAV
 WITH AIR FUEL RATIO CONTROL

SITE CONDITIONS:

FUEL: Gas Analysis
 FUEL PRESSURE RANGE(psig): (See note 1) 58.0-70.3
 FUEL METHANE NUMBER: 57.4
 FUEL LHV (Btu/scf): 1058
 ALTITUDE(ft): 3320
 INLET AIR TEMPERATURE(°F): 77
 STANDARD RATED POWER: 5000 bhp@1000rpm

RATING	NOTES	LOAD	MAXIMUM RATING	SITE RATING AT MAXIMUM INLET AIR TEMPERATURE			
			100%	100%	75%	50%	
ENGINE POWER (WITHOUT FAN)	(2)	bhp	5000	5000	3750	2500	
INLET AIR TEMPERATURE		°F	77	77	77	77	

ENGINE DATA							
FUEL CONSUMPTION (LHV)	(3)	Btu/bhp-hr	6814	6814	6982	7449	
FUEL CONSUMPTION (HHV)	(3)	Btu/bhp-hr	7514	7514	7700	8214	
AIR FLOW (@inlet air temp, 14.7 psia) (WET)	(4)(5)	ft ³ /min	12231	12231	9233	6285	
AIR FLOW (WET)	(4)(5)	lb/hr	54233	54233	40939	27870	
FUEL FLOW (60°F, 14.7 psia)		scfm	537	537	413	293	
INLET MANIFOLD PRESSURE	(6)	in Hg(abs)	106.9	106.9	79.8	55.7	
EXHAUST TEMPERATURE - ENGINE OUTLET	(7)	°F	829	829	876	942	
EXHAUST GAS FLOW (@engine outlet temp, 14.5 psia) (WET)	(8)(5)	ft ³ /min	31323	31323	24520	17561	
EXHAUST GAS MASS FLOW (WET)	(8)(5)	lb/hr	56093	56093	42368	28886	

EMISSIONS DATA - ENGINE OUT							
NOx (as NO ₂)	(9)(10)	g/bhp-hr	0.30	0.30	0.30	0.30	
CO	(9)(10)	g/bhp-hr	2.87	2.87	2.87	2.87	
THC (mol. wt. of 15.84)	(9)(10)	g/bhp-hr	3.80	3.80	4.16	4.41	
NMHC (mol. wt. of 15.84)	(9)(10)	g/bhp-hr	1.48	1.48	1.62	1.72	
NMNEHC (VOCs) (mol. wt. of 15.84)	(9)(10)(11)	g/bhp-hr	0.85	0.85	0.94	0.99	
HCHO (Formaldehyde)	(9)(10)	g/bhp-hr	0.15	0.15	0.16	0.20	
CO ₂	(9)(10)	g/bhp-hr	454	454	472	499	
EXHAUST OXYGEN	(9)(12)	% DRY	10.8	10.8	10.5	10.2	

HEAT REJECTION							
HEAT REJ. TO JACKET WATER (JW)	(13)	Btu/min	53849	53849	43588	36541	
HEAT REJ. TO ATMOSPHERE	(13)	Btu/min	19133	19133	17584	15863	
HEAT REJ. TO LUBE OIL (OC)	(13)	Btu/min	30638	30638	27472	24189	
HEAT REJ. TO A/C - STAGE 1 (1AC)	(13)(14)	Btu/min	51946	51946	26886	7463	
HEAT REJ. TO A/C - STAGE 2 (2AC)	(13)(14)	Btu/min	11721	11721	8150	4976	

COOLING SYSTEM SIZING CRITERIA			
TOTAL JACKET WATER CIRCUIT (JW+1AC)	(14)(15)	Btu/min	113777
TOTAL STAGE 2 AFTERCOOLER CIRCUIT (OC+2AC)	(14)(15)	Btu/min	49073

A cooling system safety factor of 0% has been added to the cooling system sizing criteria.

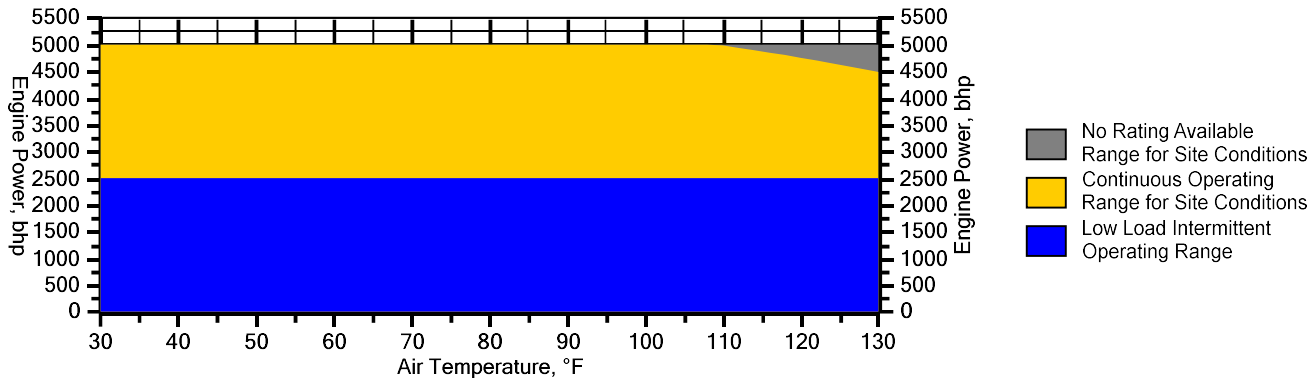
CONDITIONS AND DEFINITIONS

Engine rating obtained and presented in accordance with ISO 3046/1, adjusted for fuel, site altitude and site inlet air temperature. 100% rating at maximum inlet air temperature is the maximum engine capability for the specified fuel at site altitude and maximum site inlet air temperature. Maximum rating is the maximum capability at the specified aftercooler inlet temperature for the specified fuel at site altitude and reduced inlet air temperature. Lowest load point is the lowest continuous duty operating load allowed. No overload permitted at rating shown.

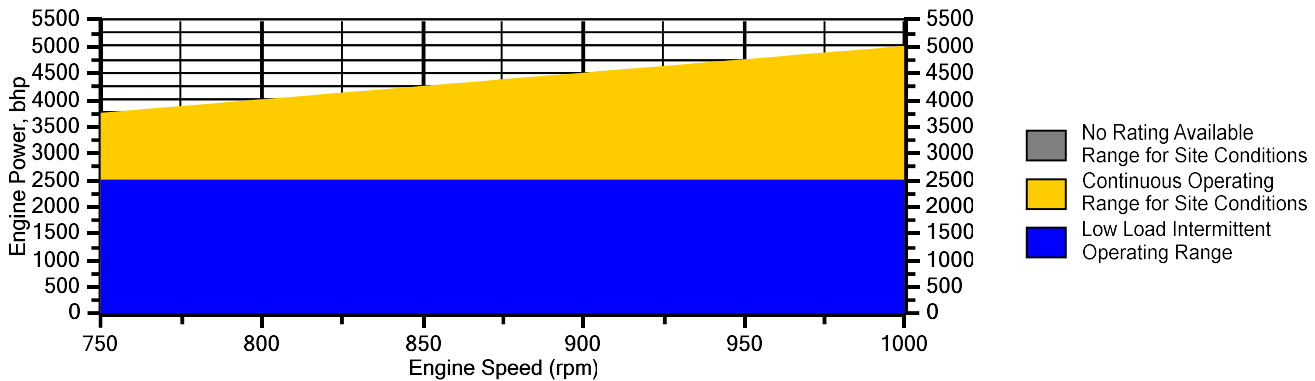
For notes information consult page three.

Engine Power vs. Inlet Air Temperature

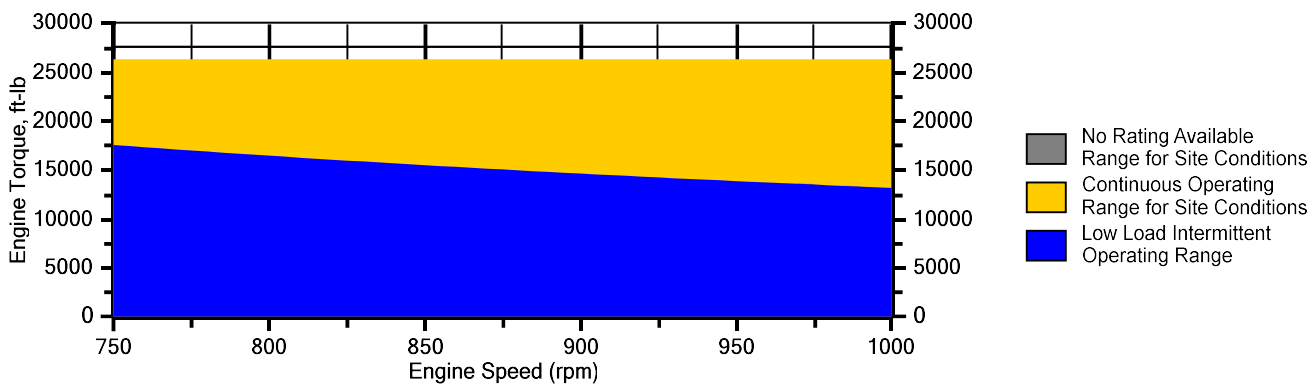
Data represents temperature sweep at 3320 ft and 1000 rpm

**Engine Power vs. Engine Speed**

Data represents speed sweep at 3320 ft and 77 °F

**Engine Torque vs. Engine Speed**

Data represents speed sweep at 3320 ft and 77 °F



Note: At site conditions of 3320 ft and 77°F inlet air temp., constant torque can be maintained down to 750 rpm. The minimum speed for loading at these conditions is 750 rpm.

NOTES

1. Fuel pressure range specified is to the engine gas shutoff valve (GSOV). Additional fuel train components should be considered in pressure and flow calculations.
2. Engine rating is with two engine driven water pumps. Tolerance is $\pm 3\%$ of full load.
3. Fuel consumption tolerance is $\pm 2.5\%$ of full load data.
4. Air flow value is on a 'wet' basis. Flow is a nominal value with a tolerance of $\pm 5\%$.
5. Inlet and Exhaust Restrictions must not exceed A&I limits based on full load flow rates from the standard technical data sheet.
6. Inlet manifold pressure is a nominal value with a tolerance of $\pm 5\%$.
7. Exhaust temperature is a nominal value with a tolerance of $(+)63^{\circ}\text{F}$, $(-)54^{\circ}\text{F}$.
8. Exhaust flow value is on a "wet" basis. Flow is a nominal value with a tolerance of $\pm 6\%$.
9. Emissions data is at engine exhaust flange prior to any after treatment.
10. Values listed are higher than nominal levels to allow for instrumentation, measurement, and engine-to-engine variations. They indicate the maximum values expected under steady state conditions. Fuel methane number cannot vary more than ± 3 . THC, NMHC, and NMNEHC do not include aldehydes. An oxidation catalyst may be required to meet Federal, State or local CO or HC requirements.
11. VOCs - Volatile organic compounds as defined in US EPA 40 CFR 60, subpart JJJJ
12. Exhaust Oxygen level is the result of adjusting the engine to operate at the specified NOx level. Tolerance is ± 0.5 .
13. Heat rejection values are nominal. Tolerances, based on treated water, are $\pm 10\%$ for jacket water circuit, $\pm 50\%$ for radiation, $\pm 20\%$ for lube oil circuit, and $\pm 5\%$ for aftercooler circuit.
14. Aftercooler heat rejection includes an aftercooler heat rejection factor for the site elevation and inlet air temperature specified. Aftercooler heat rejection values at part load are for reference only. Do not use part load data for heat exchanger sizing.
15. Cooling system sizing criteria are maximum circuit heat rejection for the site, with applied tolerances.

GAS COMPRESSION APPLICATION

ENGINE SPEED (rpm): 1400
 COMPRESSION RATIO: 8
 AFTERCOOLER TYPE: SCAC
 AFTERCOOLER - STAGE 2 INLET (°F): 130
 AFTERCOOLER - STAGE 1 INLET (°F): 201
 JACKET WATER OUTLET (°F): 210
 ASPIRATION: TA
 COOLING SYSTEM: JW+OC+1AC, 2AC
 CONTROL SYSTEM: ADEM3
 EXHAUST MANIFOLD: ASWC
 COMBUSTION: LOW EMISSION
 NOx EMISSION LEVEL (g/bhp-hr NOx): 0.5
 SET POINT TIMING: 28

RATING STRATEGY: STANDARD
 RATING LEVEL: CONTINUOUS
 FUEL SYSTEM: CAT WIDE RANGE
 WITH AIR FUEL RATIO CONTROL

SITE CONDITIONS:

FUEL: Gas Analysis
 FUEL PRESSURE RANGE(psig): (See note 1) 7.0-40.0
 FUEL METHANE NUMBER: 57.4
 FUEL LHV (Btu/scf): 1058
 ALTITUDE(ft): 3320
 INLET AIR TEMPERATURE(°F): 77
 STANDARD RATED POWER: 1380 bhp@1400rpm

RATING	NOTES	LOAD	MAXIMUM RATING	SITE RATING AT MAXIMUM INLET AIR TEMPERATURE			
			100%	100%	75%	50%	
ENGINE POWER (WITHOUT FAN)	(2)	bhp	1380	1380	1035	690	
INLET AIR TEMPERATURE		°F	77	77	77	77	

ENGINE DATA							
FUEL CONSUMPTION (LHV)	(3)	Btu/bhp-hr	7384	7384	7751	8332	
FUEL CONSUMPTION (HHV)	(3)	Btu/bhp-hr	8144	8144	8548	9188	
AIR FLOW (@inlet air temp, 14.7 psia) (WET)	(4)(5)	ft ³ /min	3117	3117	2382	1636	
AIR FLOW (WET)	(4)(5)	lb/hr	13823	13823	10563	7253	
FUEL FLOW (60°F, 14.7 psia)		scfm	161	161	126	91	
INLET MANIFOLD PRESSURE	(6)	in Hg(abs)	88.3	88.3	70.3	48.4	
EXHAUST TEMPERATURE - ENGINE OUTLET	(7)	°F	831	831	829	885	
EXHAUST GAS FLOW (@engine outlet temp, 14.5 psia) (WET)	(8)(5)	ft ³ /min	8063	8063	6163	4429	
EXHAUST GAS MASS FLOW (WET)	(8)(5)	lb/hr	14378	14378	11000	7566	

EMISSIONS DATA - ENGINE OUT							
NOx (as NO ₂)	(9)(10)	g/bhp-hr	0.50	0.50	0.50	0.50	
CO	(9)(10)	g/bhp-hr	2.45	2.45	2.46	2.37	
THC (mol. wt. of 15.84)	(9)(10)	g/bhp-hr	4.04	4.04	3.95	3.73	
NMHC (mol. wt. of 15.84)	(9)(10)	g/bhp-hr	1.58	1.58	1.54	1.46	
NMNEHC (VOCs) (mol. wt. of 15.84)	(9)(10)(11)	g/bhp-hr	0.91	0.91	0.89	0.84	
HCHO (Formaldehyde)	(9)(10)	g/bhp-hr	0.39	0.39	0.37	0.36	
CO ₂	(9)(10)	g/bhp-hr	511	511	534	577	
EXHAUST OXYGEN	(9)(12)	% DRY	9.0	9.0	8.7	8.3	

HEAT REJECTION							
HEAT REJ. TO JACKET WATER (JW)	(13)	Btu/min	36943	36943	31734	26404	
HEAT REJ. TO ATMOSPHERE	(13)	Btu/min	5313	5313	4428	3543	
HEAT REJ. TO LUBE OIL (OC)	(13)	Btu/min	4466	4466	3836	3192	
HEAT REJ. TO A/C - STAGE 1 (1AC)	(13)(14)	Btu/min	9220	9220	6936	1639	
HEAT REJ. TO A/C - STAGE 2 (2AC)	(13)(14)	Btu/min	5214	5214	4520	2815	

COOLING SYSTEM SIZING CRITERIA			
TOTAL JACKET WATER CIRCUIT (JW+OC+1AC)	(14)(15)	Btu/min	55677
TOTAL AFTERCOOLER CIRCUIT (2AC)	(14)(15)	Btu/min	5475
A cooling system safety factor of 0% has been added to the cooling system sizing criteria.			

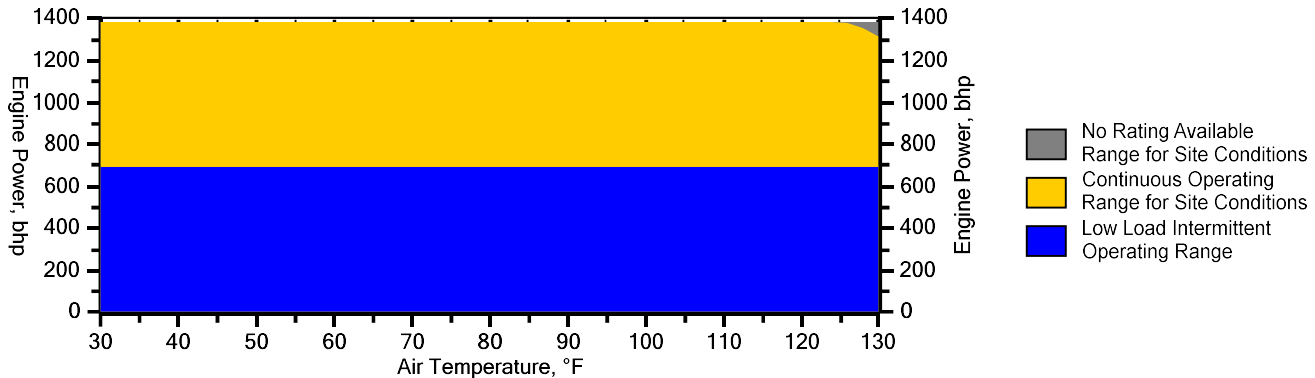
CONDITIONS AND DEFINITIONS

Engine rating obtained and presented in accordance with ISO 3046/1, adjusted for fuel, site altitude and site inlet air temperature. 100% rating at maximum inlet air temperature is the maximum engine capability for the specified fuel at site altitude and maximum site inlet air temperature. Maximum rating is the maximum capability at the specified aftercooler inlet temperature for the specified fuel at site altitude and reduced inlet air temperature. Lowest load point is the lowest continuous duty operating load allowed. No overload permitted at rating shown.

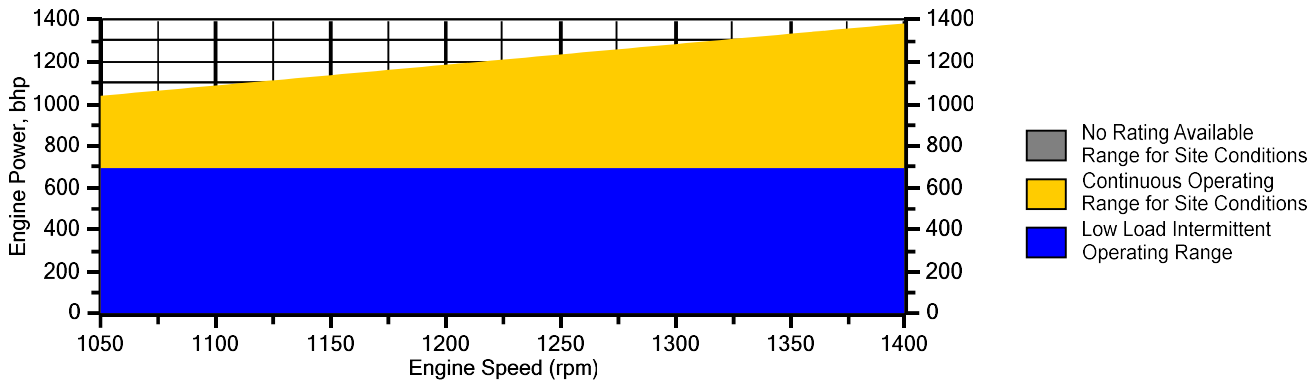
For notes information consult page three.

Engine Power vs. Inlet Air Temperature

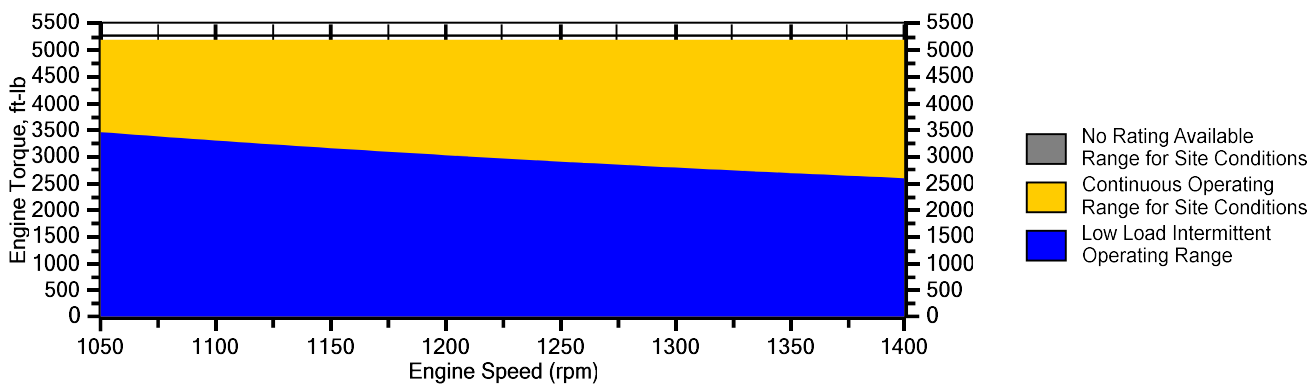
Data represents temperature sweep at 3320 ft and 1400 rpm

**Engine Power vs. Engine Speed**

Data represents speed sweep at 3320 ft and 77 °F

**Engine Torque vs. Engine Speed**

Data represents speed sweep at 3320 ft and 77 °F



Note: At site conditions of 3320 ft and 77°F inlet air temp., constant torque can be maintained down to 1050 rpm. The minimum speed for loading at these conditions is 1050 rpm.

NOTES

1. Fuel pressure range specified is to the engine fuel pressure regulator. Additional fuel train components should be considered in pressure and flow calculations.
2. Engine rating is with two engine driven water pumps. Tolerance is $\pm 3\%$ of full load.
3. Fuel consumption tolerance is $\pm 3.0\%$ of full load data.
4. Air flow value is on a 'wet' basis. Flow is a nominal value with a tolerance of $\pm 5\%$.
5. Inlet and Exhaust Restrictions must not exceed A&I limits based on full load flow rates from the standard technical data sheet.
6. Inlet manifold pressure is a nominal value with a tolerance of $\pm 5\%$.
7. Exhaust temperature is a nominal value with a tolerance of $(+)63^{\circ}\text{F}$, $(-)54^{\circ}\text{F}$.
8. Exhaust flow value is on a "wet" basis. Flow is a nominal value with a tolerance of $\pm 6\%$.
9. Emissions data is at engine exhaust flange prior to any after treatment.
10. Values listed are higher than nominal levels to allow for instrumentation, measurement, and engine-to-engine variations. They indicate the maximum values expected under steady state conditions. Fuel methane number cannot vary more than ± 3 . THC, NMHC, and NMNEHC do not include aldehydes. An oxidation catalyst may be required to meet Federal, State or local CO or HC requirements.
11. VOCs - Volatile organic compounds as defined in US EPA 40 CFR 60, subpart JJJJ
12. Exhaust Oxygen level is the result of adjusting the engine to operate at the specified NOx level. Tolerance is ± 0.5 .
13. Heat rejection values are nominal. Tolerances, based on treated water, are $\pm 10\%$ for jacket water circuit, $\pm 50\%$ for radiation, $\pm 20\%$ for lube oil circuit, and $\pm 5\%$ for aftercooler circuit.
14. Aftercooler heat rejection includes an aftercooler heat rejection factor for the site elevation and inlet air temperature specified. Aftercooler heat rejection values at part load are for reference only. Do not use part load data for heat exchanger sizing.
15. Cooling system sizing criteria are maximum circuit heat rejection for the site, with applied tolerances.

GAS COMPRESSION APPLICATION

ENGINE SPEED (rpm): 1800
 COMPRESSION RATIO: 8
 AFTERCOOLER TYPE: SCAC
 AFTERCOOLER WATER INLET (°F): 130
 JACKET WATER OUTLET (°F): 210
 ASPIRATION: TA
 COOLING SYSTEM: JW+OC, AC
 CONTROL SYSTEM: ADEM4
 EXHAUST MANIFOLD: WC
 COMBUSTION: INTEGRATED CATALYST
 NOx EMISSION LEVEL (g/bhp-hr NOx): 0.5
 SET POINT TIMING: 27

RATING STRATEGY: STANDARD
 RATING LEVEL: CONTINUOUS
 FUEL SYSTEM: HPG IMPCO
 WITH AIR FUEL RATIO CONTROL

SITE CONDITIONS:
 FUEL: Longhorn - No Fuel Cond
 FUEL PRESSURE RANGE(psig): (See note 1) 12.0-24.9
 FUEL METHANE NUMBER: 57.4
 FUEL LHV (Btu/scf): 1058
 ALTITUDE(ft): 3320
 INLET AIR TEMPERATURE(°F): 77
 STANDARD RATED POWER: 203 bhp@1800rpm

			MAXIMUM RATING	SITE RATING AT MAXIMUM INLET AIR TEMPERATURE			
RATING	NOTES	LOAD	100%	100%	75%	53%	
ENGINE POWER (WITHOUT FAN)	(2)	bhp	192	192	144	101	
INLET AIR TEMPERATURE		°F	77	77	77	77	

ENGINE DATA						
FUEL CONSUMPTION (LHV)	(3)	Btu/bhp-hr	8271	8271	8711	9310
FUEL CONSUMPTION (HHV)	(3)	Btu/bhp-hr	9122	9122	9607	10267
AIR FLOW (@inlet air temp, 14.7 psia) (WET)	(4)(5)	ft3/min	287	287	232	177
AIR FLOW (WET)	(4)(5)	lb/hr	1275	1275	1029	785
FUEL FLOW (60°F, 14.7 psia)		scfm	25	25	20	15
INLET MANIFOLD PRESSURE	(6)	in Hg(abs)	37.2	37.2	30.3	23.7
EXHAUST TEMPERATURE - ENGINE OUTLET	(7)	°F	1115	1115	1073	1001
EXHAUST GAS FLOW (@engine outlet temp, 14.5 psia) (WET)	(8)(5)	ft3/min	943	943	740	537
EXHAUST GAS MASS FLOW (WET)	(8)(5)	lb/hr	1361	1361	1097	836

EMISSIONS DATA - CATALYST OUT						
NOx (as NO2)	(9)(10)	g/bhp-hr	0.50	0.50	0.50	0.50
CO	(9)(10)	g/bhp-hr	2.00	2.00	2.00	2.00
THC (mol. wt. of 15.84)	(9)(10)	g/bhp-hr	0.89	0.89	1.06	1.22
NMHC (mol. wt. of 15.84)	(9)(10)	g/bhp-hr	0.35	0.35	0.41	0.48
NMNEHC (VOCs) (mol. wt. of 15.84)	(9)(10)(11)	g/bhp-hr	0.20	0.20	0.24	0.28
HCHO (Formaldehyde)	(9)(10)	g/bhp-hr	0.24	0.24	0.24	0.24
CO2	(9)(10)	g/bhp-hr	577	577	617	658
EXHAUST OXYGEN	(9)(12)	% DRY	0.0	0.0	0.0	0.0

HEAT REJECTION						
HEAT REJ. TO JACKET WATER (JW)	(13)	Btu/min	8789	8789	7451	6188
HEAT REJ. TO ATMOSPHERE	(13)	Btu/min	1058	1058	835	621
HEAT REJ. TO LUBE OIL (OC)	(13)	Btu/min	1311	1311	1111	923
HEAT REJ. TO AFTERCOOLER (AC)	(13)(14)	Btu/min	580	580	253	80

COOLING SYSTEM SIZING CRITERIA			
TOTAL JACKET WATER CIRCUIT (JW+OC)	(14)	Btu/min	11241
TOTAL AFTERCOOLER CIRCUIT (AC)	(14)(15)	Btu/min	609
A cooling system safety factor of 0% has been added to the cooling system sizing criteria.			

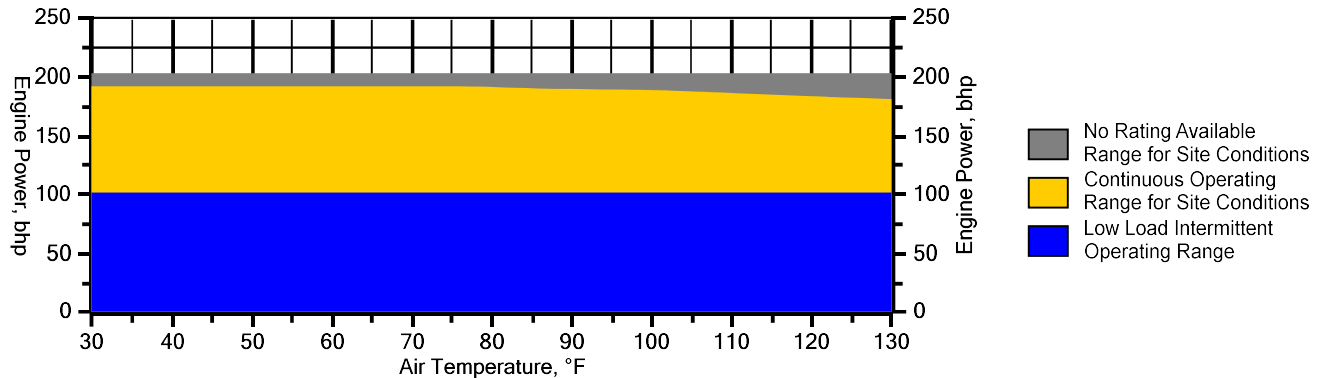
CONDITIONS AND DEFINITIONS

Engine rating obtained and presented in accordance with ISO 3046/1, adjusted for fuel, site altitude and site inlet air temperature. 100% rating at maximum inlet air temperature is the maximum engine capability for the specified fuel at site altitude and maximum site inlet air temperature. Maximum rating is the maximum capability at the specified aftercooler inlet temperature for the specified fuel at site altitude and reduced inlet air temperature. Lowest load point is the lowest continuous duty operating load allowed. No overload permitted at rating shown.

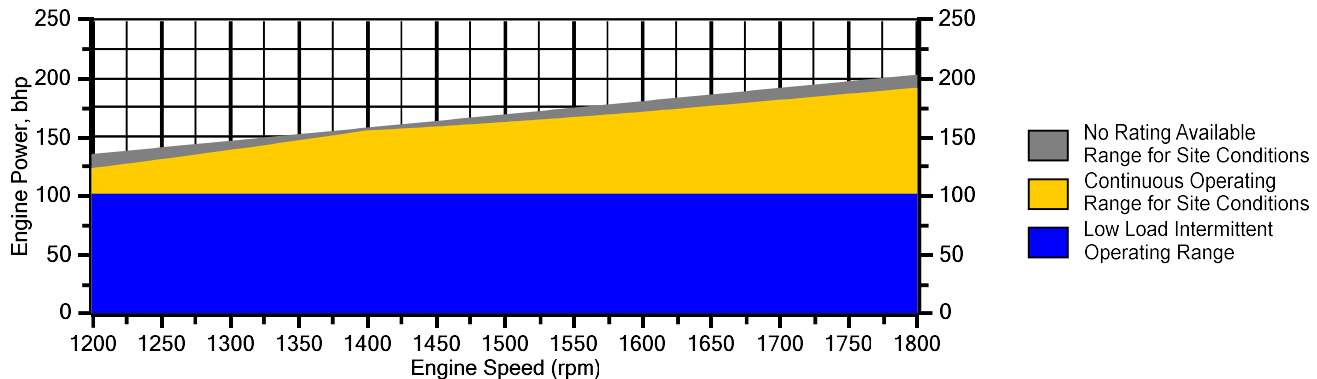
For notes information consult page three.

Engine Power vs. Inlet Air Temperature

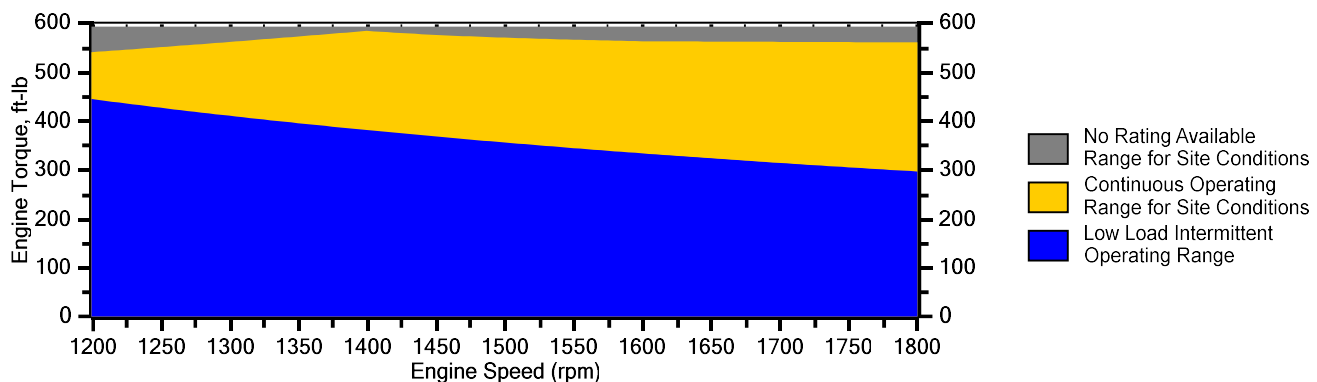
Data represents temperature sweep at 3320 ft and 1800 rpm

**Engine Power vs. Engine Speed**

Data represents speed sweep at 3320 ft and 77 °F

**Engine Torque vs. Engine Speed**

Data represents speed sweep at 3320 ft and 77 °F



Note: At site conditions of 3320 ft and 77°F inlet air temp., constant torque can be maintained down to 1300 rpm. The minimum speed for loading at these conditions is 1200 rpm.

NOTES

1. Fuel pressure range specified is to the engine fuel pressure regulator. Additional fuel train components should be considered in pressure and flow calculations.
2. Engine rating is with two engine driven water pumps. Tolerance is $\pm 3\%$ of full load.
3. Fuel consumption tolerance is $\pm 5.0\%$ of full load data.
4. Air flow value is on a 'wet' basis. Flow is a nominal value with a tolerance of $\pm 5\%$.
5. Inlet and Exhaust Restrictions must not exceed A&I limits based on full load flow rates from the standard technical data sheet.
6. Inlet manifold pressure is a nominal value with a tolerance of $\pm 5\%$.
7. Exhaust temperature is a nominal value with a tolerance of $(+63^{\circ}\text{F}, -54^{\circ}\text{F})$.
8. Exhaust flow value is on a "wet" basis. Flow is a nominal value with a tolerance of $\pm 6\%$.
9. Emissions data is post Caterpillar provided catalyst. Values are dependent on proper engine and catalyst maintenance.
10. Emission values are based on engine operating at steady state conditions. Fuel methane number cannot vary more than ± 3 . Values listed are higher than nominal levels to allow for instrumentation, measurement, and engine-to-engine variations. They indicate "Not to Exceed" values. THC, NMHC, and NMNEHC do not include aldehydes.
11. VOCs - Volatile organic compounds as defined in US EPA 40 CFR 60, subpart JJJJ
12. Exhaust Oxygen tolerance is ± 0.2 .
13. Heat rejection values are nominal. Tolerances, based on treated water, are $\pm 10\%$ for jacket water circuit, $\pm 50\%$ for radiation, $\pm 20\%$ for lube oil circuit, and $\pm 5\%$ for aftercooler circuit.
14. Aftercooler heat rejection includes an aftercooler heat rejection factor for the site elevation and inlet air temperature specified. Aftercooler heat rejection values at part load are for reference only. Do not use part load data for heat exchanger sizing.
15. Cooling system sizing criteria are maximum circuit heat rejection for the site, with applied tolerances.

Power Emissions Group
311 Riggs Street, Bloomer, WI 54724
Tel: (715) 568-2882 • Fax: (715)568-2884
E-mail : bweninger@catalyticcombustion.com



To XTO
Attn
Via E-mail

Our Ref. 001-00-264612.00
Date: 05 September, 2019
Page: 1 of 3

CATALYST PERFORMANCE

For :

Location : Hawkeye

Engine Parameters

Engine Manufacturer	Caterpillar				Raw Exhaust
Engine Model	G3616		NOx	0.30	g/bhp-hr
Horsepower	5000	bhp	CO	2.87	g/bhp-hr
Speed	1000	rpm	NMHC	1.48	g/bhp-hr
Exhaust Flowrate	31323	acfm	NMNEHC (VOC)	0.85	g/bhp-hr
Exhaust Temperature	829	° F	HCHO	0.15	g/bhp-hr
Fuel	Natural Gas		Oxygen	10.80	%

Catalyst Description and Performance Expectations

Catalyst Model	RGT-2516F-D-15HF-HFX4	Catalyst Dimensions	24.75 x 15.44 x 3.70
Cell Pattern, Substrate	150 cpsi Herringbone on Flat, Brazed Metal Foil	Quantity Required	12 per Unit
Banding	CCC C-Channel Design	Formulation	HFX4
Life Expectancy	4000	Pressure Drop	4.1 inches of H2O

Performance

NOx		
CO	85	% Conversion
NMHC		
NMNEHC (VOC)	73	% Conversion
HCHO	73	% Conversion

General Terms and Conditions of Sale and Manufacturers Warranty documents are available upon request.

The catalyst(s) above will be installed into a catalyst housing designed and manufactured by another supplier. CCC cannot verify that their housing is structurally sound or provides proper catalyst sealing to prevent exhaust by-pass. If for some reason the emissions targets are not being achieved with the engine operating as stated above, the end user shall verify that the housing is working as expected along with verifying the catalyst(s) have not been damaged or it has not been poisoned from flue gas containments.

Please contact us if you have any questions or to let us know how we can be of further help.

Best regards,

Brian Weninger
Mechanical Engineer, Power Emissions Group

Power Emissions Group
311 Riggs Street, Bloomer, WI 54724
Tel: (715) 568-2882 • Fax: (715)568-2884
E-mail : bweninger@catalyticcombustion.com



To XTO
Attn
Via E-mail

Our Ref. 001-00-264612.00
Date: 05 September, 2019
Page: 2 of 3

CATALYST PERFORMANCE

For :

Location : Hawkeye

Engine Parameters

Engine Manufacturer	Caterpillar			Raw Exhaust
Engine Model	G3516J		NOx	0.50 g/bhp-hr
Horsepower	1380	bhp	CO	2.45 g/bhp-hr
Speed	1400	rpm	NMHC	1.58 g/bhp-hr
Exhaust Flowrate	8063	acfm	NMNEHC (VOC)	0.91 g/bhp-hr
Exhaust Temperature	831	° F	HCHO	0.39 g/bhp-hr
Fuel	Natural Gas		Oxygen	9.00 %

Catalyst Description and Performance Expectations

Catalyst Model	RGT-2516F-D-20HB-HFX4	Catalyst Dimensions	24.75 x 15.44 x 3.70
Cell Pattern, Substrate	200 cpsi Herringbone, Folded Metal Foil	Quantity Required	4 per Unit
Banding	CCC C-Channel Design	Formulation	HFX4
Life Expectancy	8000	Pressure Drop	1.2 inches of H2O

Performance

NOx		
CO	85	% Conversion
NMHC		
NMNEHC (VOC)	73	% Conversion
HCHO	73	% Conversion

General Terms and Conditions of Sale and Manufacturers Warranty documents are available upon request.

The catalyst(s) above will be installed into a catalyst housing designed and manufactured by another supplier. CCC cannot verify that their housing is structurally sound or provides proper catalyst sealing to prevent exhaust by-pass. If for some reason the emissions targets are not being achieved with the engine operating as stated above, the end user shall verify that the housing is working as expected along with verifying the catalyst(s) have not been damaged or it has not been poisoned from flue gas containments.

Please contact us if you have any questions or to let us know how we can be of further help.

Best regards,

Brian Weninger
Mechanical Engineer, Power Emissions Group

May 9, 2017

FESCO, Ltd.
1100 Fesco Ave. - Alice, Texas 78332

For: XTO Energy Inc.
810 Houston St. - Petro 4
Fort Worth, Texas 76102

Sample: PLU Big Sinks No. 22 (H24-25-30 No. 1Y)
Inlet Separator
Spot Gas Sample @ 74 psig & 91 °F

Date Sampled: 04/21/2017

Job Number: 72050.001

CHROMATOGRAPH EXTENDED ANALYSIS - GPA 2286

COMPONENT	MOL%	GPM
Hydrogen Sulfide*	< 0.001	
Nitrogen	1.697	
Carbon Dioxide	5.334	
Methane	72.546	
Ethane	10.176	2.787
Propane	5.422	1.530
Isobutane	0.750	0.251
n-Butane	1.896	0.612
2-2 Dimethylpropane	0.020	0.008
Isopentane	0.489	0.183
n-Pentane	0.594	0.220
Hexanes	0.478	0.202
Heptanes Plus	<u>0.598</u>	<u>0.246</u>
Totals	100.000	6.039

Computed Real Characteristics Of Heptanes Plus:

Specific Gravity -----	3.332	(Air=1)
Molecular Weight -----	96.11	
Gross Heating Value -----	5088	BTU/CF

Computed Real Characteristics Of Total Sample:

Specific Gravity -----	0.805	(Air=1)
Compressibility (Z) -----	0.9958	
Molecular Weight -----	23.23	
Gross Heating Value		
Dry Basis -----	1265	BTU/CF
Saturated Basis -----	1244	BTU/CF

*Hydrogen Sulfide tested on location by: Stain Tube Method (GPA 2377)
0.126 Gr/100 CF, 2.0 PPMV or 0.0002 Mol%

Base Conditions: 15.025 PSI & 60 Deg F

Sampled By: (16) JRG
Analyst: HB
Processor: NG
Cylinder ID: T-1311

Certified: FESCO, Ltd. - Alice, Texas

David Dannhaus 361-661-7015

**CHROMATOGRAPH EXTENDED ANALYSIS - GPA 2286
TOTAL REPORT**

COMPONENT	MOL %	GPM	WT %
Hydrogen Sulfide*	< 0.001		< 0.001
Nitrogen	1.697		2.046
Carbon Dioxide	5.334		10.104
Methane	72.546		50.095
Ethane	10.176	2.787	13.170
Propane	5.422	1.530	10.291
Isobutane	0.750	0.251	1.876
n-Butane	1.896	0.612	4.743
2,2 Dimethylpropane	0.020	0.008	0.062
Isopentane	0.489	0.183	1.519
n-Pentane	0.594	0.220	1.845
2,2 Dimethylbutane	0.005	0.002	0.019
Cyclopentane	0.000	0.000	0.000
2,3 Dimethylbutane	0.046	0.019	0.171
2 Methylpentane	0.150	0.064	0.556
3 Methylpentane	0.080	0.033	0.297
n-Hexane	0.197	0.083	0.731
Methylcyclopentane	0.080	0.028	0.290
Benzene	0.047	0.013	0.158
Cyclohexane	0.077	0.027	0.279
2-Methylhexane	0.024	0.011	0.104
3-Methylhexane	0.028	0.013	0.121
2,2,4 Trimethylpentane	0.000	0.000	0.000
Other C7's	0.074	0.033	0.316
n-Heptane	0.057	0.027	0.246
Methylcyclohexane	0.064	0.026	0.270
Toluene	0.034	0.012	0.135
Other C8's	0.060	0.029	0.285
n-Octane	0.016	0.008	0.079
Ethylbenzene	0.003	0.001	0.014
M & P Xylenes	0.007	0.003	0.032
O-Xylene	0.002	0.001	0.009
Other C9's	0.019	0.010	0.103
n-Nonane	0.004	0.002	0.022
Other C10's	0.001	0.001	0.006
n-Decane	0.001	0.001	0.006
Undecanes (11)	<u>0.000</u>	<u>0.000</u>	<u>0.000</u>
Totals	100.000	6.039	100.000

Computed Real Characteristics Of Total Sample:

Specific Gravity -----	0.805	(Air=1)
Compressibility (Z) -----	0.9958	
Molecular Weight -----	23.23	
Gross Heating Value		
Dry Basis -----	1265	BTU/CF
Saturated Basis -----	1244	BTU/CF

June 1, 2017

FESCO, Ltd.
1100 FESCO Avenue - Alice, Texas 78332

For: XTO Energy Inc.
810 Houston St. - Petro 4
Fort Worth, Texas 76102

Sample: PLU Big Sinks No. 22 (H24-25-30 No. 1Y)
Inlet Separator Hydrocarbon Liquid
Sampled @ 74 psig & 91 °F

Date Sampled: 04/21/17

Job Number: 72050.002

CHROMATOGRAPH EXTENDED ANALYSIS - GPA 2186-M

COMPONENT	MOL %	LIQ VOL %	WT %
Nitrogen	0.028	0.005	0.005
Carbon Dioxide	0.247	0.069	0.072
Methane	1.783	0.495	0.189
Ethane	1.753	0.768	0.347
Propane	3.454	1.559	1.004
Isobutane	1.097	0.588	0.420
n-Butane	4.088	2.112	1.567
2,2 Dimethylpropane	0.032	0.020	0.015
Isopentane	2.486	1.490	1.183
n-Pentane	3.871	2.299	1.841
2,2 Dimethylbutane	0.041	0.028	0.024
Cyclopentane	0.000	0.000	0.000
2,3 Dimethylbutane	0.395	0.265	0.224
2 Methylpentane	1.832	1.246	1.041
3 Methylpentane	1.070	0.716	0.608
n-Hexane	3.100	2.089	1.761
Heptanes Plus	<u>74.725</u>	<u>86.251</u>	<u>89.699</u>
Totals:	100.000	100.000	100.000

Characteristics of Heptanes Plus:

Specific Gravity -----	0.8190	(Water=1)
°API Gravity -----	41.28	@ 60°F
Molecular Weight -----	182.1	
Vapor Volume -----	14.28	CF/Gal
Weight -----	6.82	Lbs/Gal

Characteristics of Total Sample:

Specific Gravity -----	0.7875	(Water=1)
°API Gravity -----	48.18	@ 60°F
Molecular Weight -----	151.7	
Vapor Volume -----	16.48	CF/Gal
Weight -----	6.56	Lbs/Gal

Base Conditions: 15.025 PSI & 60 °F

Certified: FESCO, Ltd. - Alice, Texas

Sampled By: (16) Garza
Analyst: XG
Processor: XGdjv
Cylinder ID: W-1636

David Dannhaus 361-661-7015

TANKS DATA INPUT REPORT - GPA 2186-M

COMPONENT	Mol %	LiqVol %	Wt %
Carbon Dioxide	0.247	0.069	0.072
Nitrogen	0.028	0.005	0.005
Methane	1.783	0.495	0.189
Ethane	1.753	0.768	0.347
Propane	3.454	1.559	1.004
Isobutane	1.097	0.588	0.420
n-Butane	4.120	2.132	1.582
Isopentane	2.486	1.490	1.183
n-Pentane	3.871	2.299	1.841
Other C-6's	3.338	2.255	1.897
Heptanes	10.615	7.239	6.598
Octanes	11.245	8.463	7.958
Nonanes	6.408	5.647	5.356
Decanes Plus	41.418	62.051	66.623
Benzene	0.923	0.423	0.475
Toluene	2.085	1.144	1.267
E-Benzene	0.226	0.143	0.158
Xylenes	1.806	1.141	1.264
n-Hexane	3.100	2.089	1.761
2,2,4 Trimethylpentane	0.000	0.000	0.000
Totals:	100.000	100.000	100.000

Characteristics of Total Sample:

Specific Gravity -----	0.7875	(Water=1)
°API Gravity -----	48.18	@ 60°F
Molecular Weight-----	151.7	
Vapor Volume -----	16.48	CF/Gal
Weight -----	6.56	Lbs/Gal

Characteristics of Decanes (C10) Plus:

Specific Gravity -----	0.8455	(Water=1)
Molecular Weight-----	244.0	

Characteristics of Atmospheric Sample:

°API Gravity -----	46.42	@ 60°F
Reid Vapor Pressure Equivalent (D-6377)-----	6.22	psi

QUALITY CONTROL CHECK			
	Sampling Conditions	Test Samples	
Cylinder Number	-----	W-1636*	-----
Pressure, PSIG	74	70	-----
Temperature, °F	91	91	-----

* Sample used for analysis

TOTAL EXTENDED REPORT - GPA 2186-M

COMPONENT	Mol %	LiqVol %	Wt %
Nitrogen	0.028	0.005	0.005
Carbon Dioxide	0.247	0.069	0.072
Methane	1.783	0.495	0.189
Ethane	1.753	0.768	0.347
Propane	3.454	1.559	1.004
Isobutane	1.097	0.588	0.420
n-Butane	4.088	2.112	1.567
2,2 Dimethylpropane	0.032	0.020	0.015
Isopentane	2.486	1.490	1.183
n-Pentane	3.871	2.299	1.841
2,2 Dimethylbutane	0.041	0.028	0.024
Cyclopentane	0.000	0.000	0.000
2,3 Dimethylbutane	0.395	0.265	0.224
2 Methylpentane	1.832	1.246	1.041
3 Methylpentane	1.070	0.716	0.608
n-Hexane	3.100	2.089	1.761
Methylcyclopentane	1.726	1.001	0.958
Benzene	0.923	0.423	0.475
Cyclohexane	2.069	1.154	1.148
2-Methylhexane	1.085	0.826	0.717
3-Methylhexane	0.996	0.750	0.658
2,2,4 Trimethylpentane	0.000	0.000	0.000
Other C-7's	2.098	1.512	1.372
n-Heptane	2.641	1.996	1.745
Methylcyclohexane	3.403	2.241	2.203
Toluene	2.085	1.144	1.267
Other C-8's	5.714	4.435	4.153
n-Octane	2.127	1.786	1.602
E-Benzene	0.226	0.143	0.158
M & P Xylenes	1.253	0.797	0.877
O-Xylene	0.553	0.345	0.387
Other C-9's	4.734	4.104	3.940
n-Nonane	1.674	1.543	1.415
Other C-10's	4.948	4.714	4.609
n-decane	1.297	1.305	1.217
Undecanes(11)	4.702	4.596	4.558
Dodecanes(12)	3.474	3.668	3.687
Tridecanes(13)	3.399	3.848	3.922
Tetradecanes(14)	2.873	3.484	3.599
Pentadecanes(15)	2.584	3.357	3.510
Hexadecanes(16)	1.829	2.538	2.676
Heptadecanes(17)	1.785	2.621	2.790
Octadecanes(18)	1.513	2.339	2.505
Nonadecanes(19)	1.602	2.579	2.778
Eicosanes(20)	1.049	1.756	1.902
Heneicosanes(21)	1.106	1.948	2.122
Docosanes(22)	1.031	1.891	2.073
Tricosanes(23)	0.795	1.512	1.666
Tetracosanes(24)	0.723	1.425	1.577
Pentacosanes(25)	0.672	1.374	1.529
Hexacosanes(26)	0.594	1.258	1.405
Heptacosanes(27)	0.679	1.492	1.674
Octacosanes(28)	0.414	0.941	1.060
Nonacosanes(29)	0.455	1.067	1.206
Triacotanes(30)	0.414	1.003	1.137
Hentriacotanes Plus(31+)	<u>3.480</u>	<u>11.335</u>	<u>13.422</u>
Total	100.000	100.000	100.000



June 1, 2017

FESCO Ltd.
1100 Fesco Avenue - Alice, Texas 78332

For: XTO Energy Inc.
810 Houston St. - Petro 4
Fort Worth, Texas 76102

LABORATORY TEST RESULTS

Lease/Well		PLU Big Sinks No. 22	Job Number	J72050
		(H24-25-30 No. 1Y)	Date Sampled	04/21/17
Sample ID	Test	Results	Units	Test Method
Inlet Separator	Total Sulfur	362.56	ppm wt	ASTM D-5453
Hydrocarbon Liquid		0.04	wt %	

FESCO Ltd. - Alice, Texas

David Dannhaus 361-661-7015

June 1, 2017

FESCO, Ltd.
1100 Fesco Avenue - Alice, Texas 78332

For: XTO Energy, Inc.
810 Houston St. – Petro 4
Fort Worth, TX 76102

Date Sampled: 04/21/17

Date Analyzed: 05/16/17

Sample: PLU Big Sinks No. 22 (H24-25-30 No. 1Y)

Job Number: J72050

FLASH LIBERATION OF HYDROCARBON LIQUID		
	Separator HC Liquid	Stock Tank
Pressure, psig	74	0
Temperature, °F	91	70
Gas Oil Ratio (1)	-----	38.6
Gas Specific Gravity (2)	-----	1.319
Separator Volume Factor (3)	1.0318	1.000

STOCK TANK FLUID PROPERTIES	
Shrinkage Recovery Factor (4)	0.9691
Oil API Gravity at 60 °F	46.42
Reid Vapor Pressure Equivalent (D-6377), psi (5)	6.22

Quality Control Check			
	Sampling Conditions	Test Samples	
Cylinder No.	-----	W-1636*	-----
Pressure, psig	74	70	-----
Temperature, °F	91	91	-----

(1) - Scf of flashed vapor per barrel of stock tank oil

(2) - Air = 1.000

(3) - Separator volume / Stock tank volume

(4) - Fraction of first stage separator liquid

(5) - Absolute pressure at 100 deg F

Analyst: E.J.

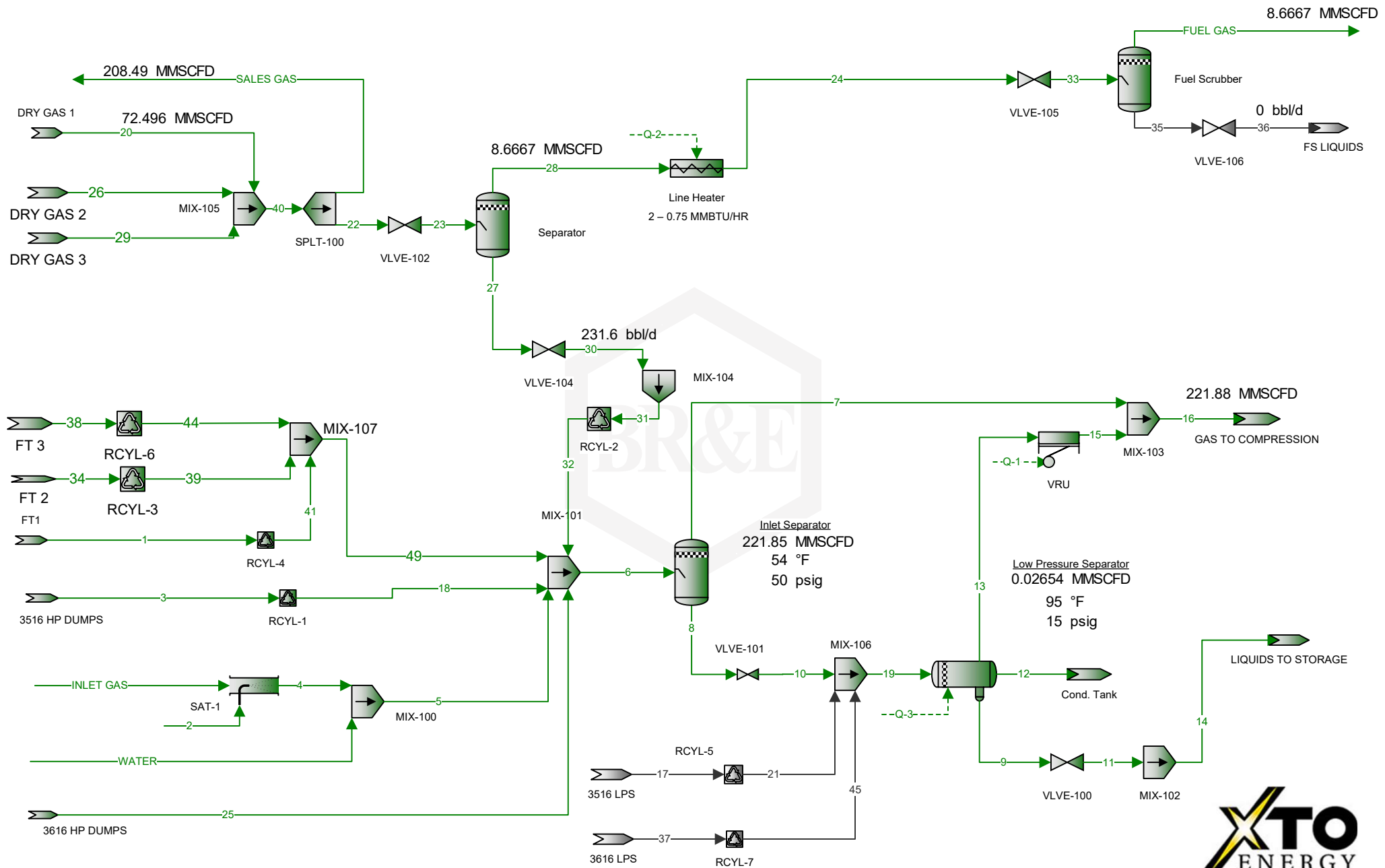
* Sample used for flash study

Base Conditions: 15.025 PSI & 60 °F

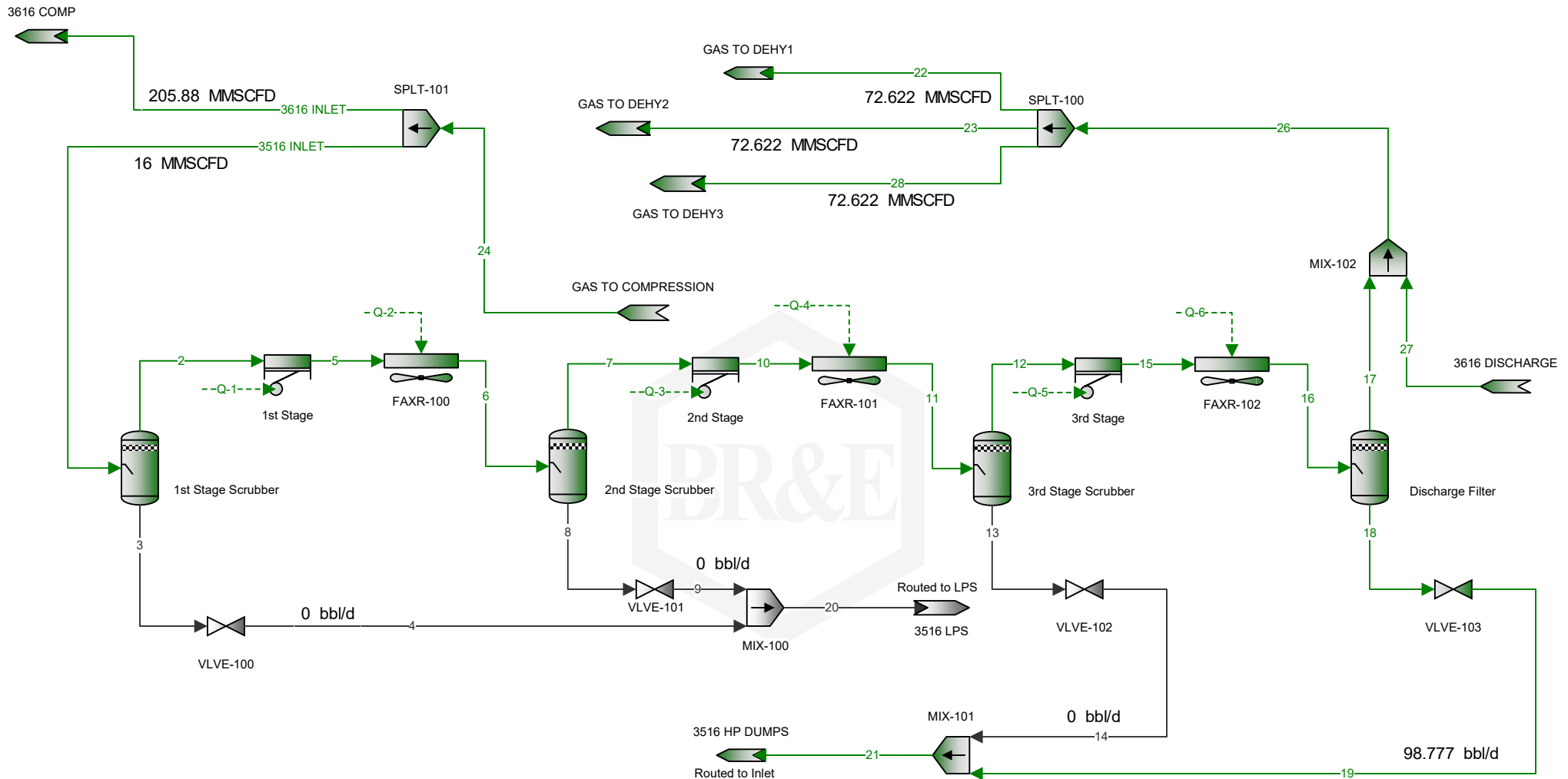
Certified: FESCO, Ltd. - Alice, Texas

David Dannhaus 361-661-7015

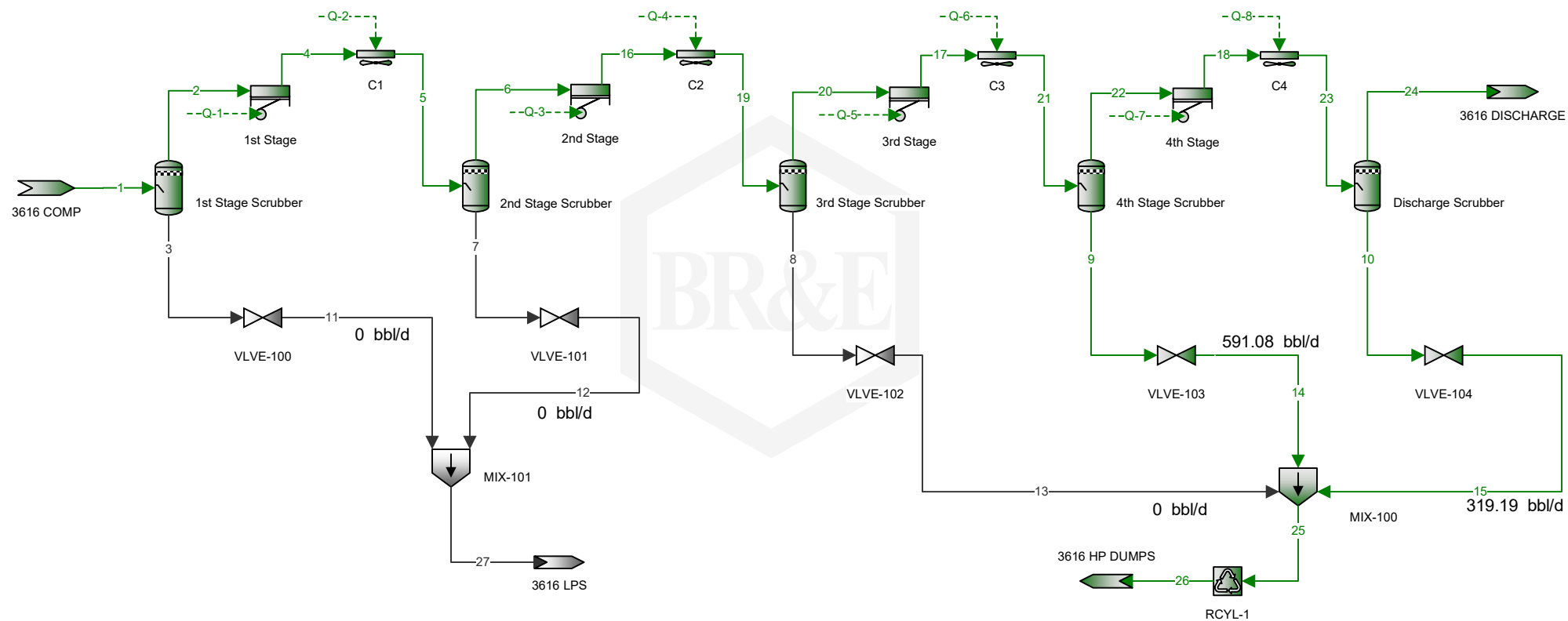
LONGHORN COMPRESSOR STATION



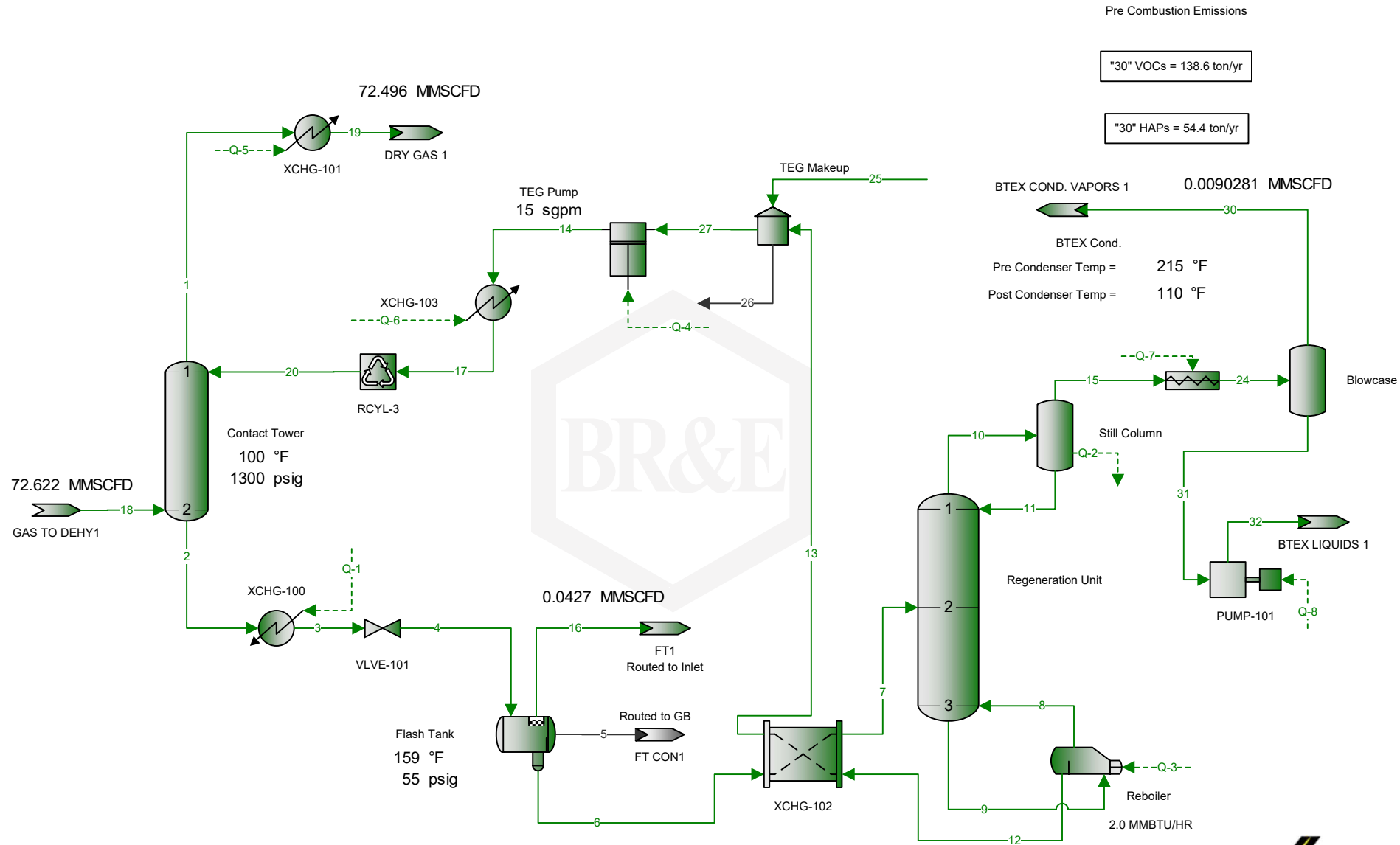
LONGHORN COMPRESSOR STATION



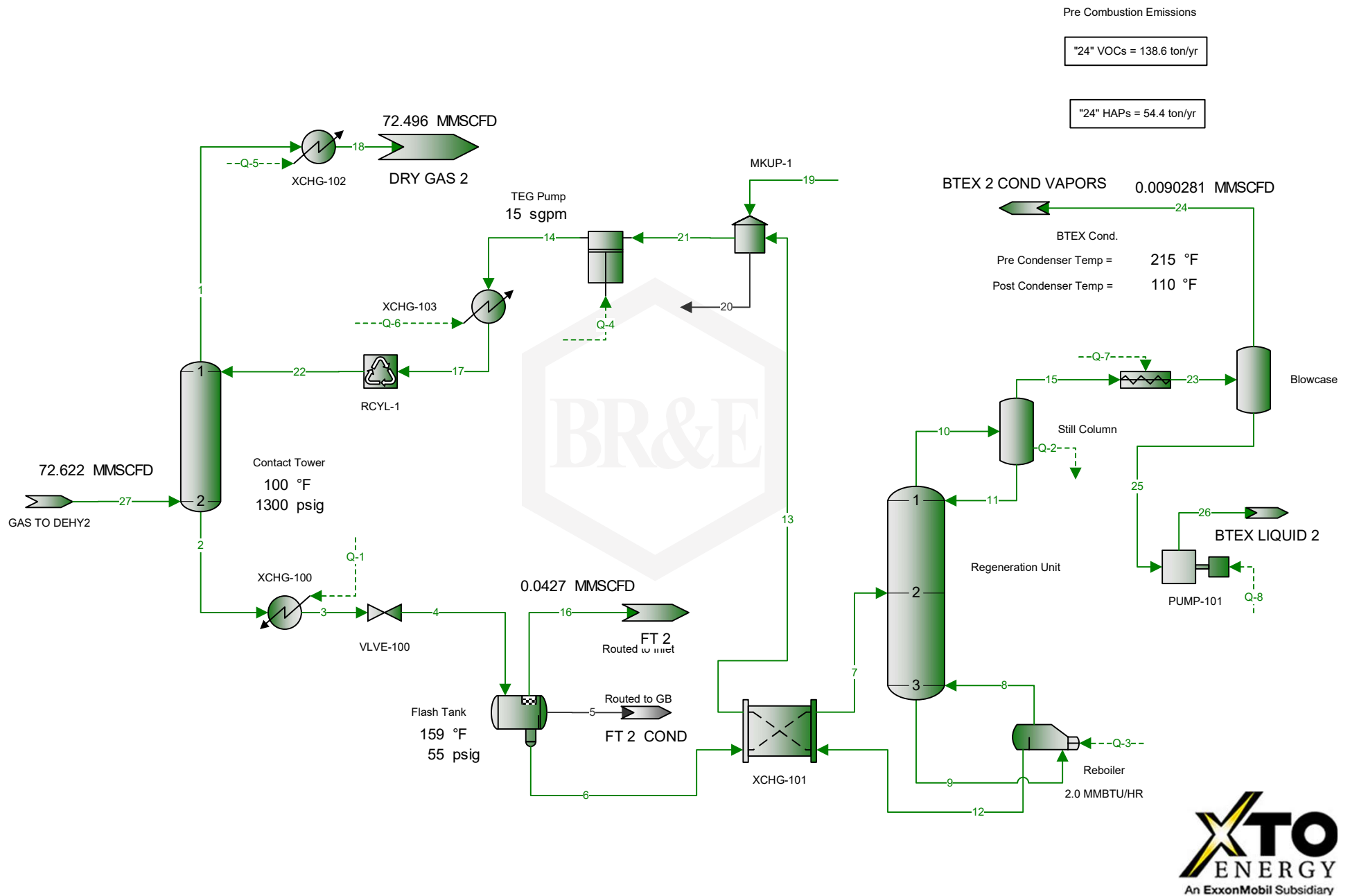
LONGHORN COMPRESSOR STATION



LONGHORN COMPRESSOR STATION



LONGHORN COMPRESSOR STATION

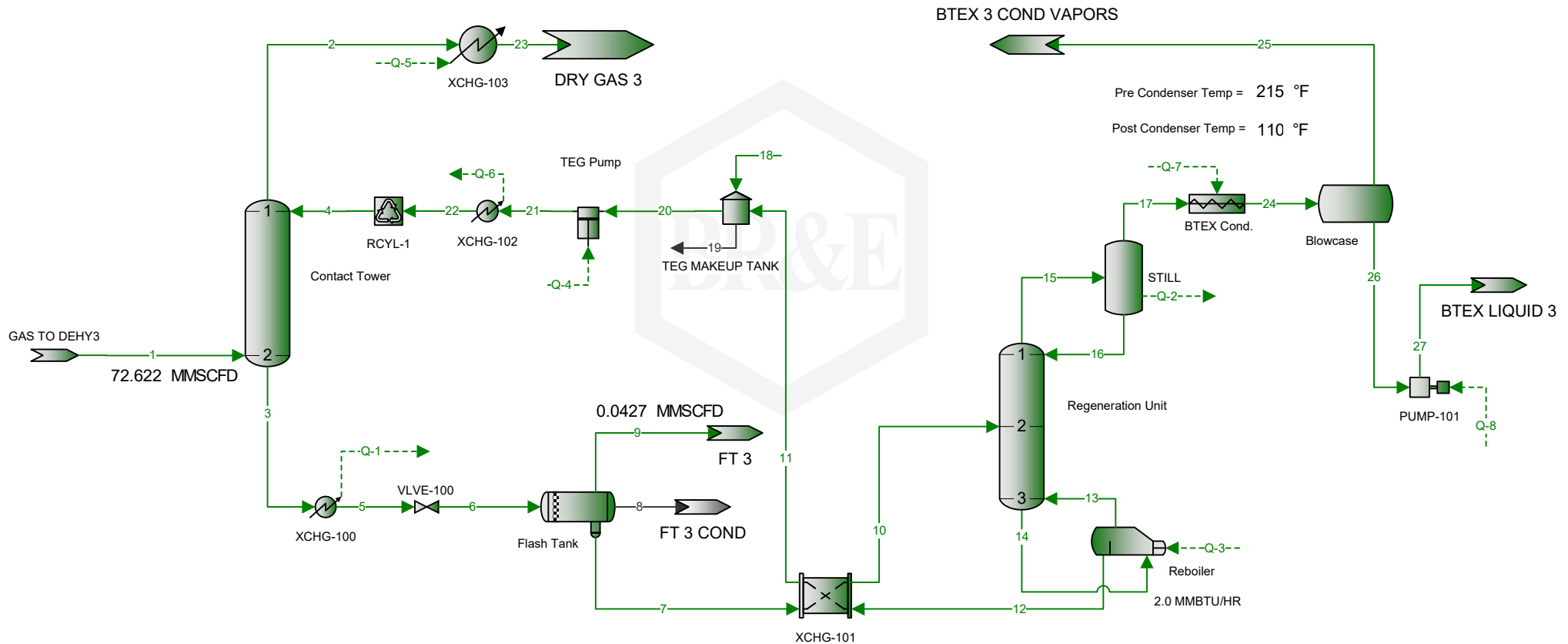


LONGHORN COMPRESSOR STATION

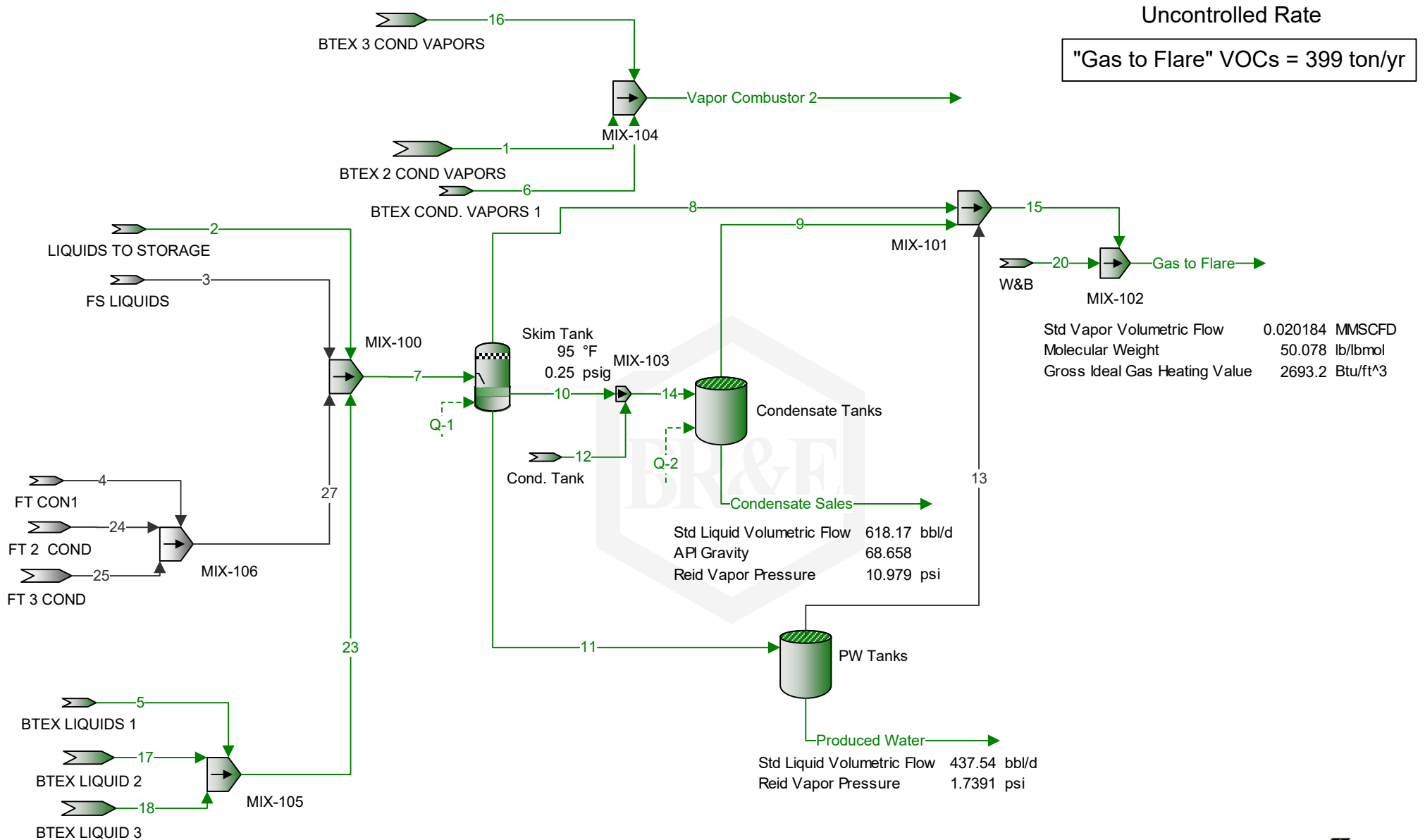
Pre Combustion Emissions

"25" VOCs = 138.6 ton/yr

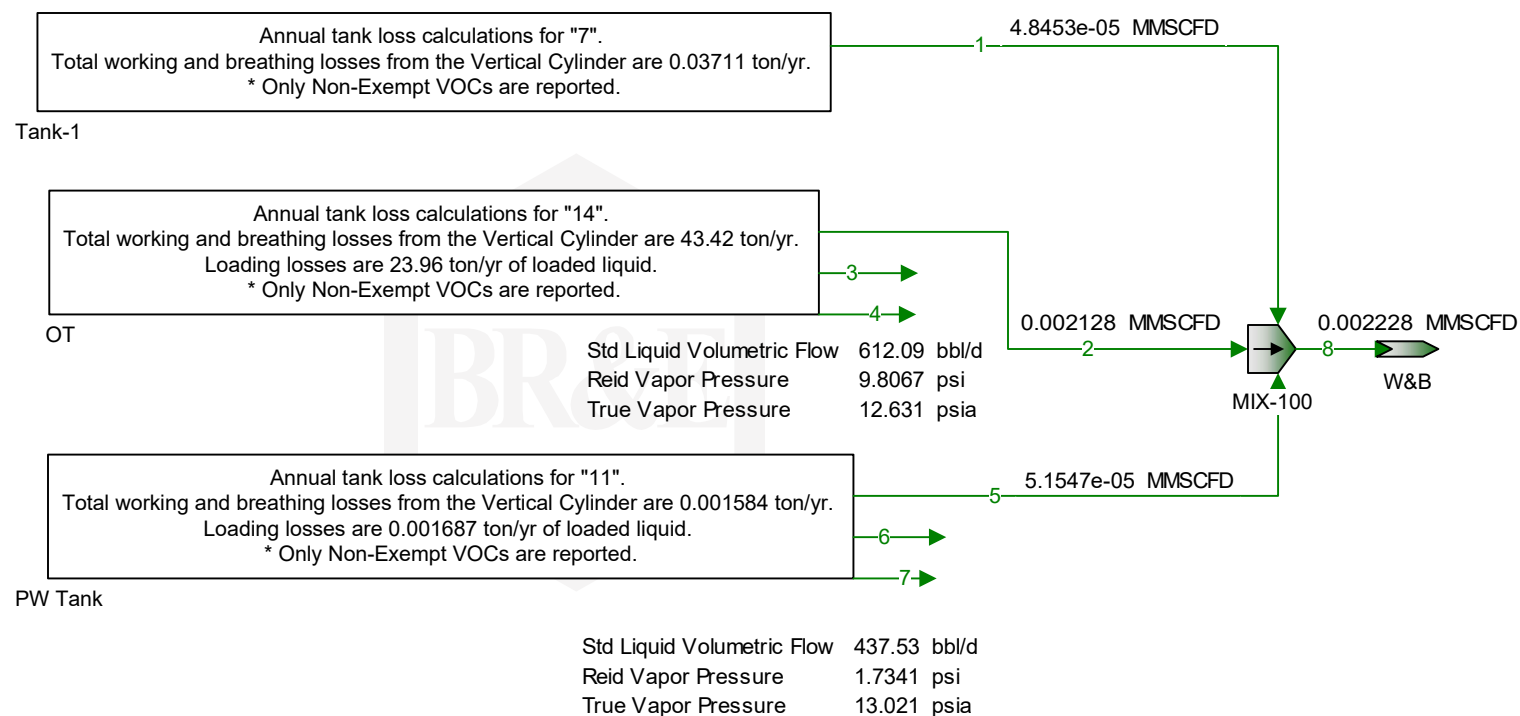
"25" HAPs = 54.4 ton/yr



LONGHORN COMPRESSOR STATION



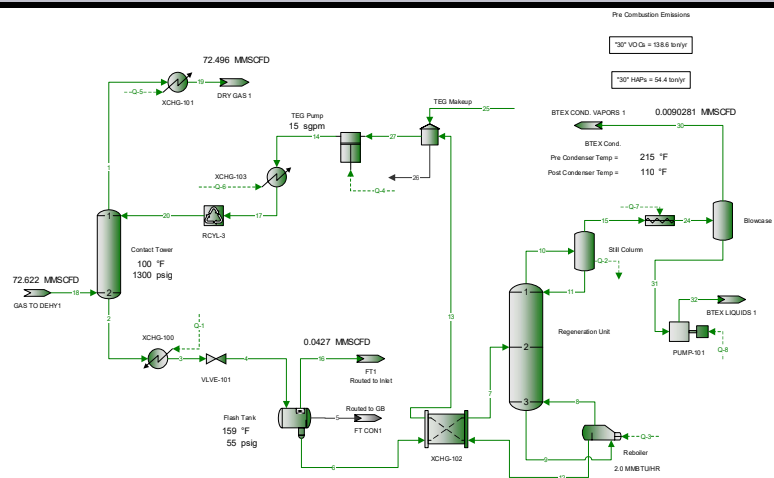
LONGHORN COMPRESSOR STATION



Dehy 1

Plant Schematic

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 1	



* User Specified Values
? Extrapolated or Approximate Values

Process Streams Report

All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 1	

Connections

	1	2	3	4	5
From Block	Contact Tower	Contact Tower	XCHG-100	VLVE-101	Flash Tank
To Block	XCHG-101	XCHG-100	VLVE-101	Flash Tank	FT CON1

Stream Composition

Mole Fraction	1 %	2 %	3 %	4 %	5 %
Carbon Dioxide	5.34213	1.87528	1.87528	1.87528	
Hydrogen Sulfide	0	0	0	0	
Nitrogen	1.69971	0.0195793	0.0195793	0.0195793	
Methane	72.6796	2.81297	2.81297	2.81297	
Ethane	10.2051	0.95511	0.95511	0.95511	
Propane	5.44504	0.735777	0.735777	0.735777	
Isobutane	0.753737	0.092653	0.092653	0.092653	
n-Butane	1.9248	0.334855	0.334855	0.334855	
Isopentane	0.487807	0.106236	0.106236	0.106236	
n-Pentane	0.589213	0.158495	0.158495	0.158495	
Cyclopentane	0	0	0	0	
n-Hexane	0.180596	0.0673548	0.0673548	0.0673548	
Cyclohexane	0.0679639	0.084063	0.084063	0.084063	
i-C6	0.267387	0.0880786	0.0880786	0.0880786	
iC7	0.210489	0.0956181	0.0956181	0.0956181	
Methylcyclohexane	0.0447101	0.0584805	0.0584805	0.0584805	
2,2,4-Trimethylpentane	0	0	0	0	
Benzene	0.0391094	0.431976	0.431976	0.431976	
Toluene	0.0201306	0.312043	0.312043	0.312043	
Ethylbenzene	0.00084708	0.0127018	0.0127018	0.0127018	
o-Xylene	0.00200888	0.0431227	0.0431227	0.0431227	
Octane	0.0343338	0.0226455	0.0226455	0.0226455	
Triethylene Glycol	8.65823E-05	75.3798	75.3798	75.3798	
Water	0.00517444	16.3132	16.3132	16.3132	

Mass Fraction	1 %	2 %	3 %	4 %	5 %
Carbon Dioxide	10.1862	0.690399	0.690399	0.690399	
Hydrogen Sulfide	0	0	0	0	
Nitrogen	2.06296	0.00458828	0.00458828	0.00458828	
Methane	50.5166	0.377504	0.377504	0.377504	
Ethane	13.295	0.240248	0.240248	0.240248	
Propane	10.4027	0.271412	0.271412	0.271412	
Isobutane	1.89807	0.0450493	0.0450493	0.0450493	
n-Butane	4.84705	0.162811	0.162811	0.162811	
Isopentane	1.52485	0.0641192	0.0641192	0.0641192	
n-Pentane	1.84184	0.0956599	0.0956599	0.0956599	
Cyclopentane	0	0	0	0	
n-Hexane	0.674283	0.0485554	0.0485554	0.0485554	
Cyclohexane	0.247817	0.0591827	0.0591827	0.0591827	
i-C6	0.998328	0.063495	0.063495	0.063495	
iC7	0.913812	0.0801498	0.0801498	0.0801498	
Methylcyclohexane	0.190198	0.0480339	0.0480339	0.0480339	
2,2,4-Trimethylpentane	0	0	0	0	
Benzene	0.132357	0.282269	0.282269	0.282269	
Toluene	0.0803615	0.240515	0.240515	0.240515	
Ethylbenzene	0.00389633	0.0112806	0.0112806	0.0112806	
o-Xylene	0.00924029	0.0382978	0.0382978	0.0382978	
Octane	0.169921	0.0216393	0.0216393	0.0216393	
Triethylene Glycol	0.00056334	94.6963	94.6963	94.6963	
Water	0.00403882	2.45848	2.45848	2.45848	

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 1	

Mass Flow	1 lb/h	2 lb/h	3 lb/h	4 lb/h	5 lb/h
Carbon Dioxide	18714	61.1302	61.1302	61.1302	
Hydrogen Sulfide	0	0	0	0	
Nitrogen	3790.06	0.406261	0.406261	0.406261	
Methane	92809	33.4255	33.4255	33.4255	
Ethane	24425.6	21.2723	21.2723	21.2723	
Propane	19111.9	24.0317	24.0317	24.0317	
Isobutane	3487.13	3.98881	3.98881	3.98881	
n-Butane	8905.01	14.4158	14.4158	14.4158	
Isopentane	2801.46	5.67732	5.67732	5.67732	
n-Pentane	3383.82	8.47003	8.47003	8.47003	
Cyclopentane	0	0	0	0	
n-Hexane	1238.79	4.29926	4.29926	4.29926	
Cyclohexane	455.29	5.24023	5.24023	5.24023	
i-C6	1834.13	5.62206	5.62206	5.62206	
iC7	1678.85	7.09673	7.09673	7.09673	
Methylcyclohexane	349.431	4.25307	4.25307	4.25307	
2,2,4-Trimethylpentane	0	0	0	0	
Benzene	243.167	24.993	24.993	24.993	
Toluene	147.64	21.296	21.296	21.296	
Ethylbenzene	7.15834	0.99882	0.99882	0.99882	
o-Xylene	16.9763	3.39101	3.39101	3.39101	
Octane	312.179	1.91601	1.91601	1.91601	
Triethylene Glycol	1.03497	8384.72	8384.72	8384.72	
Water	7.42012	217.682	217.682	217.682	

Stream Properties

Property	Units	1	2	3	4	5
Temperature	°F	100.703	101.068	155 *	158.783	
Molecular Weight	lb/lbmol	23.0807	119.54	119.54	119.54	
Std Vapor Volumetric Flow	MMSCFD	72.4955	0.6746	0.6746	0.6746	0
Std Liquid Volumetric Flow	sgpm	966.939	16.1656	16.1656	16.1656	0
Gross Ideal Gas Heating Value	Btu/ft ³	1224.91	3258.23	3258.23	3258.23	

Remarks

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 1	

Connections

	6	7	8	9	10
From Block	Flash Tank	XCHG-102	Reboiler	Regeneration Unit	Regeneration Unit
To Block	XCHG-102	Regeneration Unit	Regeneration Unit	Reboiler	Still Column

Stream Composition

Mole Fraction	6 %	7 %	8 %	9 %	10 %
Carbon Dioxide	0.44065	0.44065	0.000451832	9.0171E-05	3.28004
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	0.000198146	0.000198146	1.68975E-09	3.349E-10	0.0014749
Methane	0.103295	0.103295	5.94416E-06	1.1798E-06	0.768875
Ethane	0.107941	0.107941	3.62906E-05	7.22408E-06	0.803462
Propane	0.143529	0.143529	0.000122331	2.44151E-05	1.06837
Isobutane	0.0213017	0.0213017	2.59414E-05	5.18604E-06	0.158561
n-Butane	0.100828	0.100828	0.000203679	4.07976E-05	0.750521
Isopentane	0.0463424	0.0463424	0.000213804	4.30506E-05	0.344952
n-Pentane	0.0761897	0.0761897	0.000445906	8.99196E-05	0.56712
Cyclopentane	0	0	0	0	0
n-Hexane	0.0426724	0.0426724	0.000524697	0.000106467	0.317624
Cyclohexane	0.0728074	0.0728074	0.00555555	0.00116382	0.541492
i-C6	0.0512234	0.0512234	0.000504553	0.000102158	0.381278
iC7	0.0696201	0.0696201	0.00141291	0.000288408	0.518172
Methylcyclohexane	0.0528112	0.0528112	0.00526954	0.00111034	0.392612
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.439534	0.439534	0.208611	0.0458011	3.23737
Toluene	0.324041	0.324041	0.302598	0.0684918	2.34505
Ethylbenzene	0.0133024	0.0133024	0.0189449	0.00440573	0.0938524
o-Xylene	0.0454041	0.0454041	0.0953682	0.0229159	0.305967
Octane	0.0197915	0.0197915	0.00115371	0.000239114	0.147244
Triethylene Glycol	80.4728	80.4728	7.41857	75.8587	0.388273
Water	17.3558	17.3558	91.94	23.9963	83.5877

Mass Fraction	6 %	7 %	8 %	9 %	10 %
Carbon Dioxide	0.154609	0.154609	0.000703109	3.35243E-05	5.47768
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	4.42533E-05	4.42533E-05	1.67374E-09	7.92552E-11	0.00156784
Methane	0.0132112	0.0132112	3.37179E-06	1.59891E-07	0.468057
Ethane	0.0258761	0.0258761	3.85845E-05	1.83505E-06	0.916762
Propane	0.0504579	0.0504579	0.000190735	9.09496E-06	1.78767
Isobutane	0.00987078	0.00987078	5.33132E-05	2.54639E-06	0.349712
n-Butane	0.0467214	0.0467214	0.000418588	2.00319E-05	1.6553
Isopentane	0.0266564	0.0266564	0.000545437	2.62395E-05	0.944409
n-Pentane	0.0438247	0.0438247	0.00113755	5.48062E-05	1.55266
Cyclopentane	0	0	0	0	0
n-Hexane	0.0293173	0.0293173	0.00159879	7.7508E-05	1.03865
Cyclohexane	0.0488509	0.0488509	0.0165321	0.000827436	1.72929
i-C6	0.0351921	0.0351921	0.00153741	7.4371E-05	1.2468
iC7	0.0556167	0.0556167	0.00500597	0.000244135	1.97025
Methylcyclohexane	0.04134	0.04134	0.0182946	0.000920983	1.4628
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.273718	0.273718	0.576175	0.0302231	9.5958
Toluene	0.238032	0.238032	0.985839	0.0533122	8.19907
Ethylbenzene	0.0112591	0.0112591	0.0711167	0.00395136	0.378093
o-Xylene	0.03843	0.03843	0.358001	0.0205525	1.23262
Octane	0.0180239	0.0180239	0.00465985	0.000230741	0.638242
Triethylene Glycol	96.3462	96.3462	39.3923	96.2374	2.21259
Water	2.49275	2.49275	58.5659	3.65202	57.142

* User Specified Values

? Extrapolated or Approximate Values

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Process Streams Report All Streams Tabulated by Total Phase						
Client Name:	DELAWARE DIVISION			Job: DELAWARE CS		
Location:	LONGHORN COMPRESSOR STATION					
Flowsheet:	Dehy 1					
Mass Flow	6 lb/h	7 lb/h	8 lb/h	9 lb/h	10 lb/h	
Carbon Dioxide	13.4551	13.4551	0.0029543	0.0029784	13.4554	
Hydrogen Sulfide	0	0	0	0	0	
Nitrogen	0.00385123	0.00385123	7.03266E-09	7.04128E-09	0.00385123	
Methane	1.14973	1.14973	1.41675E-05	1.42052E-05	1.14973	
Ethane	2.25192	2.25192	0.000162123	0.000163032	2.25193	
Propane	4.39119	4.39119	0.000801423	0.000808025	4.39124	
Isobutane	0.859023	0.859023	0.00022401	0.000226229	0.859031	
n-Butane	4.06602	4.06602	0.00175881	0.0017797	4.06608	
Isopentane	2.31982	2.31982	0.0022918	0.00233119	2.31985	
n-Pentane	3.81393	3.81393	0.00477972	0.00486916	3.81395	
Cyclopentane	0	0	0	0	0	
n-Hexane	2.5514	2.5514	0.00671772	0.00688605	2.55133	
Cyclohexane	4.25134	4.25134	0.0694641	0.073512	4.24782	
i-C6	3.06266	3.06266	0.00645982	0.00660735	3.06264	
iC7	4.84014	4.84014	0.0210339	0.0216897	4.83973	
Methylcyclohexane	3.59769	3.59769	0.0768694	0.0818229	3.59322	
2,2,4-Trimethylpentane	0	0	0	0	0	
Benzene	23.8208	23.8208	2.42095	2.68511	23.5711	
Toluene	20.7152	20.7152	4.14226	4.73642	20.1402	
Ethylbenzene	0.979846	0.979846	0.298816	0.351051	0.928748	
o-Xylene	3.34445	3.34445	1.50424	1.82595	3.0278	
Octane	1.56856	1.56856	0.0195796	0.0204998	1.56778	
Triethylene Glycol	8384.71	8384.71	165.517	8550.03	5.43501	
Water	216.936	216.936	246.08	324.456	140.364	
Stream Properties						
Property	Units	6	7	8	9	10
Temperature	°F	158.748	275 *	395 *	301.731	279.891
Molecular Weight	lb/lbmol	125.431	125.431	28.2814	118.373	26.3529
Std Vapor Volumetric Flow	MMSCFD	0.631905	0.631905	0.135312	0.683557	0.0848937
Std Liquid Volumetric Flow	sgpm	15.5462	15.5462	0.804478	15.8023	0.561346
Gross Ideal Gas Heating Value	Btu/ft³	3391.47	3391.47	380.174	3145.97	535.414
Remarks						

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 1	

Connections

	11	12	13	14	15
From Block	Still Column	Reboiler	XCHG-102	TEG Pump	Still Column
To Block	Regeneration Unit	XCHG-102	TEG Makeup	XCHG-103	BTEX Cond.

Stream Composition

Mole Fraction	11 %	12 %	13 %	14 %	15 %
Carbon Dioxide	0.00493028	9.09996E-07	9.09996E-07	9.0987E-07	3.32834
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	1.191E-07	5.11312E-13	5.11312E-13	0	0.00149666
Methane	0.000172519	3.9121E-09	3.9121E-09	0	0.780214
Ethane	0.000429418	5.02085E-08	5.02085E-08	0	0.815307
Propane	0.000888865	2.48721E-07	2.48721E-07	2.48686E-07	1.08411
Isobutane	0.000138103	6.34278E-08	6.34278E-08	6.34191E-08	0.160898
n-Butane	0.00100505	5.97026E-07	5.97026E-07	5.96944E-07	0.761576
Isopentane	0.000625393	9.07127E-07	9.07127E-07	9.07002E-07	0.350031
n-Pentane	0.0011507	2.05923E-06	2.05923E-06	2.05895E-06	0.575469
Cyclopentane	0	0	0	0	0
n-Hexane	0.000912805	3.24491E-06	3.24491E-06	3.24446E-06	0.322296
Cyclohexane	0.0046054	7.99008E-05	7.99008E-05	7.98898E-05	0.549411
i-C6	0.00106362	2.844E-06	2.844E-06	2.8436E-06	0.386886
iC7	0.00173986	1.0873E-05	1.0873E-05	1.08715E-05	0.525789
Methylcyclohexane	0.00365227	8.38096E-05	8.38096E-05	8.3798E-05	0.398349
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.136897	0.00561808	0.00561808	0.00561731	3.28311
Toluene	0.153631	0.0107124	0.0107124	0.0107109	2.37737
Ethylbenzene	0.00790039	0.000817355	0.000817355	0.000817242	0.0951203
o-Xylene	0.0351987	0.00503403	0.00503403	0.00503334	0.309961
Octane	0.000880201	1.33824E-05	1.33824E-05	1.33806E-05	0.149403
Triethylene Glycol	25.7496	92.7504	92.7504	92.7513	0.0141841
Water	73.8946	7.22726	7.22726	7.22634	83.7307

Mass Fraction	11 %	12 %	13 %	14 %	15 %
Carbon Dioxide	0.00414937	2.84822E-07	2.84822E-07	2.8478E-07	5.64025
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	6.3803E-08	1.01868E-13	1.01868E-13	0	0.0016144
Methane	5.29265E-05	4.46343E-10	4.46343E-10	0	0.481957
Ethane	0.000246924	1.0737E-08	1.0737E-08	0	0.943983
Propane	0.000749541	7.80001E-08	7.80001E-08	7.79887E-08	1.84075
Isobutane	0.0001535	2.62186E-08	2.62186E-08	2.62148E-08	0.360094
n-Butane	0.0011171	2.46788E-07	2.46788E-07	2.46751E-07	1.70443
Isopentane	0.000862872	4.65463E-07	4.65463E-07	4.65395E-07	0.972433
n-Pentane	0.00158765	1.05663E-06	1.05663E-06	1.05647E-06	1.59873
Cyclopentane	0	0	0	0	0
n-Hexane	0.00150427	1.98872E-06	1.98872E-06	1.98843E-06	1.06945
Cyclohexane	0.007412	4.78236E-05	4.78236E-05	4.78166E-05	1.78043
i-C6	0.00175281	1.74301E-06	1.74301E-06	1.74276E-06	1.28378
iC7	0.00333393	7.74846E-06	7.74846E-06	7.74732E-06	2.02867
Methylcyclohexane	0.00685768	5.85237E-05	5.85237E-05	5.85151E-05	1.50604
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.204491	0.00312099	0.00312099	0.00312054	9.87473
Toluene	0.270697	0.00701966	0.00701966	0.00701863	8.43455
Ethylbenzene	0.0160396	0.000617135	0.000617135	0.000617044	0.388846
o-Xylene	0.0714616	0.00380089	0.00380089	0.00380033	1.2671
Octane	0.00192274	1.08717E-05	1.08717E-05	1.08701E-05	0.657141
Triethylene Glycol	73.9479	99.0593	99.0593	99.0595	0.0820192
Water	25.4577	0.925983	0.925983	0.925856	58.083

* User Specified Values

? Extrapolated or Approximate Values

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Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 1	

Mass Flow	11 lb/h	12 lb/h	13 lb/h	14 lb/h	15 lb/h
Carbon Dioxide	0.000293991	2.41077E-05	2.41077E-05	2.41077E-05	13.4551
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	4.52056E-09	8.62228E-12	8.62228E-12	0	0.00385123
Methane	3.74994E-06	3.7779E-08	3.7779E-08	0	1.14973
Ethane	1.74951E-05	9.08798E-07	9.08798E-07	0	2.25192
Propane	5.31064E-05	6.60203E-06	6.60203E-06	6.60203E-06	4.39119
Isobutane	1.08758E-05	2.21918E-06	2.21918E-06	2.21918E-06	0.85902
n-Butane	7.91488E-05	2.08884E-05	2.08884E-05	2.08884E-05	4.066
Isopentane	6.11361E-05	3.93974E-05	3.93974E-05	3.93974E-05	2.31978
n-Pentane	0.000112488	8.94344E-05	8.94344E-05	8.94344E-05	3.81384
Cyclopentane	0	0	0	0	0
n-Hexane	0.00010658	0.000168328	0.000168328	0.000168328	2.55123
Cyclohexane	0.000525154	0.00404785	0.00404785	0.00404785	4.24729
i-C6	0.00012419	0.000147531	0.000147531	0.000147531	3.06251
iC7	0.000236215	0.000655839	0.000655839	0.000655839	4.83949
Methylcyclohexane	0.00048588	0.00495352	0.00495352	0.00495352	3.59274
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.0144886	0.264165	0.264165	0.264165	23.5566
Toluene	0.0191794	0.594153	0.594153	0.594153	20.121
Ethylbenzene	0.00113644	0.0522351	0.0522351	0.0522351	0.927611
o-Xylene	0.00506319	0.321712	0.321712	0.321712	3.02273
Octane	0.00013623	0.000920194	0.000920194	0.000920194	1.56764
Triethylene Glycol	5.23935	8384.51	8384.51	8385.75	0.195661
Water	1.80372	78.3764	78.3764	78.3771	138.56

Stream Properties

Property	Units	11	12	13	14	15
Temperature	°F	215 *	395	282.068	283.86	215
Molecular Weight	lb/lbmol	52.292	140.609	140.609	140.61	25.9703
Std Vapor Volumetric Flow	MMSCFD	0.00123402	0.548246	0.548246	0.548321	0.0836597
Std Liquid Volumetric Flow	sgpm	0.012975	14.9978	14.9978	15	0.548371
Gross Ideal Gas Heating Value	Btu/ft ³	1113.81	3828.59	3828.59	3828.63	526.883

Remarks

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 1	

Connections

	16	17	18	19	20
From Block	Flash Tank	XCHG-103	GAS TO DEHY1	XCHG-101	RCYL-3
To Block	FT1	RCYL-3	Contact Tower	DRY GAS 1	Contact Tower

Stream Composition

Mole Fraction	16 %	17 %	18 %	19 %	20 %
Carbon Dioxide	23.1085	9.0987E-07	5.35026	5.34213	9.11723E-07
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	0.306429	0	1.69693	1.69971	0
Methane	42.9172	0	72.5794	72.6796	0
Ethane	13.4936	0	10.1962	10.2051	0
Propane	9.5013	2.48686E-07	5.4424	5.44504	2.49233E-07
Isobutane	1.14868	6.34191E-08	0.753287	0.753737	6.35605E-08
n-Butane	3.79855	5.96944E-07	1.92456	1.9248	5.98245E-07
Isopentane	0.992689	9.07002E-07	0.487946	0.487807	9.08996E-07
n-Pentane	1.37664	2.05895E-06	0.58966	0.589213	2.0635E-06
Cyclopentane	0	0	0	0	0
n-Hexane	0.432663	3.24446E-06	0.180908	0.180596	3.25163E-06
Cyclohexane	0.250651	7.98898E-05	0.068626	0.0679639	8.00589E-05
i-C6	0.63355	2.8436E-06	0.26774	0.267387	2.84978E-06
iC7	0.480398	1.08715E-05	0.211012	0.210489	1.0896E-05
Methylcyclohexane	0.142388	8.3798E-05	0.0451749	0.0447101	8.39817E-05
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.320121	0.00561731	0.0430116	0.0391094	0.00562817
Toluene	0.134467	0.0107109	0.0229132	0.0201306	0.0107336
Ethylbenzene	0.00381243	0.000817242	0.000957411	0.00084708	0.000819191
o-Xylene	0.00935709	0.00503334	0.00236785	0.00200888	0.00504807
Octane	0.0648854	1.33806E-05	0.0344844	0.0343338	1.34139E-05
Triethylene Glycol	0.00148919	92.7513	9.6781E-17	8.65823E-05	92.7517
Water	0.882678	7.22634	0.102144	0.00517444	7.2259

Mass Fraction	16 %	17 %	18 %	19 %	20 %
Carbon Dioxide	31.4402	2.8478E-07	10.1979	10.1862	2.85359E-07
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	0.265376	0	2.05882	2.06296	0
Methane	21.2848	0	50.428	50.5166	0
Ethane	12.5434	0	13.2785	13.295	0
Propane	12.9523	7.79887E-08	10.3938	10.4027	7.81599E-08
Isobutane	2.064	2.62148E-08	1.89623	1.89807	2.62731E-08
n-Butane	6.82538	2.46751E-07	4.84464	4.84705	2.47288E-07
Isopentane	2.21416	4.65395E-07	1.52471	1.52485	4.66416E-07
n-Pentane	3.07055	1.05647E-06	1.84255	1.84184	1.0588E-06
Cyclopentane	0	0	0	0	0
n-Hexane	1.15266	1.98843E-06	0.675194	0.674283	1.99281E-06
Cyclohexane	0.652137	4.78166E-05	0.250138	0.247817	4.79176E-05
i-C6	1.68784	1.74276E-06	0.999272	0.998328	1.74653E-06
iC7	1.48814	7.74732E-06	0.915735	0.913812	7.76471E-06
Methylcyclohexane	0.432206	5.85151E-05	0.192103	0.190198	5.86431E-05
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.773034	0.00312054	0.145509	0.132357	0.00312656
Toluene	0.383021	0.00701863	0.0914354	0.0803615	0.00703348
Ethylbenzene	0.0125127	0.000617044	0.00440218	0.00389633	0.000618513
o-Xylene	0.0307107	0.00380033	0.0108874	0.00924029	0.00381144
Octane	0.229134	1.08701E-05	0.170602	0.169921	1.08972E-05
Triethylene Glycol	0.00691367	99.0595	6.29462E-16	0.00056334	99.0595
Water	0.491599	0.925856	0.0796972	0.00403882	0.925797

* User Specified Values

? Extrapolated or Approximate Values

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Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 1	

Mass Flow	16 lb/h	17 lb/h	18 lb/h	19 lb/h	20 lb/h
Carbon Dioxide	47.6751	2.41077E-05	18775.2	18714	2.41567E-05
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	0.40241	0	3790.47	3790.06	0
Methane	32.2757	0	92842.4	92809	0
Ethane	19.0204	0	24446.8	24425.6	0
Propane	19.6405	6.60203E-06	19135.9	19111.9	6.61653E-06
Isobutane	3.12979	2.21918E-06	3491.12	3487.13	2.22412E-06
n-Butane	10.3498	2.08884E-05	8919.42	8905.01	2.09339E-05
Isopentane	3.3575	3.93974E-05	2807.13	2801.46	3.94839E-05
n-Pentane	4.65611	8.94344E-05	3392.29	3383.82	8.96316E-05
Cyclopentane	0	0	0	0	0
n-Hexane	1.74786	0.000168328	1243.09	1238.79	0.000168699
Cyclohexane	0.988884	0.00404785	460.526	455.29	0.00405641
i-C6	2.55939	0.000147531	1839.75	1834.13	0.000147851
iC7	2.25658	0.000655839	1685.95	1678.85	0.000657312
Methylcyclohexane	0.655386	0.00495352	353.679	349.431	0.00496436
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	1.17221	0.264165	267.895	243.167	0.264675
Toluene	0.580803	0.594153	168.341	147.64	0.59541
Ethylbenzene	0.0189739	0.0522351	8.1048	7.15834	0.0523595
o-Xylene	0.0465689	0.321712	20.0446	16.9763	0.322653
Octane	0.347452	0.000920194	314.094	312.179	0.000922485
Triethylene Glycol	0.0104837	8385.75	1.1589E-12	1.03497	8385.75
Water	0.745447	78.3771	146.73	7.42012	78.3722

Stream Properties

Property	Units	16	17	18	19	20
Temperature	°F	158.748	95 *	100	90 *	95
Molecular Weight	lb/lbmol	32.3469	140.61	23.0894	23.0807	140.61
Std Vapor Volumetric Flow	MMSCFD	0.0426951	0.548321	72.6218	72.4955	0.548319
Std Liquid Volumetric Flow	sgpm	0.619438	15	968.105	966.939	15
Gross Ideal Gas Heating Value	Btu/ft ³	1286.24	3828.63	1224.14	1224.91	3828.64

Remarks

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 1	

Connections

	24	25	26	27	30
From Block	BTEX Cond.	--	TEG Makeup	TEG Makeup	Blowcase
To Block	Blowcase	TEG Makeup	--	TEG Pump	BTEX COND. VAPORS 1

Stream Composition

Mole Fraction	24 %	25 %	26 %	27 %	30 %
Carbon Dioxide	3.32834	0 *	9.09996E-07	9.0987E-07	30.5787
Hydrogen Sulfide	0	0 *	0	0	0
Nitrogen	0.00149666	0 *	5.11312E-13	0	0.0138616
Methane	0.780214	0 *	3.9121E-09	0	7.2158
Ethane	0.815307	0 *	5.02085E-08	0	7.47339
Propane	1.08411	0 *	2.48721E-07	2.48686E-07	9.72518
Isobutane	0.160898	0 *	6.34278E-08	6.34191E-08	1.38569
n-Butane	0.761576	0 *	5.97026E-07	5.96944E-07	6.33619
Isopentane	0.350031	0 *	9.07127E-07	9.07002E-07	2.55796
n-Pentane	0.575469	0 *	2.05923E-06	2.05895E-06	3.9647
Cyclopentane	0	0 *	0	0	0
n-Hexane	0.322296	0 *	3.24491E-06	3.24446E-06	1.47448
Cyclohexane	0.549411	0 *	7.99008E-05	7.98898E-05	1.96733
i-C6	0.386886	0 *	2.844E-06	2.8436E-06	2.04075
iC7	0.525789	0 *	1.0873E-05	1.08715E-05	1.54357
Methylcyclohexane	0.398349	0 *	8.38096E-05	8.3798E-05	0.823951
2,2,4-Trimethylpentane	0	0 *	0	0	0
Benzene	3.28311	0 *	0.00561808	0.00561731	10.3369
Toluene	2.37737	0 *	0.0107124	0.0107109	3.22353
Ethylbenzene	0.0951203	0 *	0.000817355	0.000817242	0.0432602
o-Xylene	0.309961	0 *	0.00503403	0.00503334	0.158683
Octane	0.149403	0 *	1.33824E-05	1.33806E-05	0.128958
Triethylene Glycol	0.0141841	99.5 *	92.7504	92.7513	1.07128E-07
Water	83.7307	0.5 *	7.22726	7.22634	9.00714

Mass Fraction	24 %	25 %	26 %	27 %	30 %
Carbon Dioxide	5.64025	0 *	2.84822E-07	2.8478E-07	26.6919
Hydrogen Sulfide	0	0 *	0	0	0
Nitrogen	0.0016144	0 *	1.01868E-13	0	0.0077018
Methane	0.481957	0 *	4.46343E-10	0	2.29598
Ethane	0.943983	0 *	1.0737E-08	0	4.45708
Propane	1.84075	0 *	7.80001E-08	7.79887E-08	8.50563
Isobutane	0.360094	0 *	2.62186E-08	2.62148E-08	1.59742
n-Butane	1.70443	0 *	2.46788E-07	2.46751E-07	7.30438
Isopentane	0.972433	0 *	4.65463E-07	4.65395E-07	3.66047
n-Pentane	1.59873	0 *	1.05663E-06	1.05647E-06	5.67351
Cyclopentane	0	0 *	0	0	0
n-Hexane	1.06945	0 *	1.98872E-06	1.98843E-06	2.5202
Cyclohexane	1.78043	0 *	4.78236E-05	4.78166E-05	3.28393
i-C6	1.28378	0 *	1.74301E-06	1.74276E-06	3.48808
iC7	2.02867	0 *	7.74846E-06	7.74732E-06	3.06771
Methylcyclohexane	1.50604	0 *	5.85237E-05	5.85151E-05	1.60459
2,2,4-Trimethylpentane	0	0 *	0	0	0
Benzene	9.87473	0 *	0.00312099	0.00312054	16.0147
Toluene	8.43455	0 *	0.00701966	0.00701863	5.89095
Ethylbenzene	0.388846	0 *	0.000617135	0.000617044	0.0910927
o-Xylene	1.2671	0 *	0.00380089	0.00380033	0.334138
Octane	0.657141	0 *	1.08717E-05	1.08701E-05	0.292171
Triethylene Glycol	0.0820192	99.9398 *	99.0593	99.0595	3.19086E-07
Water	58.083	0.0602469 *	0.925983	0.925856	3.21841

* User Specified Values

? Extrapolated or Approximate Values

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Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 1	

Mass Flow	24 lb/h	25 lb/h	26 lb/h	27 lb/h	30 lb/h
Carbon Dioxide	13.4551	0 *	0	2.41077E-05	13.3401
Hydrogen Sulfide	0	0 *	0	0	0
Nitrogen	0.00385123	0 *	0	0	0.00384921
Methane	1.14973	0 *	0	0	1.14749
Ethane	2.25192	0 *	0	0	2.22756
Propane	4.39119	0 *	0	6.60203E-06	4.25095
Isobutane	0.85902	0 *	0	2.21918E-06	0.798361
n-Butane	4.066	0 *	0	2.08884E-05	3.65059
Isopentane	2.31978	0 *	0	3.93974E-05	1.82943
n-Pentane	3.81384	0 *	0	8.94344E-05	2.83551
Cyclopentane	0	0 *	0	0	0
n-Hexane	2.55123	0 *	0	0.000168328	1.25955
Cyclohexane	4.24729	0 *	0	0.00404785	1.64124
i-C6	3.06251	0 *	0	0.000147531	1.74327
iC7	4.83949	0 *	0	0.000655839	1.53318
Methylcyclohexane	3.59274	0 *	0	0.00495352	0.801943
2,2,4-Trimethylpentane	0	0 *	0	0	0
Benzene	23.5566	0 *	0	0.264165	8.00383
Toluene	20.121	0 *	0	0.594153	2.94418
Ethylbenzene	0.927611	0 *	0	0.0522351	0.0455264
o-Xylene	3.02273	0 *	0	0.321712	0.166996
Octane	1.56764	0 *	0	0.000920194	0.146021
Triethylene Glycol	0.195661	1.23915 *	0	8385.75	1.59473E-07
Water	138.56	0.000747001 *	0	78.3771	1.6085

Stream Properties

Property	Units	24	25	26	27	30
Temperature	°F	110 *	85 *		282.041	110
Molecular Weight	lb/lbmol	25.9703	149.512	140.609	140.61	50.4181
Std Vapor Volumetric Flow	MMSCFD	0.0836597	7.55292E-05	0	0.548321	0.00902812
Std Liquid Volumetric Flow	sgpm	0.548371	0.00219446	0	15 *	0.148497
Gross Ideal Gas Heating Value	Btu/ft³	526.883	4102.48	3828.59	3828.63	1899.31

Remarks

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 1	

Connections

	31	32			
From Block	Blowcase	PUMP-101			
To Block	PUMP-101	BTEX LIQUIDS 1			

Stream Composition

Mole Fraction	31 %	32 %			
Carbon Dioxide	0.031888	0.031888			
Hydrogen Sulfide	0	0			
Nitrogen	8.78074E-07	8.78074E-07			
Methane	0.00170611	0.00170611			
Ethane	0.00988457	0.00988457			
Propane	0.0388109	0.0388109			
Isobutane	0.0127362	0.0127362			
n-Butane	0.0872199	0.0872199			
Isopentane	0.0829398	0.0829398			
n-Pentane	0.165477	0.165477			
Cyclopentane	0	0			
n-Hexane	0.182917	0.182917			
Cyclohexane	0.377887	0.377887			
i-C6	0.18682	0.18682			
iC7	0.40267	0.40267			
Methylcyclohexane	0.346864	0.346864			
2,2,4-Trimethylpentane	0	0			
Benzene	2.42982	2.42982			
Toluene	2.27502	2.27502			
Ethylbenzene	0.101394	0.101394			
o-Xylene	0.328261	0.328261			
Octane	0.151877	0.151877			
Triethylene Glycol	0.0158999	0.0158999			
Water	92.7699	92.7699			

Mass Fraction	31 %	32 %			
Carbon Dioxide	0.0609823	0.0609823			
Hydrogen Sulfide	0	0			
Nitrogen	1.06887E-06	1.06887E-06			
Methane	0.00118935	0.00118935			
Ethane	0.0129154	0.0129154			
Propane	0.0743667	0.0743667			
Isobutane	0.032167	0.032167			
n-Butane	0.220286	0.220286			
Isopentane	0.260029	0.260029			
n-Pentane	0.518795	0.518795			
Cyclopentane	0	0			
n-Hexane	0.684964	0.684964			
Cyclohexane	1.38196	1.38196			
i-C6	0.699578	0.699578			
iC7	1.75329	1.75329			
Methylcyclohexane	1.47992	1.47992			
2,2,4-Trimethylpentane	0	0			
Benzene	8.24747	8.24747			
Toluene	9.10867	9.10867			
Ethylbenzene	0.467759	0.467759			
o-Xylene	1.51436	1.51436			
Octane	0.753868	0.753868			
Triethylene Glycol	0.103756	0.103756			
Water	72.6237	72.6237			

* User Specified Values

? Extrapolated or Approximate Values

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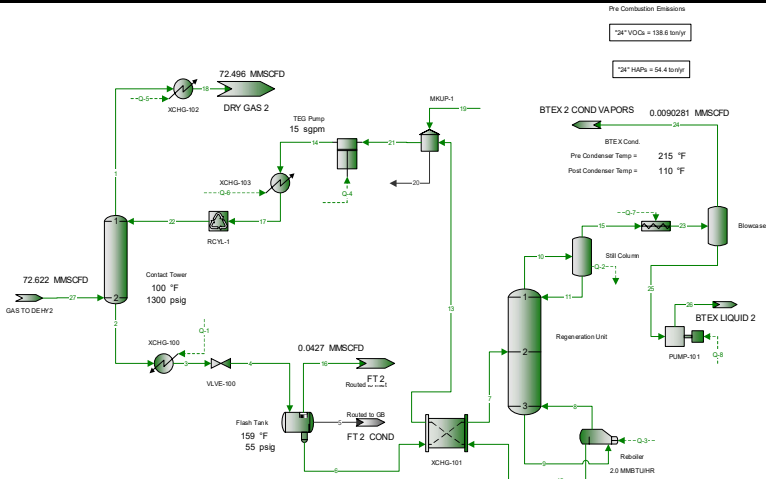
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Process Streams Report All Streams Tabulated by Total Phase					
Client Name:	DELAWARE DIVISION			Job: DELAWARE CS	
Location:	LONGHORN COMPRESSOR STATION				
Flowsheet:	Dehy 1				
Mass Flow	31 lb/h	32 lb/h			
Carbon Dioxide	0.114998	0.114998			
Hydrogen Sulfide	0	0			
Nitrogen	2.01565E-06	2.01565E-06			
Methane	0.00224283	0.00224283			
Ethane	0.0243554	0.0243554			
Propane	0.140238	0.140238			
Isobutane	0.0606595	0.0606595			
n-Butane	0.415409	0.415409			
Isopentane	0.490355	0.490355			
n-Pentane	0.978327	0.978327			
Cyclopentane	0	0			
n-Hexane	1.29168	1.29168			
Cyclohexane	2.60605	2.60605			
i-C6	1.31924	1.31924			
iC7	3.30631	3.30631			
Methylcyclohexane	2.79079	2.79079			
2,2,4-Trimethylpentane	0	0			
Benzene	15.5528	15.5528			
Toluene	17.1768	17.1768			
Ethylbenzene	0.882085	0.882085			
o-Xylene	2.85574	2.85574			
Octane	1.42162	1.42162			
Triethylene Glycol	0.195661	0.195661			
Water	136.951	136.951			
Stream Properties					
Property	Units	31	32		
Temperature	°F	110	126.093		
Molecular Weight	lb/lbmol	23.0128	23.0128		
Std Vapor Volumetric Flow	MMSCFD	0.0746316	0.0746316		
Std Liquid Volumetric Flow	sgpm	0.399874	0.399874		
Gross Ideal Gas Heating Value	Btu/ft ³	360.861	360.861		
Remarks					

Dehy 2

Plant Schematic

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 2	



Process Streams Report

All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 2	

Connections

	1	2	3	4	5
From Block	Contact Tower	Contact Tower	XCHG-100	VLVE-100	Flash Tank
To Block	XCHG-102	XCHG-100	VLVE-100	Flash Tank	FT 2 COND

Stream Composition

Mole Fraction	1 %	2 %	3 %	4 %	5 %
Carbon Dioxide	5.34213	1.87528	1.87528	1.87528	
Hydrogen Sulfide	0	0	0	0	
Nitrogen	1.69971	0.0195793	0.0195793	0.0195793	
Methane	72.6796	2.81296	2.81296	2.81296	
Ethane	10.2051	0.95511	0.95511	0.95511	
Propane	5.44504	0.735778	0.735778	0.735778	
Isobutane	0.753737	0.0926531	0.0926531	0.0926531	
n-Butane	1.9248	0.334855	0.334855	0.334855	
Isopentane	0.487807	0.106236	0.106236	0.106236	
n-Pentane	0.589213	0.158495	0.158495	0.158495	
Cyclopentane	0	0	0	0	
n-Hexane	0.180596	0.067355	0.067355	0.067355	
Cyclohexane	0.0679639	0.0840634	0.0840634	0.0840634	
i-C6	0.267387	0.0880788	0.0880788	0.0880788	
iC7	0.210489	0.0956185	0.0956185	0.0956185	
Methylcyclohexane	0.04471	0.0584808	0.0584808	0.0584808	
2,2,4-Trimethylpentane	0	0	0	0	
Benzene	0.0391093	0.431978	0.431978	0.431978	
Toluene	0.0201306	0.312045	0.312045	0.312045	
Ethylbenzene	0.000847084	0.0127018	0.0127018	0.0127018	
o-Xylene	0.00200891	0.0431231	0.0431231	0.0431231	
Octane	0.0343338	0.0226456	0.0226456	0.0226456	
Triethylene Glycol	8.65839E-05	75.3798	75.3798	75.3798	
Water	0.00517455	16.3132	16.3132	16.3132	

Mass Fraction	1 %	2 %	3 %	4 %	5 %
Carbon Dioxide	10.1862	0.690398	0.690398	0.690398	
Hydrogen Sulfide	0	0	0	0	
Nitrogen	2.06296	0.00458826	0.00458826	0.00458826	
Methane	50.5166	0.377504	0.377504	0.377504	
Ethane	13.295	0.240248	0.240248	0.240248	
Propane	10.4027	0.271412	0.271412	0.271412	
Isobutane	1.89807	0.0450494	0.0450494	0.0450494	
n-Butane	4.84705	0.162812	0.162812	0.162812	
Isopentane	1.52485	0.0641193	0.0641193	0.0641193	
n-Pentane	1.84184	0.0956601	0.0956601	0.0956601	
Cyclopentane	0	0	0	0	
n-Hexane	0.674283	0.0485556	0.0485556	0.0485556	
Cyclohexane	0.247817	0.0591829	0.0591829	0.0591829	
i-C6	0.998328	0.0634952	0.0634952	0.0634952	
iC7	0.913812	0.0801502	0.0801502	0.0801502	
Methylcyclohexane	0.190198	0.0480341	0.0480341	0.0480341	
2,2,4-Trimethylpentane	0	0	0	0	
Benzene	0.132357	0.28227	0.28227	0.28227	
Toluene	0.0803615	0.240516	0.240516	0.240516	
Ethylbenzene	0.00389635	0.0112807	0.0112807	0.0112807	
o-Xylene	0.00924044	0.0382981	0.0382981	0.0382981	
Octane	0.169921	0.0216394	0.0216394	0.0216394	
Triethylene Glycol	0.000563351	94.6963	94.6963	94.6963	
Water	0.0040389	2.45848	2.45848	2.45848	

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 2	

Mass Flow	1 lb/h	2 lb/h	3 lb/h	4 lb/h	5 lb/h
Carbon Dioxide	18714	61.1301	61.1301	61.1301	
Hydrogen Sulfide	0	0	0	0	
Nitrogen	3790.06	0.40626	0.40626	0.40626	
Methane	92809	33.4254	33.4254	33.4254	
Ethane	24425.6	21.2723	21.2723	21.2723	
Propane	19111.9	24.0317	24.0317	24.0317	
Isobutane	3487.13	3.98882	3.98882	3.98882	
n-Butane	8905.01	14.4159	14.4159	14.4159	
Isopentane	2801.46	5.67733	5.67733	5.67733	
n-Pentane	3383.82	8.47005	8.47005	8.47005	
Cyclopentane	0	0	0	0	
n-Hexane	1238.79	4.29927	4.29927	4.29927	
Cyclohexane	455.29	5.24025	5.24025	5.24025	
i-C6	1834.13	5.62207	5.62207	5.62207	
iC7	1678.85	7.09675	7.09675	7.09675	
Methylcyclohexane	349.431	4.25309	4.25309	4.25309	
2,2,4-Trimethylpentane	0	0	0	0	
Benzene	243.167	24.9931	24.9931	24.9931	
Toluene	147.64	21.2961	21.2961	21.2961	
Ethylbenzene	7.15838	0.998826	0.998826	0.998826	
o-Xylene	16.9765	3.39104	3.39104	3.39104	
Octane	312.179	1.91602	1.91602	1.91602	
Triethylene Glycol	1.03499	8384.72	8384.72	8384.72	
Water	7.42027	217.681	217.681	217.681	

Stream Properties

Property	Units	1	2	3	4	5
Temperature	°F	100.703	101.068	155 *	158.783	
Molecular Weight	lb/lbmol	23.0807	119.54	119.54	119.54	
Std Vapor Volumetric Flow	MMSCFD	72.4955	0.6746	0.6746	0.6746	0
Std Liquid Volumetric Flow	sgpm	966.939	16.1656	16.1656	16.1656	0
Gross Ideal Gas Heating Value	Btu/ft ³	1224.91	3258.23	3258.23	3258.23	

Remarks

Process Streams Report All Streams Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 2	

Connections

	6	7	8	9	10
From Block	Flash Tank	XCHG-101	Reboiler	Regeneration Unit	Regeneration Unit
To Block	XCHG-101	Regeneration Unit	Regeneration Unit	Reboiler	Still Column

Stream Composition

Mole Fraction	6 %	7 %	8 %	9 %	10 %
Carbon Dioxide	0.44065	0.44065	0.00045183	9.01704E-05	3.28004
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	0.000198146	0.000198146	1.68973E-09	3.34896E-10	0.0014749
Methane	0.103295	0.103295	5.94412E-06	1.17978E-06	0.768875
Ethane	0.107941	0.107941	3.62905E-05	7.22403E-06	0.803463
Propane	0.143529	0.143529	0.00012233	2.4415E-05	1.06837
Isobutane	0.0213018	0.0213018	2.59414E-05	5.18602E-06	0.158561
n-Butane	0.100828	0.100828	0.000203679	4.07974E-05	0.750523
Isopentane	0.0463426	0.0463426	0.000213805	4.30505E-05	0.344954
n-Pentane	0.0761899	0.0761899	0.000445906	8.99195E-05	0.567123
Cyclopentane	0	0	0	0	0
n-Hexane	0.0426726	0.0426726	0.000524699	0.000106468	0.317626
Cyclohexane	0.0728078	0.0728078	0.00555558	0.00116382	0.541495
i-C6	0.0512236	0.0512236	0.000504554	0.000102158	0.38128
iC7	0.0696205	0.0696205	0.00141291	0.000288409	0.518175
Methylcyclohexane	0.0528115	0.0528115	0.00526958	0.00111034	0.392614
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.439536	0.439536	0.208613	0.0458012	3.23739
Toluene	0.324043	0.324043	0.3026	0.0684922	2.34506
Ethylbenzene	0.0133025	0.0133025	0.018945	0.00440576	0.0938531
o-Xylene	0.0454045	0.0454045	0.0953693	0.0229161	0.30597
Octane	0.0197916	0.0197916	0.00115372	0.000239115	0.147245
Triethylene Glycol	80.4728	80.4728	7.41857	75.8588	0.388272
Water	17.3557	17.3557	91.94	23.9963	83.5876

Mass Fraction	6 %	7 %	8 %	9 %	10 %
Carbon Dioxide	0.154609	0.154609	0.000703106	3.35241E-05	5.47768
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	4.42532E-05	4.42532E-05	1.67372E-09	7.92541E-11	0.00156783
Methane	0.0132112	0.0132112	3.37176E-06	1.5989E-07	0.468056
Ethane	0.0258761	0.0258761	3.85844E-05	1.83504E-06	0.916762
Propane	0.050458	0.050458	0.000190734	9.09491E-06	1.78768
Isobutane	0.0098708	0.0098708	5.33132E-05	2.54638E-06	0.349712
n-Butane	0.0467215	0.0467215	0.000418588	2.00318E-05	1.6553
Isopentane	0.0266565	0.0266565	0.000545438	2.62394E-05	0.944412
n-Pentane	0.0438249	0.0438249	0.00113755	5.48061E-05	1.55266
Cyclopentane	0	0	0	0	0
n-Hexane	0.0293175	0.0293175	0.00159879	7.7508E-05	1.03865
Cyclohexane	0.0488511	0.0488511	0.0165322	0.000827437	1.72929
i-C6	0.0351923	0.0351923	0.00153741	7.43709E-05	1.2468
iC7	0.0556169	0.0556169	0.005006	0.000244136	1.97026
Methylcyclohexane	0.0413402	0.0413402	0.0182947	0.000920985	1.46281
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.273719	0.273719	0.576178	0.0302232	9.59584
Toluene	0.238033	0.238033	0.985846	0.0533124	8.19911
Ethylbenzene	0.0112592	0.0112592	0.0711174	0.00395138	0.378095
o-Xylene	0.0384303	0.0384303	0.358005	0.0205527	1.23262
Octane	0.018024	0.018024	0.00465988	0.000230742	0.638245
Triethylene Glycol	96.3462	96.3462	39.3923	96.2374	2.21258
Water	2.49275	2.49275	58.5658	3.652	57.1418

* User Specified Values

? Extrapolated or Approximate Values

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Process Streams Report All Streams Tabulated by Total Phase						
Client Name:	DELAWARE DIVISION			Job: DELAWARE CS		
Location:	LONGHORN COMPRESSOR STATION					
Flowsheet:	Dehy 2					
Mass Flow	6 lb/h	7 lb/h	8 lb/h	9 lb/h	10 lb/h	
Carbon Dioxide	13.4551	13.4551	0.00295427	0.00297838	13.4554	
Hydrogen Sulfide	0	0	0	0	0	
Nitrogen	0.00385122	0.00385122	7.03255E-09	7.04117E-09	0.00385122	
Methane	1.14973	1.14973	1.41673E-05	1.42051E-05	1.14973	
Ethane	2.25192	2.25192	0.000162122	0.000163031	2.25193	
Propane	4.3912	4.3912	0.000801418	0.00080802	4.39125	
Isobutane	0.859024	0.859024	0.000224009	0.000226228	0.859033	
n-Butane	4.06603	4.06603	0.0017588	0.00177969	4.06609	
Isopentane	2.31983	2.31983	0.00229179	0.00233119	2.31985	
n-Pentane	3.81394	3.81394	0.00477971	0.00486915	3.81396	
Cyclopentane	0	0	0	0	0	
n-Hexane	2.55141	2.55141	0.00671772	0.00688605	2.55134	
Cyclohexane	4.25136	4.25136	0.0694642	0.0735121	4.24784	
i-C6	3.06267	3.06267	0.00645981	0.00660734	3.06265	
iC7	4.84017	4.84017	0.0210339	0.0216898	4.83975	
Methylcyclohexane	3.59771	3.59771	0.0768696	0.0818231	3.59324	
2,2,4-Trimethylpentane	0	0	0	0	0	
Benzene	23.8209	23.8209	2.42095	2.68512	23.5712	
Toluene	20.7153	20.7153	4.14228	4.73643	20.1403	
Ethylbenzene	0.979852	0.979852	0.298817	0.351053	0.928753	
o-Xylene	3.34447	3.34447	1.50425	1.82596	3.02782	
Octane	1.56857	1.56857	0.0195796	0.0204998	1.56779	
Triethylene Glycol	8384.71	8384.71	165.516	8550.03	5.43499	
Water	216.936	216.936	246.079	324.455	140.363	
Stream Properties						
Property	Units	6	7	8	9	10
Temperature	°F	158.748	275 *	395 *	301.731	279.891
Molecular Weight	lb/lbmol	125.431	125.431	28.2814	118.373	26.3529
Std Vapor Volumetric Flow	MMSCFD	0.631905	0.631905	0.135311	0.683557	0.0848936
Std Liquid Volumetric Flow	sgpm	15.5462	15.5462	0.804475	15.8023	0.561346
Gross Ideal Gas Heating Value	Btu/ft ³	3391.47	3391.47	380.174	3145.97	535.417
Remarks						

Process Streams Report All Streams Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 2	

Connections

	11	12	13	14	15
From Block	Still Column	Reboiler	XCHG-101	TEG Pump	Still Column
To Block	Regeneration Unit	XCHG-101	MKUP-1	XCHG-103	BTEX Cond.

Stream Composition

Mole Fraction	11 %	12 %	13 %	14 %	15 %
Carbon Dioxide	0.00493029	9.09992E-07	9.09992E-07	9.09867E-07	3.32835
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	1.191E-07	5.11306E-13	5.11306E-13	0	0.00149665
Methane	0.00017252	3.91207E-09	3.91207E-09	0	0.780214
Ethane	0.000429419	5.02083E-08	5.02083E-08	0	0.815308
Propane	0.000888869	2.4872E-07	2.4872E-07	2.48686E-07	1.08412
Isobutane	0.000138104	6.34278E-08	6.34278E-08	6.3419E-08	0.160898
n-Butane	0.00100505	5.97026E-07	5.97026E-07	5.96944E-07	0.761579
Isopentane	0.000625398	9.07129E-07	9.07129E-07	9.07004E-07	0.350033
n-Pentane	0.00115071	2.05923E-06	2.05923E-06	2.05895E-06	0.575471
Cyclopentane	0	0	0	0	0
n-Hexane	0.000912813	3.24492E-06	3.24492E-06	3.24448E-06	0.322297
Cyclohexane	0.00460544	7.99012E-05	7.99012E-05	7.98902E-05	0.549415
i-C6	0.00106363	2.844E-06	2.844E-06	2.84361E-06	0.386888
iC7	0.00173988	1.08731E-05	1.08731E-05	1.08716E-05	0.525792
Methylcyclohexane	0.00365231	8.38101E-05	8.38101E-05	8.37986E-05	0.398351
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.136898	0.00561811	0.00561811	0.00561734	3.28312
Toluene	0.153632	0.0107125	0.0107125	0.010711	2.37739
Ethylbenzene	0.00790047	0.000817362	0.000817362	0.000817249	0.0951209
o-Xylene	0.0351991	0.00503408	0.00503408	0.00503339	0.309964
Octane	0.000880211	1.33825E-05	1.33825E-05	1.33807E-05	0.149404
Triethylene Glycol	25.7496	92.7504	92.7504	92.7513	0.0141841
Water	73.8946	7.22726	7.22726	7.22633	83.7306

Mass Fraction	11 %	12 %	13 %	14 %	15 %
Carbon Dioxide	0.00414938	2.84821E-07	2.84821E-07	2.84779E-07	5.64025
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	6.3803E-08	1.01867E-13	1.01867E-13	0	0.0016144
Methane	5.29265E-05	4.4634E-10	4.4634E-10	0	0.481956
Ethane	0.000246925	1.0737E-08	1.0737E-08	0	0.943983
Propane	0.000749544	7.8E-08	7.8E-08	7.79886E-08	1.84075
Isobutane	0.000153501	2.62186E-08	2.62186E-08	2.62148E-08	0.360094
n-Butane	0.00111711	2.46788E-07	2.46788E-07	2.46751E-07	1.70443
Isopentane	0.000862878	4.65464E-07	4.65464E-07	4.65396E-07	0.972435
n-Pentane	0.00158766	1.05663E-06	1.05663E-06	1.05648E-06	1.59873
Cyclopentane	0	0	0	0	0
n-Hexane	0.00150428	1.98873E-06	1.98873E-06	1.98844E-06	1.06946
Cyclohexane	0.00741206	4.78239E-05	4.78239E-05	4.78169E-05	1.78043
i-C6	0.00175282	1.74302E-06	1.74302E-06	1.74276E-06	1.28378
iC7	0.00333395	7.7485E-06	7.7485E-06	7.74736E-06	2.02868
Methylcyclohexane	0.00685774	5.8524E-05	5.8524E-05	5.85155E-05	1.50605
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.204493	0.00312101	0.00312101	0.00312056	9.87477
Toluene	0.270699	0.00701971	0.00701971	0.00701868	8.43459
Ethylbenzene	0.0160398	0.00061714	0.00061714	0.00061705	0.388848
o-Xylene	0.0714624	0.00380093	0.00380093	0.00380037	1.26711
Octane	0.00192276	1.08718E-05	1.08718E-05	1.08702E-05	0.657144
Triethylene Glycol	73.948	99.0593	99.0593	99.0595	0.0820193
Water	25.4576	0.925983	0.925983	0.925856	58.0829

* User Specified Values

? Extrapolated or Approximate Values

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Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 2	

Mass Flow	11 lb/h	12 lb/h	13 lb/h	14 lb/h	15 lb/h
Carbon Dioxide	0.00029399	2.41076E-05	2.41076E-05	2.41076E-05	13.4551
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	4.52054E-09	8.62219E-12	8.62219E-12	0	0.00385122
Methane	3.74993E-06	3.77788E-08	3.77788E-08	0	1.14973
Ethane	1.7495E-05	9.08794E-07	9.08794E-07	0	2.25192
Propane	5.31064E-05	6.60202E-06	6.60202E-06	6.60202E-06	4.39119
Isobutane	1.08758E-05	2.21918E-06	2.21918E-06	2.21918E-06	0.859022
n-Butane	7.91488E-05	2.08884E-05	2.08884E-05	2.08884E-05	4.06601
Isopentane	6.11362E-05	3.93975E-05	3.93975E-05	3.93975E-05	2.31979
n-Pentane	0.000112488	8.94345E-05	8.94345E-05	8.94345E-05	3.81385
Cyclopentane	0	0	0	0	0
n-Hexane	0.000106581	0.000168329	0.000168329	0.000168329	2.55124
Cyclohexane	0.000525155	0.00404787	0.00404787	0.00404787	4.24731
i-C6	0.00012419	0.000147531	0.000147531	0.000147531	3.06253
iC7	0.000236216	0.000655843	0.000655843	0.000655843	4.83951
Methylcyclohexane	0.000485881	0.00495355	0.00495355	0.00495355	3.59275
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.0144886	0.264167	0.264167	0.264167	23.5567
Toluene	0.0191795	0.594157	0.594157	0.594157	20.1211
Ethylbenzene	0.00113644	0.0522356	0.0522356	0.0522356	0.927617
o-Xylene	0.00506322	0.321716	0.321716	0.321716	3.02276
Octane	0.000136231	0.000920201	0.000920201	0.000920201	1.56765
Triethylene Glycol	5.23933	8384.51	8384.51	8385.75	0.195661
Water	1.80371	78.3764	78.3764	78.3771	138.56

Stream Properties

Property	Units	11	12	13	14	15
Temperature	°F	215	395	282.068	283.86	215 *
Molecular Weight	lb/lbmol	52.2921	140.609	140.609	140.61	25.9703
Std Vapor Volumetric Flow	MMSCFD	0.00123401	0.548246	0.548246	0.548321	0.0836596
Std Liquid Volumetric Flow	sgpm	0.012975	14.9978	14.9978	15	0.548371
Gross Ideal Gas Heating Value	Btu/ft ³	1113.81	3828.59	3828.59	3828.63	526.885

Remarks

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 2	

Connections

	16	17	18	19	20
From Block	Flash Tank	XCHG-103	XCHG-102	--	MKUP-1
To Block	FT 2	RCYL-1	DRY GAS 2	MKUP-1	--

Stream Composition

Mole Fraction	16 %	17 %	18 %	19 %	20 %
Carbon Dioxide	23.1085	9.09867E-07	5.34213	0 *	9.09992E-07
Hydrogen Sulfide	0	0	0	0 *	0
Nitrogen	0.306428	0	1.69971	0 *	5.11306E-13
Methane	42.9172	0	72.6796	0 *	3.91207E-09
Ethane	13.4936	0	10.2051	0 *	5.02083E-08
Propane	9.50131	2.48686E-07	5.44504	0 *	2.4872E-07
Isobutane	1.14868	6.3419E-08	0.753737	0 *	6.34278E-08
n-Butane	3.79856	5.96944E-07	1.9248	0 *	5.97026E-07
Isopentane	0.992691	9.07004E-07	0.487807	0 *	9.07129E-07
n-Pentane	1.37664	2.05895E-06	0.589213	0 *	2.05923E-06
Cyclopentane	0	0	0	0 *	0
n-Hexane	0.432665	3.24448E-06	0.180596	0 *	3.24492E-06
Cyclohexane	0.250652	7.98902E-05	0.0679639	0 *	7.99012E-05
i-C6	0.633552	2.84361E-06	0.267387	0 *	2.844E-06
iC7	0.4804	1.08716E-05	0.210489	0 *	1.08731E-05
Methylcyclohexane	0.142389	8.37986E-05	0.04471	0 *	8.38101E-05
2,2,4-Trimethylpentane	0	0	0	0 *	0
Benzene	0.320122	0.00561734	0.0391093	0 *	0.00561811
Toluene	0.134467	0.010711	0.0201306	0 *	0.0107125
Ethylbenzene	0.00381246	0.000817249	0.000847084	0 *	0.000817362
o-Xylene	0.00935716	0.00503339	0.00200891	0 *	0.00503408
Octane	0.0648857	1.33807E-05	0.0343338	0 *	1.33825E-05
Triethylene Glycol	0.00148919	92.7513	8.65839E-05	99.5 *	92.7504
Water	0.882677	7.22633	0.00517455	0.5 *	7.22726

Mass Fraction	16 %	17 %	18 %	19 %	20 %
Carbon Dioxide	31.4402	2.84779E-07	10.1862	0 *	2.84821E-07
Hydrogen Sulfide	0	0	0	0 *	0
Nitrogen	0.265376	0	2.06296	0 *	1.01867E-13
Methane	21.2848	0	50.5166	0 *	4.4634E-10
Ethane	12.5434	0	13.295	0 *	1.0737E-08
Propane	12.9523	7.79886E-08	10.4027	0 *	7.8E-08
Isobutane	2.064	2.62148E-08	1.89807	0 *	2.62186E-08
n-Butane	6.82539	2.46751E-07	4.84705	0 *	2.46788E-07
Isopentane	2.21417	4.65396E-07	1.52485	0 *	4.65464E-07
n-Pentane	3.07056	1.05648E-06	1.84184	0 *	1.05663E-06
Cyclopentane	0	0	0	0 *	0
n-Hexane	1.15266	1.98844E-06	0.674283	0 *	1.98873E-06
Cyclohexane	0.65214	4.78169E-05	0.247817	0 *	4.78239E-05
i-C6	1.68784	1.74276E-06	0.998328	0 *	1.74302E-06
iC7	1.48815	7.74736E-06	0.913812	0 *	7.7485E-06
Methylcyclohexane	0.432208	5.85155E-05	0.190198	0 *	5.8524E-05
2,2,4-Trimethylpentane	0	0	0	0 *	0
Benzene	0.773036	0.00312056	0.132357	0 *	0.00312101
Toluene	0.383022	0.00701868	0.0803615	0 *	0.00701971
Ethylbenzene	0.0125128	0.00061705	0.00389635	0 *	0.00061714
o-Xylene	0.0307109	0.00380037	0.00924044	0 *	0.00380093
Octane	0.229135	1.08702E-05	0.169921	0 *	1.08718E-05
Triethylene Glycol	0.00691367	99.0595	0.000563351	99.9398 *	99.0593
Water	0.491598	0.925856	0.0040389	0.0602469 *	0.925983

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 2	

Mass Flow	16 lb/h	17 lb/h	18 lb/h	19 lb/h	20 lb/h
Carbon Dioxide	47.675	2.41076E-05	18714	0 *	0
Hydrogen Sulfide	0	0	0	0 *	0
Nitrogen	0.402408	0	3790.06	0 *	0
Methane	32.2757	0	92809	0 *	0
Ethane	19.0204	0	24425.6	0 *	0
Propane	19.6405	6.60202E-06	19111.9	0 *	0
Isobutane	3.12979	2.21918E-06	3487.13	0 *	0
n-Butane	10.3498	2.08884E-05	8905.01	0 *	0
Isopentane	3.3575	3.93975E-05	2801.46	0 *	0
n-Pentane	4.65611	8.94345E-05	3383.82	0 *	0
Cyclopentane	0	0	0	0 *	0
n-Hexane	1.74786	0.000168329	1238.79	0 *	0
Cyclohexane	0.988887	0.00404787	455.29	0 *	0
i-C6	2.5594	0.000147531	1834.13	0 *	0
iC7	2.25659	0.000655843	1678.85	0 *	0
Methylcyclohexane	0.655389	0.00495355	349.431	0 *	0
2,2,4-Trimethylpentane	0	0	0	0 *	0
Benzene	1.17221	0.264167	243.167	0 *	0
Toluene	0.580805	0.594157	147.64	0 *	0
Ethylbenzene	0.018974	0.0522356	7.15838	0 *	0
o-Xylene	0.0465692	0.321716	16.9765	0 *	0
Octane	0.347453	0.000920201	312.179	0 *	0
Triethylene Glycol	0.0104837	8385.75	1.03499	1.23966 *	0
Water	0.745446	78.3771	7.42027	0.000747304 *	0

Stream Properties

Property	Units	16	17	18	19	20
Temperature	°F	158.748	95 *	95 *	85 *	
Molecular Weight	lb/lbmol	32.3469	140.61	23.0807	149.512	140.609
Std Vapor Volumetric Flow	MMSCFD	0.0426951	0.548321	72.4955	7.55598E-05	0
Std Liquid Volumetric Flow	sgpm	0.619437	15	966.939	0.00219535	0
Gross Ideal Gas Heating Value	Btu/ft ³	1286.24	3828.63	1224.91	4102.48	3828.59

Remarks

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 2	

Connections

	21	22	23	24	25
From Block	MKUP-1	RCYL-1	BTEX Cond.	Blowcase	Blowcase
To Block	TEG Pump	Contact Tower	Blowcase	BTEX 2 COND VAPORS	PUMP-101

Stream Composition

Mole Fraction	21 %	22 %	23 %	24 %	25 %
Carbon Dioxide	9.09867E-07	9.11733E-07	3.32835	30.5787	0.0318881
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	0	0	0.00149665	0.0138616	8.78077E-07
Methane	0	0	0.780214	7.21579	0.00170612
Ethane	0	0	0.815308	7.47339	0.00988465
Propane	2.48686E-07	2.49238E-07	1.08412	9.72519	0.0388112
Isobutane	6.3419E-08	6.35608E-08	0.160898	1.38569	0.0127363
n-Butane	5.96944E-07	5.98238E-07	0.761579	6.3362	0.0872207
Isopentane	9.07004E-07	9.08963E-07	0.350033	2.55797	0.0829406
n-Pentane	2.05895E-06	2.0634E-06	0.575471	3.9647	0.165478
Cyclopentane	0	0	0	0	0
n-Hexane	3.24448E-06	3.25146E-06	0.322297	1.47448	0.182919
Cyclohexane	7.98902E-05	8.00522E-05	0.549415	1.96733	0.37789
i-C6	2.84361E-06	2.84959E-06	0.386888	2.04075	0.186822
iC7	1.08716E-05	1.08965E-05	0.525792	1.54357	0.402673
Methylcyclohexane	8.37986E-05	8.39917E-05	0.398351	0.823951	0.346867
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.00561734	0.00562757	3.28312	10.3369	2.42984
Toluene	0.010711	0.010736	2.37739	3.22352	2.27503
Ethylbenzene	0.000817249	0.000819856	0.0951209	0.0432603	0.101394
o-Xylene	0.00503339	0.00505277	0.309964	0.158684	0.328264
Octane	1.33807E-05	1.34245E-05	0.149404	0.128958	0.151878
Triethylene Glycol	92.7513	92.7517	0.0141841	1.07128E-07	0.0158999
Water	7.22633	7.22589	83.7306	9.00714	92.7699

Mass Fraction	21 %	22 %	23 %	24 %	25 %
Carbon Dioxide	2.84779E-07	2.85362E-07	5.64025	26.6919	0.0609825
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	0	0	0.0016144	0.00770178	1.06888E-06
Methane	0	0	0.481956	2.29598	0.00118935
Ethane	0	0	0.943983	4.45708	0.0129155
Propane	7.79886E-08	7.81613E-08	1.84075	8.50563	0.0743672
Isobutane	2.62148E-08	2.62733E-08	0.360094	1.59742	0.0321673
n-Butane	2.46751E-07	2.47285E-07	1.70443	7.30439	0.220288
Isopentane	4.65396E-07	4.66399E-07	0.972435	3.66047	0.260031
n-Pentane	1.05648E-06	1.05875E-06	1.59873	5.67352	0.518799
Cyclopentane	0	0	0	0	0
n-Hexane	1.98844E-06	1.99271E-06	1.06946	2.5202	0.684968
Cyclohexane	4.78169E-05	4.79136E-05	1.78043	3.28393	1.38197
i-C6	1.74276E-06	1.74641E-06	1.28378	3.48808	0.699583
iC7	7.74736E-06	7.76505E-06	2.02868	3.06771	1.75331
Methylcyclohexane	5.85155E-05	5.86501E-05	1.50605	1.60459	1.47993
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.00312056	0.00312622	9.87477	16.0147	8.24752
Toluene	0.00701868	0.00703501	8.43459	5.89094	9.10872
Ethylbenzene	0.00061705	0.000619016	0.388848	0.0910927	0.467762
o-Xylene	0.00380037	0.00381499	1.26711	0.334138	1.51438
Octane	1.08702E-05	1.09057E-05	0.657144	0.292171	0.753872
Triethylene Glycol	99.0595	99.0595	0.0820193	3.19087E-07	0.103757
Water	0.925856	0.925795	58.0829	3.21841	72.6235

* User Specified Values

? Extrapolated or Approximate Values

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		Process Streams Report All Streams Tabulated by Total Phase				
Client Name:	DELAWARE DIVISION			Job: DELAWARE CS		
Location:	LONGHORN COMPRESSOR STATION					
Flowsheet:	Dehy 2					
Mass Flow	21 lb/h	22 lb/h	23 lb/h	24 lb/h	25 lb/h	
Carbon Dioxide	2.41076E-05	2.4157E-05	13.4551	13.3401	0.114999	
Hydrogen Sulfide	0	0	0	0	0	
Nitrogen	0	0	0.00385122	0.0038492	2.01565E-06	
Methane	0	0	1.14973	1.14749	0.00224284	
Ethane	0	0	2.25192	2.22756	0.0243556	
Propane	6.60202E-06	6.61665E-06	4.39119	4.25095	0.140239	
Isobutane	2.21918E-06	2.22413E-06	0.859022	0.798362	0.06066	
n-Butane	2.08884E-05	2.09336E-05	4.06601	3.6506	0.415412	
Isopentane	3.93975E-05	3.94824E-05	2.31979	1.82943	0.490358	
n-Pentane	8.94345E-05	8.96273E-05	3.81385	2.83552	0.978334	
Cyclopentane	0	0	0	0	0	
n-Hexane	0.000168329	0.000168691	2.55124	1.25955	1.29169	
Cyclohexane	0.00404787	0.00405607	4.24731	1.64124	2.60607	
i-C6	0.000147531	0.00014784	3.06253	1.74327	1.31925	
iC7	0.000655843	0.00065734	4.83951	1.53318	3.30633	
Methylcyclohexane	0.00495355	0.00496495	3.59275	0.801943	2.79081	
2,2,4-Trimethylpentane	0	0	0	0	0	
Benzene	0.264167	0.264647	23.5567	8.00383	15.5529	
Toluene	0.594157	0.59554	20.1211	2.94418	17.1769	
Ethylbenzene	0.0522356	0.052402	0.927617	0.0455264	0.88209	
o-Xylene	0.321716	0.322953	3.02276	0.166996	2.85576	
Octane	0.000920201	0.00092321	1.56765	0.146021	1.42163	
Triethylene Glycol	8385.75	8385.75	0.195661	1.59474E-07	0.195661	
Water	78.3771	78.372	138.56	1.6085	136.951	
Stream Properties						
Property	Units	21	22	23	24	25
Temperature	°F	282.041	95	110 *	110	110
Molecular Weight	lb/lbmol	140.61	140.61	25.9703	50.4181	23.0129
Std Vapor Volumetric Flow	MMSCFD	0.548321	0.548319	0.0836596	0.00902812	0.0746315
Std Liquid Volumetric Flow	sgpm	15 *	15	0.548371	0.148497	0.399874
Gross Ideal Gas Heating Value	Btu/ft^3	3828.63	3828.64	526.885	1899.31	360.863
Remarks						

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 2	

Connections

	26	27			
From Block	PUMP-101	GAS TO DEHY2			
To Block	BTEX LIQUID 2	Contact Tower			

Stream Composition

Mole Fraction	26 %	27 %			
Carbon Dioxide	0.0318881	5.35026			
Hydrogen Sulfide	0	0			
Nitrogen	8.78077E-07	1.69693			
Methane	0.00170612	72.5794			
Ethane	0.00988465	10.1962			
Propane	0.0388112	5.4424			
Isobutane	0.0127363	0.753287			
n-Butane	0.0872207	1.92456			
Isopentane	0.0829406	0.487946			
n-Pentane	0.165478	0.58966			
Cyclopentane	0	0			
n-Hexane	0.182919	0.180908			
Cyclohexane	0.37789	0.068626			
i-C6	0.186822	0.26774			
iC7	0.402673	0.211012			
Methylcyclohexane	0.346867	0.0451749			
2,2,4-Trimethylpentane	0	0			
Benzene	2.42984	0.0430116			
Toluene	2.27503	0.0229132			
Ethylbenzene	0.101394	0.000957411			
o-Xylene	0.328264	0.00236785			
Octane	0.151878	0.0344844			
Triethylene Glycol	0.0158999	9.6781E-17			
Water	92.7699	0.102144			

Mass Fraction	26 %	27 %			
Carbon Dioxide	0.0609825	10.1979			
Hydrogen Sulfide	0	0			
Nitrogen	1.06888E-06	2.05882			
Methane	0.00118935	50.428			
Ethane	0.0129155	13.2785			
Propane	0.0743672	10.3938			
Isobutane	0.0321673	1.89623			
n-Butane	0.220288	4.84464			
Isopentane	0.260031	1.52471			
n-Pentane	0.518799	1.84255			
Cyclopentane	0	0			
n-Hexane	0.684968	0.675194			
Cyclohexane	1.38197	0.250138			
i-C6	0.699583	0.999272			
iC7	1.75331	0.915735			
Methylcyclohexane	1.47993	0.192103			
2,2,4-Trimethylpentane	0	0			
Benzene	8.24752	0.145509			
Toluene	9.10872	0.0914354			
Ethylbenzene	0.467762	0.00440218			
o-Xylene	1.51438	0.0108874			
Octane	0.753872	0.170602			
Triethylene Glycol	0.103757	6.29462E-16			
Water	72.6235	0.0796972			

* User Specified Values

? Extrapolated or Approximate Values

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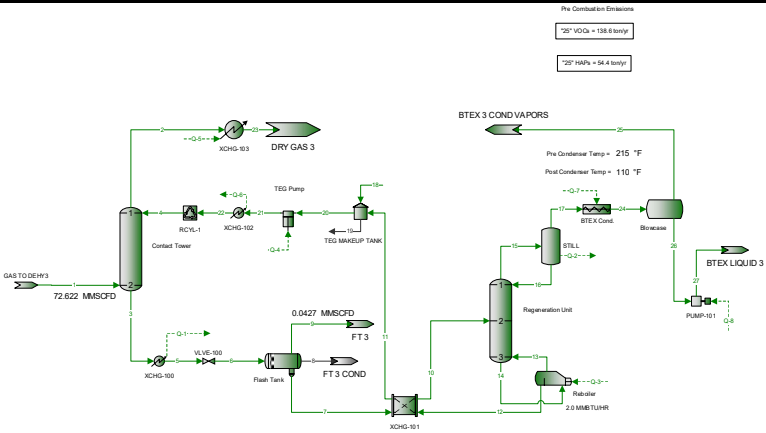
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Process Streams Report All Streams Tabulated by Total Phase					
Client Name:	DELAWARE DIVISION			Job: DELAWARE CS	
Location:	LONGHORN COMPRESSOR STATION				
Flowsheet:	Dehy 2				
Mass Flow	26 lb/h	27 lb/h			
Carbon Dioxide	0.114999	18775.2			
Hydrogen Sulfide	0	0			
Nitrogen	2.01565E-06	3790.47			
Methane	0.00224284	92842.4			
Ethane	0.0243556	24446.8			
Propane	0.140239	19135.9			
Isobutane	0.06066	3491.12			
n-Butane	0.415412	8919.42			
Isopentane	0.490358	2807.13			
n-Pentane	0.978334	3392.29			
Cyclopentane	0	0			
n-Hexane	1.29169	1243.09			
Cyclohexane	2.60607	460.526			
i-C6	1.31925	1839.75			
iC7	3.30633	1685.95			
Methylcyclohexane	2.79081	353.679			
2,2,4-Trimethylpentane	0	0			
Benzene	15.5529	267.895			
Toluene	17.1769	168.341			
Ethylbenzene	0.88209	8.1048			
o-Xylene	2.85576	20.0446			
Octane	1.42163	314.094			
Triethylene Glycol	0.195661	1.1589E-12			
Water	136.951	146.73			
Stream Properties					
Property	Units	26	27		
Temperature	°F	118.048	100		
Molecular Weight	lb/lbmol	23.0129	23.0894		
Std Vapor Volumetric Flow	MMSCFD	0.0746315	72.6218		
Std Liquid Volumetric Flow	sgpm	0.399874	968.105		
Gross Ideal Gas Heating Value	Btu/ft ³	360.863	1224.14		
Remarks					

Dehy 3

Plant Schematic

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 3	



Process Streams Report

All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 3	

Connections

	1	2	3	4	5
From Block	GAS TO DEHY3	Contact Tower	Contact Tower	RCYL-1	XCHG-100
To Block	Contact Tower	XCHG-103	XCHG-100	Contact Tower	VLVE-100

Stream Composition

Mole Fraction	1 %	2 %	3 %	4 %	5 %
Carbon Dioxide	5.35026	5.34213	1.87528	9.11733E-07	1.87528
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	1.69693	1.69971	0.0195793	0	0.0195793
Methane	72.5794	72.6796	2.81296	0	2.81296
Ethane	10.1962	10.2051	0.95511	0	0.95511
Propane	5.4424	5.44504	0.735778	2.49238E-07	0.735778
Isobutane	0.753287	0.753737	0.0926531	6.35608E-08	0.0926531
n-Butane	1.92456	1.9248	0.334855	5.98238E-07	0.334855
Isopentane	0.487946	0.487807	0.106236	9.08962E-07	0.106236
n-Pentane	0.58966	0.589213	0.158495	2.0634E-06	0.158495
Cyclopentane	0	0	0	0	0
n-Hexane	0.180908	0.180596	0.067355	3.25146E-06	0.067355
Cyclohexane	0.068626	0.0679639	0.0840634	8.00522E-05	0.0840634
i-C6	0.26774	0.267387	0.0880788	2.84959E-06	0.0880788
iC7	0.211012	0.210489	0.0956185	1.08965E-05	0.0956185
Methylcyclohexane	0.0451749	0.04471	0.0584808	8.39917E-05	0.0584808
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.0430116	0.0391093	0.431978	0.00562757	0.431978
Toluene	0.0229132	0.0201306	0.312045	0.010736	0.312045
Ethylbenzene	0.000957411	0.000847084	0.0127018	0.000819856	0.0127018
o-Xylene	0.00236785	0.00200891	0.0431231	0.00505277	0.0431231
Octane	0.0344844	0.0343338	0.0226456	1.34245E-05	0.0226456
Triethylene Glycol	9.6781E-17	8.65839E-05	75.3798	92.7517	75.3798
Water	0.102144	0.00517455	16.3132	7.22589	16.3132

Mass Fraction	1 %	2 %	3 %	4 %	5 %
Carbon Dioxide	10.1979	10.1862	0.690398	2.85362E-07	0.690398
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	2.05882	2.06296	0.00458826	0	0.00458826
Methane	50.428	50.5166	0.377504	0	0.377504
Ethane	13.2785	13.295	0.240248	0	0.240248
Propane	10.3938	10.4027	0.271412	7.81613E-08	0.271412
Isobutane	1.89623	1.89807	0.0450494	2.62733E-08	0.0450494
n-Butane	4.84464	4.84705	0.162812	2.47285E-07	0.162812
Isopentane	1.52471	1.52485	0.0641193	4.66399E-07	0.0641193
n-Pentane	1.84255	1.84184	0.0956601	1.05875E-06	0.0956601
Cyclopentane	0	0	0	0	0
n-Hexane	0.675194	0.674283	0.0485556	1.99271E-06	0.0485556
Cyclohexane	0.250138	0.247817	0.0591829	4.79136E-05	0.0591829
i-C6	0.999272	0.998328	0.0634952	1.74641E-06	0.0634952
iC7	0.915735	0.913812	0.0801502	7.76505E-06	0.0801502
Methylcyclohexane	0.192103	0.190198	0.0480341	5.86501E-05	0.0480341
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.145509	0.132357	0.28227	0.00312622	0.28227
Toluene	0.0914354	0.0803615	0.240516	0.00703501	0.240516
Ethylbenzene	0.00440218	0.00389635	0.0112807	0.000619016	0.0112807
o-Xylene	0.0108874	0.00924044	0.0382981	0.00381499	0.0382981
Octane	0.170602	0.169921	0.0216394	1.09057E-05	0.0216394
Triethylene Glycol	6.29462E-16	0.000563351	94.6963	99.0595	94.6963
Water	0.0796972	0.0040389	2.45848	0.925795	2.45848

Process Streams Report All Streams Tabulated by Total Phase						
Client Name:	DELAWARE DIVISION			Job: DELAWARE CS		
Location:	LONGHORN COMPRESSOR STATION					
Flowsheet:	Dehy 3					
Mass Flow	1 lb/h	2 lb/h	3 lb/h	4 lb/h	5 lb/h	
Carbon Dioxide	18775.2	18714	61.1301	2.4157E-05	61.1301	
Hydrogen Sulfide	0	0	0	0	0	
Nitrogen	3790.47	3790.06	0.40626	0	0.40626	
Methane	92842.4	92809	33.4254	0	33.4254	
Ethane	24446.8	24425.6	21.2723	0	21.2723	
Propane	19135.9	19111.9	24.0317	6.61665E-06	24.0317	
Isobutane	3491.12	3487.13	3.98882	2.22413E-06	3.98882	
n-Butane	8919.42	8905.01	14.4159	2.09336E-05	14.4159	
Isopentane	2807.13	2801.46	5.67733	3.94824E-05	5.67733	
n-Pentane	3392.29	3383.82	8.47005	8.96273E-05	8.47005	
Cyclopentane	0	0	0	0	0	
n-Hexane	1243.09	1238.79	4.29927	0.00016869	4.29927	
Cyclohexane	460.526	455.29	5.24025	0.00405607	5.24025	
i-C6	1839.75	1834.13	5.62207	0.00014784	5.62207	
iC7	1685.95	1678.85	7.09675	0.00065734	7.09675	
Methylcyclohexane	353.679	349.431	4.25309	0.00496495	4.25309	
2,2,4-Trimethylpentane	0	0	0	0	0	
Benzene	267.895	243.167	24.9931	0.264647	24.9931	
Toluene	168.341	147.64	21.2961	0.59554	21.2961	
Ethylbenzene	8.1048	7.15838	0.998826	0.052402	0.998826	
o-Xylene	20.0446	16.9765	3.39104	0.322953	3.39104	
Octane	314.094	312.179	1.91602	0.000923209	1.91602	
Triethylene Glycol	1.1589E-12	1.03499	8384.72	8385.75	8384.72	
Water	146.73	7.42027	217.681	78.372	217.681	
Stream Properties						
Property	Units	1	2	3	4	5
Temperature	°F	100	100.703	101.068	95	155 *
Molecular Weight	lb/lbmol	23.0894	23.0807	119.54	140.61	119.54
Std Vapor Volumetric Flow	MMSCFD	72.6218	72.4955	0.6746	0.548319	0.6746
Std Liquid Volumetric Flow	sgpm	968.105	966.939	16.1656	15	16.1656
Gross Ideal Gas Heating Value	Btu/ft^3	1224.14	1224.91	3258.23	3828.64	3258.23
Remarks						

Process Streams Report All Streams Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 3	

Connections

	6	7	8	9	10
From Block	VLVE-100	Flash Tank	Flash Tank	Flash Tank	XCHG-101
To Block	Flash Tank	XCHG-101	FT 3 COND	FT 3	Regeneration Unit

Stream Composition

Mole Fraction	6 %	7 %	8 %	9 %	10 %
Carbon Dioxide	1.87528	0.44065		23.1085	0.44065
Hydrogen Sulfide	0	0		0	0
Nitrogen	0.0195793	0.000198146		0.306428	0.000198146
Methane	2.81296	0.103295		42.9172	0.103295
Ethane	0.95511	0.107941		13.4936	0.107941
Propane	0.735778	0.143529		9.50131	0.143529
Isobutane	0.0926531	0.0213018		1.14868	0.0213018
n-Butane	0.334855	0.100828		3.79856	0.100828
Isopentane	0.106236	0.0463426		0.992691	0.0463426
n-Pentane	0.158495	0.0761899		1.37664	0.0761899
Cyclopentane	0	0		0	0
n-Hexane	0.067355	0.0426726		0.432665	0.0426726
Cyclohexane	0.0840634	0.0728078		0.250652	0.0728078
i-C6	0.0880788	0.0512236		0.633552	0.0512236
iC7	0.0956185	0.0696205		0.4804	0.0696205
Methylcyclohexane	0.0584808	0.0528115		0.142389	0.0528115
2,2,4-Trimethylpentane	0	0		0	0
Benzene	0.431978	0.439536		0.320122	0.439536
Toluene	0.312045	0.324043		0.134467	0.324043
Ethylbenzene	0.0127018	0.0133025		0.00381246	0.0133025
o-Xylene	0.0431231	0.0454045		0.00935716	0.0454045
Octane	0.0226456	0.0197916		0.0648857	0.0197916
Triethylene Glycol	75.3798	80.4728		0.00148919	80.4728
Water	16.3132	17.3557		0.882677	17.3557

Mass Fraction	6 %	7 %	8 %	9 %	10 %
Carbon Dioxide	0.690398	0.154609		31.4402	0.154609
Hydrogen Sulfide	0	0		0	0
Nitrogen	0.00458826	4.42532E-05		0.265376	4.42532E-05
Methane	0.377504	0.0132112		21.2848	0.0132112
Ethane	0.240248	0.0258761		12.5434	0.0258761
Propane	0.271412	0.050458		12.9523	0.050458
Isobutane	0.0450494	0.0098708		2.064	0.0098708
n-Butane	0.162812	0.0467215		6.82539	0.0467215
Isopentane	0.0641193	0.0266565		2.21417	0.0266565
n-Pentane	0.0956601	0.0438249		3.07056	0.0438249
Cyclopentane	0	0		0	0
n-Hexane	0.0485556	0.0293175		1.15266	0.0293175
Cyclohexane	0.0591829	0.0488511		0.65214	0.0488511
i-C6	0.0634952	0.0351923		1.68784	0.0351923
iC7	0.0801502	0.0556169		1.48815	0.0556169
Methylcyclohexane	0.0480341	0.0413402		0.432208	0.0413402
2,2,4-Trimethylpentane	0	0		0	0
Benzene	0.28227	0.273719		0.773036	0.273719
Toluene	0.240516	0.238033		0.383022	0.238033
Ethylbenzene	0.0112807	0.0112592		0.0125128	0.0112592
o-Xylene	0.0382981	0.0384303		0.0307109	0.0384303
Octane	0.0216394	0.018024		0.229135	0.018024
Triethylene Glycol	94.6963	96.3462		0.00691367	96.3462
Water	2.45848	2.49275		0.491598	2.49275

* User Specified Values

? Extrapolated or Approximate Values

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Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 3	

Mass Flow	6 lb/h	7 lb/h	8 lb/h	9 lb/h	10 lb/h
Carbon Dioxide	61.1301	13.4551		47.675	13.4551
Hydrogen Sulfide	0	0		0	0
Nitrogen	0.40626	0.00385122		0.402408	0.00385122
Methane	33.4254	1.14973		32.2757	1.14973
Ethane	21.2723	2.25192		19.0204	2.25192
Propane	24.0317	4.3912		19.6405	4.3912
Isobutane	3.98882	0.859024		3.12979	0.859024
n-Butane	14.4159	4.06603		10.3498	4.06603
Isopentane	5.67733	2.31983		3.3575	2.31983
n-Pentane	8.47005	3.81394		4.65611	3.81394
Cyclopentane	0	0		0	0
n-Hexane	4.29927	2.55141		1.74786	2.55141
Cyclohexane	5.24025	4.25136		0.988887	4.25136
i-C6	5.62207	3.06267		2.5594	3.06267
iC7	7.09675	4.84017		2.25659	4.84017
Methylcyclohexane	4.25309	3.59771		0.655389	3.59771
2,2,4-Trimethylpentane	0	0		0	0
Benzene	24.9931	23.8209		1.17221	23.8209
Toluene	21.2961	20.7153		0.580805	20.7153
Ethylbenzene	0.998826	0.979852		0.018974	0.979852
o-Xylene	3.39104	3.34447		0.0465692	3.34447
Octane	1.91602	1.56857		0.347453	1.56857
Triethylene Glycol	8384.72	8384.71		0.0104837	8384.71
Water	217.681	216.936		0.745446	216.936

Stream Properties

Property	Units	6	7	8	9	10
Temperature	°F	158.783	158.748		158.748	275 *
Molecular Weight	lb/lbmol	119.54	125.431		32.3469	125.431
Std Vapor Volumetric Flow	MMSCFD	0.6746	0.631905	0	0.0426951	0.631905
Std Liquid Volumetric Flow	sgpm	16.1656	15.5462	0	0.619437	15.5462
Gross Ideal Gas Heating Value	Btu/ft ³	3258.23	3391.47		1286.24	3391.47

Remarks

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 3	

Connections

	11	12	13	14	15
From Block	XCHG-101	Reboiler	Reboiler	Regeneration Unit	Regeneration Unit
To Block	TEG MAKEUP TANK	XCHG-101	Regeneration Unit	Reboiler	STILL

Stream Composition

Mole Fraction	11 %	12 %	13 %	14 %	15 %
Carbon Dioxide	9.09992E-07	9.09992E-07	0.00045183	9.01704E-05	3.28004
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	5.11306E-13	5.11306E-13	1.68973E-09	3.34896E-10	0.0014749
Methane	3.91207E-09	3.91207E-09	5.94412E-06	1.17978E-06	0.768875
Ethane	5.02083E-08	5.02083E-08	3.62905E-05	7.22403E-06	0.803463
Propane	2.4872E-07	2.4872E-07	0.00012233	2.4415E-05	1.06837
Isobutane	6.34278E-08	6.34278E-08	2.59414E-05	5.18602E-06	0.158561
n-Butane	5.97026E-07	5.97026E-07	0.000203679	4.07974E-05	0.750523
Isopentane	9.07129E-07	9.07129E-07	0.000213805	4.30505E-05	0.344954
n-Pentane	2.05923E-06	2.05923E-06	0.000445906	8.99195E-05	0.567123
Cyclopentane	0	0	0	0	0
n-Hexane	3.24492E-06	3.24492E-06	0.000524699	0.000106468	0.317626
Cyclohexane	7.99012E-05	7.99012E-05	0.00555558	0.00116382	0.541495
i-C6	2.844E-06	2.844E-06	0.000504554	0.000102158	0.38128
iC7	1.08731E-05	1.08731E-05	0.00141291	0.000288409	0.518175
Methylcyclohexane	8.38101E-05	8.38101E-05	0.00526958	0.00111034	0.392614
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.00561811	0.00561811	0.208613	0.0458012	3.23739
Toluene	0.0107125	0.0107125	0.3026	0.0684922	2.34506
Ethylbenzene	0.000817362	0.000817362	0.018945	0.00440576	0.0938531
o-Xylene	0.00503408	0.00503408	0.0953693	0.0229161	0.30597
Octane	1.33825E-05	1.33825E-05	0.00115372	0.000239115	0.147245
Triethylene Glycol	92.7504	92.7504	7.41857	75.8588	0.388272
Water	7.22726	7.22726	91.94	23.9963	83.5876

Mass Fraction	11 %	12 %	13 %	14 %	15 %
Carbon Dioxide	2.84821E-07	2.84821E-07	0.000703106	3.35241E-05	5.47768
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	1.01867E-13	1.01867E-13	1.67372E-09	7.92541E-11	0.00156783
Methane	4.4634E-10	4.4634E-10	3.37176E-06	1.5989E-07	0.468056
Ethane	1.0737E-08	1.0737E-08	3.85844E-05	1.83504E-06	0.916762
Propane	7.8E-08	7.8E-08	0.000190734	9.09491E-06	1.78768
Isobutane	2.62186E-08	2.62186E-08	5.33132E-05	2.54638E-06	0.349712
n-Butane	2.46788E-07	2.46788E-07	0.000418588	2.00318E-05	1.6553
Isopentane	4.65464E-07	4.65464E-07	0.000545438	2.62394E-05	0.944412
n-Pentane	1.05663E-06	1.05663E-06	0.00113755	5.48061E-05	1.55266
Cyclopentane	0	0	0	0	0
n-Hexane	1.98873E-06	1.98873E-06	0.00159879	7.7508E-05	1.03865
Cyclohexane	4.78239E-05	4.78239E-05	0.0165322	0.000827437	1.72929
i-C6	1.74302E-06	1.74302E-06	0.00153741	7.43709E-05	1.2468
iC7	7.7485E-06	7.7485E-06	0.005006	0.000244136	1.97026
Methylcyclohexane	5.8524E-05	5.8524E-05	0.0182947	0.000920985	1.46281
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.00312101	0.00312101	0.576178	0.0302232	9.59584
Toluene	0.00701971	0.00701971	0.985846	0.0533124	8.19911
Ethylbenzene	0.00061714	0.00061714	0.0711174	0.00395138	0.378095
o-Xylene	0.00380093	0.00380093	0.358005	0.0205527	1.23262
Octane	1.08718E-05	1.08718E-05	0.00465988	0.000230742	0.638245
Triethylene Glycol	99.0593	99.0593	39.3923	96.2374	2.21258
Water	0.925983	0.925983	58.5658	3.652	57.1418

* User Specified Values

? Extrapolated or Approximate Values

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		Process Streams Report All Streams Tabulated by Total Phase				
Client Name:	DELAWARE DIVISION			Job: DELAWARE CS		
Location:	LONGHORN COMPRESSOR STATION					
Flowsheet:	Dehy 3					
Mass Flow	11 lb/h	12 lb/h	13 lb/h	14 lb/h	15 lb/h	
Carbon Dioxide	2.41076E-05	2.41076E-05	0.00295427	0.00297838	13.4554	
Hydrogen Sulfide	0	0	0	0	0	
Nitrogen	8.62219E-12	8.62219E-12	7.03255E-09	7.04117E-09	0.00385122	
Methane	3.77788E-08	3.77788E-08	1.41673E-05	1.42051E-05	1.14973	
Ethane	9.08794E-07	9.08794E-07	0.000162122	0.000163031	2.25193	
Propane	6.60202E-06	6.60202E-06	0.000801418	0.00080802	4.39125	
Isobutane	2.21918E-06	2.21918E-06	0.000224009	0.000226228	0.859033	
n-Butane	2.08884E-05	2.08884E-05	0.0017588	0.00177969	4.06609	
Isopentane	3.93975E-05	3.93975E-05	0.00229179	0.00233119	2.31985	
n-Pentane	8.94345E-05	8.94345E-05	0.00477971	0.00486915	3.81396	
Cyclopentane	0	0	0	0	0	
n-Hexane	0.000168329	0.000168329	0.00671772	0.00688605	2.55134	
Cyclohexane	0.00404787	0.00404787	0.0694642	0.0735121	4.24784	
i-C6	0.000147531	0.000147531	0.00645981	0.00660734	3.06265	
iC7	0.000655843	0.000655843	0.0210339	0.0216898	4.83975	
Methylcyclohexane	0.00495355	0.00495355	0.0768696	0.0818231	3.59324	
2,2,4-Trimethylpentane	0	0	0	0	0	
Benzene	0.264167	0.264167	2.42095	2.68512	23.5712	
Toluene	0.594157	0.594157	4.14228	4.73643	20.1403	
Ethylbenzene	0.0522356	0.0522356	0.298817	0.351053	0.928753	
o-Xylene	0.321716	0.321716	1.50425	1.82596	3.02782	
Octane	0.000920201	0.000920201	0.0195796	0.0204998	1.56779	
Triethylene Glycol	8384.51	8384.51	165.516	8550.03	5.43499	
Water	78.3764	78.3764	246.079	324.455	140.363	
Stream Properties						
Property	Units	11	12	13	14	15
Temperature	°F	282.068	395	395 *	301.731	279.891
Molecular Weight	lb/lbmol	140.609	140.609	28.2814	118.373	26.3529
Std Vapor Volumetric Flow	MMSCFD	0.548246	0.548246	0.135311	0.683557	0.0848936
Std Liquid Volumetric Flow	sgpm	14.9978	14.9978	0.804475	15.8023	0.561346
Gross Ideal Gas Heating Value	Btu/ft^3	3828.59	3828.59	380.174	3145.97	535.417
Remarks						

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 3	

Connections

	16	17	18	19	20
From Block	STILL	STILL	--	TEG MAKEUP TANK	TEG MAKEUP TANK
To Block	Regeneration Unit	BTEX Cond.	TEG MAKEUP TANK	--	TEG Pump

Stream Composition

Mole Fraction	16 %	17 %	18 %	19 %	20 %
Carbon Dioxide	0.00493029	3.32835	0 *	9.09992E-07	9.09867E-07
Hydrogen Sulfide	0	0	0 *	0	0
Nitrogen	1.191E-07	0.00149665	0 *	5.11306E-13	0
Methane	0.00017252	0.780214	0 *	3.91207E-09	0
Ethane	0.000429419	0.815308	0 *	5.02083E-08	0
Propane	0.000888869	1.08412	0 *	2.4872E-07	2.48686E-07
Isobutane	0.000138104	0.160898	0 *	6.34278E-08	6.3419E-08
n-Butane	0.00100505	0.761579	0 *	5.97026E-07	5.96944E-07
Isopentane	0.000625398	0.350033	0 *	9.07129E-07	9.07004E-07
n-Pentane	0.00115071	0.575471	0 *	2.05923E-06	2.05895E-06
Cyclopentane	0	0	0 *	0	0
n-Hexane	0.000912813	0.322297	0 *	3.24492E-06	3.24448E-06
Cyclohexane	0.00460544	0.549415	0 *	7.99012E-05	7.98902E-05
i-C6	0.00106363	0.386888	0 *	2.844E-06	2.84361E-06
iC7	0.00173988	0.525792	0 *	1.08731E-05	1.08716E-05
Methylcyclohexane	0.00365231	0.398351	0 *	8.38101E-05	8.37986E-05
2,2,4-Trimethylpentane	0	0	0 *	0	0
Benzene	0.136898	3.28312	0 *	0.00561811	0.00561734
Toluene	0.153632	2.37739	0 *	0.0107125	0.010711
Ethylbenzene	0.00790047	0.0951209	0 *	0.000817362	0.000817249
o-Xylene	0.0351991	0.309964	0 *	0.00503408	0.00503339
Octane	0.000880211	0.149404	0 *	1.33825E-05	1.33807E-05
Triethylene Glycol	25.7496	0.0141841	99.5 *	92.7504	92.7513
Water	73.8946	83.7306	0.5 *	7.22726	7.22633

Mass Fraction	16 %	17 %	18 %	19 %	20 %
Carbon Dioxide	0.00414938	5.64025	0 *	2.84821E-07	2.84779E-07
Hydrogen Sulfide	0	0	0 *	0	0
Nitrogen	6.3803E-08	0.0016144	0 *	1.01867E-13	0
Methane	5.29265E-05	0.481956	0 *	4.4634E-10	0
Ethane	0.000246925	0.943983	0 *	1.0737E-08	0
Propane	0.000749544	1.84075	0 *	7.8E-08	7.79886E-08
Isobutane	0.000153501	0.360094	0 *	2.62186E-08	2.62148E-08
n-Butane	0.00111711	1.70443	0 *	2.46788E-07	2.46751E-07
Isopentane	0.000862878	0.972435	0 *	4.65464E-07	4.65396E-07
n-Pentane	0.00158766	1.59873	0 *	1.05663E-06	1.05648E-06
Cyclopentane	0	0	0 *	0	0
n-Hexane	0.00150428	1.06946	0 *	1.98873E-06	1.98844E-06
Cyclohexane	0.00741206	1.78043	0 *	4.78239E-05	4.78169E-05
i-C6	0.00175282	1.28378	0 *	1.74302E-06	1.74276E-06
iC7	0.00333395	2.02868	0 *	7.7485E-06	7.74736E-06
Methylcyclohexane	0.00685774	1.50605	0 *	5.8524E-05	5.85155E-05
2,2,4-Trimethylpentane	0	0	0 *	0	0
Benzene	0.204493	9.87477	0 *	0.00312101	0.00312056
Toluene	0.270699	8.43459	0 *	0.00701971	0.00701868
Ethylbenzene	0.0160398	0.388848	0 *	0.00061714	0.00061705
o-Xylene	0.0714624	1.26711	0 *	0.00380093	0.00380037
Octane	0.00192276	0.657144	0 *	1.08718E-05	1.08702E-05
Triethylene Glycol	73.948	0.0820193	99.9398 *	99.0593	99.0595
Water	25.4576	58.0829	0.0602469 *	0.925983	0.925856

* User Specified Values

? Extrapolated or Approximate Values

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Process Streams Report All Streams Tabulated by Total Phase						
Client Name:	DELAWARE DIVISION			Job: DELAWARE CS		
Location:	LONGHORN COMPRESSOR STATION					
Flowsheet:	Dehy 3					
Mass Flow	16 lb/h	17 lb/h	18 lb/h	19 lb/h	20 lb/h	
Carbon Dioxide	0.00029399	13.4551	0 *	0	2.41076E-05	
Hydrogen Sulfide	0	0	0 *	0	0	
Nitrogen	4.52054E-09	0.00385122	0 *	0	0	
Methane	3.74993E-06	1.14973	0 *	0	0	
Ethane	1.7495E-05	2.25192	0 *	0	0	
Propane	5.31064E-05	4.39119	0 *	0	6.60202E-06	
Isobutane	1.08758E-05	0.859022	0 *	0	2.21918E-06	
n-Butane	7.91488E-05	4.06601	0 *	0	2.08884E-05	
Isopentane	6.11362E-05	2.31979	0 *	0	3.93975E-05	
n-Pentane	0.000112488	3.81385	0 *	0	8.94345E-05	
Cyclopentane	0	0	0 *	0	0	
n-Hexane	0.000106581	2.55124	0 *	0	0.000168329	
Cyclohexane	0.000525155	4.24731	0 *	0	0.00404787	
i-C6	0.00012419	3.06253	0 *	0	0.000147531	
iC7	0.000236216	4.83951	0 *	0	0.000655843	
Methylcyclohexane	0.000485881	3.59275	0 *	0	0.00495355	
2,2,4-Trimethylpentane	0	0	0 *	0	0	
Benzene	0.0144886	23.5567	0 *	0	0.264167	
Toluene	0.0191795	20.1211	0 *	0	0.594157	
Ethylbenzene	0.00113644	0.927617	0 *	0	0.0522356	
o-Xylene	0.00506322	3.02276	0 *	0	0.321716	
Octane	0.000136231	1.56765	0 *	0	0.000920201	
Triethylene Glycol	5.23933	0.195661	1.23966 *	0	8385.75	
Water	1.80371	138.56	0.000747304 *	0	78.3771	
Stream Properties						
Property	Units	16	17	18	19	20
Temperature	°F	215	215 *	85 *		282.041
Molecular Weight	lb/lbmol	52.2921	25.9703	149.512	140.609	140.61
Std Vapor Volumetric Flow	MMSCFD	0.00123401	0.0836596	7.55598E-05	0	0.548321
Std Liquid Volumetric Flow	sgpm	0.012975	0.548371	0.00219535	0	15 *
Gross Ideal Gas Heating Value	Btu/ft ³	1113.81	526.885	4102.48	3828.59	3828.63
Remarks						

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 3	

Connections

	21	22	23	24	25
From Block	TEG Pump	XCHG-102	XCHG-103	BTEX Cond.	Blowcase
To Block	XCHG-102	RCYL-1	DRY GAS 3	Blowcase	BTEX 3 COND VAPORS

Stream Composition

Mole Fraction	21 %	22 %	23 %	24 %	25 %
Carbon Dioxide	9.09867E-07	9.09867E-07	5.34213	3.32835	30.5787
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	0	0	1.69971	0.00149665	0.0138616
Methane	0	0	72.6796	0.780214	7.21579
Ethane	0	0	10.2051	0.815308	7.47339
Propane	2.48686E-07	2.48686E-07	5.44504	1.08412	9.72519
Isobutane	6.3419E-08	6.3419E-08	0.753737	0.160898	1.38569
n-Butane	5.96944E-07	5.96944E-07	1.9248	0.761579	6.3362
Isopentane	9.07004E-07	9.07004E-07	0.487807	0.350033	2.55797
n-Pentane	2.05895E-06	2.05895E-06	0.589213	0.575471	3.9647
Cyclopentane	0	0	0	0	0
n-Hexane	3.24448E-06	3.24448E-06	0.180596	0.322297	1.47448
Cyclohexane	7.98902E-05	7.98902E-05	0.0679639	0.549415	1.96733
i-C6	2.84361E-06	2.84361E-06	0.267387	0.386888	2.04075
iC7	1.08716E-05	1.08716E-05	0.210489	0.525792	1.54357
Methylcyclohexane	8.37986E-05	8.37986E-05	0.04471	0.398351	0.823951
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.00561734	0.00561734	0.0391093	3.28312	10.3369
Toluene	0.010711	0.010711	0.0201306	2.37739	3.22352
Ethylbenzene	0.000817249	0.000817249	0.000847084	0.0951209	0.0432603
o-Xylene	0.00503339	0.00503339	0.00200891	0.309964	0.158684
Octane	1.33807E-05	1.33807E-05	0.0343338	0.149404	0.128958
Triethylene Glycol	92.7513	92.7513	8.65839E-05	0.0141841	1.07128E-07
Water	7.22633	7.22633	0.00517455	83.7306	9.00714

Mass Fraction	21 %	22 %	23 %	24 %	25 %
Carbon Dioxide	2.84779E-07	2.84779E-07	10.1862	5.64025	26.6919
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	0	0	2.06296	0.0016144	0.00770178
Methane	0	0	50.5166	0.481956	2.29598
Ethane	0	0	13.295	0.943983	4.45708
Propane	7.79886E-08	7.79886E-08	10.4027	1.84075	8.50563
Isobutane	2.62148E-08	2.62148E-08	1.89807	0.360094	1.59742
n-Butane	2.46751E-07	2.46751E-07	4.84705	1.70443	7.30439
Isopentane	4.65396E-07	4.65396E-07	1.52485	0.972435	3.66047
n-Pentane	1.05648E-06	1.05648E-06	1.84184	1.59873	5.67352
Cyclopentane	0	0	0	0	0
n-Hexane	1.98844E-06	1.98844E-06	0.674283	1.06946	2.5202
Cyclohexane	4.78169E-05	4.78169E-05	0.247817	1.78043	3.28393
i-C6	1.74276E-06	1.74276E-06	0.998328	1.28378	3.48808
iC7	7.74736E-06	7.74736E-06	0.913812	2.02868	3.06771
Methylcyclohexane	5.85155E-05	5.85155E-05	0.190198	1.50605	1.60459
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.00312056	0.00312056	0.132357	9.87477	16.0147
Toluene	0.00701868	0.00701868	0.0803615	8.43459	5.89094
Ethylbenzene	0.00061705	0.00061705	0.00389635	0.388848	0.0910927
o-Xylene	0.00380037	0.00380037	0.00924044	1.26711	0.334138
Octane	1.08702E-05	1.08702E-05	0.169921	0.657144	0.292171
Triethylene Glycol	99.0595	99.0595	0.000563351	0.0820193	3.19087E-07
Water	0.925856	0.925856	0.0040389	58.0829	3.21841

* User Specified Values

? Extrapolated or Approximate Values

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Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 3	

Mass Flow	21 lb/h	22 lb/h	23 lb/h	24 lb/h	25 lb/h
Carbon Dioxide	2.41076E-05	2.41076E-05	18714	13.4551	13.3401
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	0	0	3790.06	0.00385122	0.0038492
Methane	0	0	92809	1.14973	1.14749
Ethane	0	0	24425.6	2.25192	2.22756
Propane	6.60202E-06	6.60202E-06	19111.9	4.39119	4.25095
Isobutane	2.21918E-06	2.21918E-06	3487.13	0.859022	0.798362
n-Butane	2.08884E-05	2.08884E-05	8905.01	4.06601	3.6506
Isopentane	3.93975E-05	3.93975E-05	2801.46	2.31979	1.82943
n-Pentane	8.94345E-05	8.94345E-05	3383.82	3.81385	2.83552
Cyclopentane	0	0	0	0	0
n-Hexane	0.000168329	0.000168329	1238.79	2.55124	1.25955
Cyclohexane	0.00404787	0.00404787	455.29	4.24731	1.64124
i-C6	0.000147531	0.000147531	1834.13	3.06253	1.74327
iC7	0.000655843	0.000655843	1678.85	4.83951	1.53318
Methylcyclohexane	0.00495355	0.00495355	349.431	3.59275	0.801943
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.264167	0.264167	243.167	23.5567	8.00383
Toluene	0.594157	0.594157	147.64	20.1211	2.94418
Ethylbenzene	0.0522356	0.0522356	7.15838	0.927617	0.0455264
o-Xylene	0.321716	0.321716	16.9765	3.02276	0.166996
Octane	0.000920201	0.000920201	312.179	1.56765	0.146021
Triethylene Glycol	8385.75	8385.75	1.03499	0.195661	1.59474E-07
Water	78.3771	78.3771	7.42027	138.56	1.6085

Stream Properties

Property	Units	21	22	23	24	25
Temperature	°F	283.86	95 *	95 *	110 *	110
Molecular Weight	lb/lbmol	140.61	140.61	23.0807	25.9703	50.4181
Std Vapor Volumetric Flow	MMSCFD	0.548321	0.548321	72.4955	0.0836596	0.00902812
Std Liquid Volumetric Flow	sgpm	15	15	966.939	0.548371	0.148497
Gross Ideal Gas Heating Value	Btu/ft ³	3828.63	3828.63	1224.91	526.885	1899.31

Remarks

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 3	

Connections

	26	27			
From Block	Blowcase	PUMP-101			
To Block	PUMP-101	BTEX LIQUID 3			

Stream Composition

Mole Fraction	26 %	27 %			
Carbon Dioxide	0.0318881	0.0318881			
Hydrogen Sulfide	0	0			
Nitrogen	8.78077E-07	8.78077E-07			
Methane	0.00170612	0.00170612			
Ethane	0.00988465	0.00988465			
Propane	0.0388112	0.0388112			
Isobutane	0.0127363	0.0127363			
n-Butane	0.0872207	0.0872207			
Isopentane	0.0829406	0.0829406			
n-Pentane	0.165478	0.165478			
Cyclopentane	0	0			
n-Hexane	0.182919	0.182919			
Cyclohexane	0.37789	0.37789			
i-C6	0.186822	0.186822			
iC7	0.402673	0.402673			
Methylcyclohexane	0.346867	0.346867			
2,2,4-Trimethylpentane	0	0			
Benzene	2.42984	2.42984			
Toluene	2.27503	2.27503			
Ethylbenzene	0.101394	0.101394			
o-Xylene	0.328264	0.328264			
Octane	0.151878	0.151878			
Triethylene Glycol	0.0158999	0.0158999			
Water	92.7699	92.7699			

Mass Fraction	26 %	27 %			
Carbon Dioxide	0.0609825	0.0609825			
Hydrogen Sulfide	0	0			
Nitrogen	1.06888E-06	1.06888E-06			
Methane	0.00118935	0.00118935			
Ethane	0.0129155	0.0129155			
Propane	0.0743672	0.0743672			
Isobutane	0.0321673	0.0321673			
n-Butane	0.220288	0.220288			
Isopentane	0.260031	0.260031			
n-Pentane	0.518799	0.518799			
Cyclopentane	0	0			
n-Hexane	0.684968	0.684968			
Cyclohexane	1.38197	1.38197			
i-C6	0.699583	0.699583			
iC7	1.75331	1.75331			
Methylcyclohexane	1.47993	1.47993			
2,2,4-Trimethylpentane	0	0			
Benzene	8.24752	8.24752			
Toluene	9.10872	9.10872			
Ethylbenzene	0.467762	0.467762			
o-Xylene	1.51438	1.51438			
Octane	0.753872	0.753872			
Triethylene Glycol	0.103757	0.103757			
Water	72.6235	72.6235			

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Dehy 3	

Mass Flow	26 lb/h	27 lb/h			
Carbon Dioxide	0.114999	0.114999			
Hydrogen Sulfide	0	0			
Nitrogen	2.01565E-06	2.01565E-06			
Methane	0.00224284	0.00224284			
Ethane	0.0243556	0.0243556			
Propane	0.140239	0.140239			
Isobutane	0.06066	0.06066			
n-Butane	0.415412	0.415412			
Isopentane	0.490358	0.490358			
n-Pentane	0.978334	0.978334			
Cyclopentane	0	0			
n-Hexane	1.29169	1.29169			
Cyclohexane	2.60607	2.60607			
i-C6	1.31925	1.31925			
iC7	3.30633	3.30633			
Methylcyclohexane	2.79081	2.79081			
2,2,4-Trimethylpentane	0	0			
Benzene	15.5529	15.5529			
Toluene	17.1769	17.1769			
Ethylbenzene	0.88209	0.88209			
o-Xylene	2.85576	2.85576			
Octane	1.42163	1.42163			
Triethylene Glycol	0.195661	0.195661			
Water	136.951	136.951			

Stream Properties

Property	Units	26	27			
Temperature	°F	110	118.048			
Molecular Weight	lb/lbmol	23.0129	23.0129			
Std Vapor Volumetric Flow	MMSCFD	0.0746315	0.0746315			
Std Liquid Volumetric Flow	sgpm	0.399874	0.399874			
Gross Ideal Gas Heating Value	Btu/ft ³	360.863	360.863			

Remarks

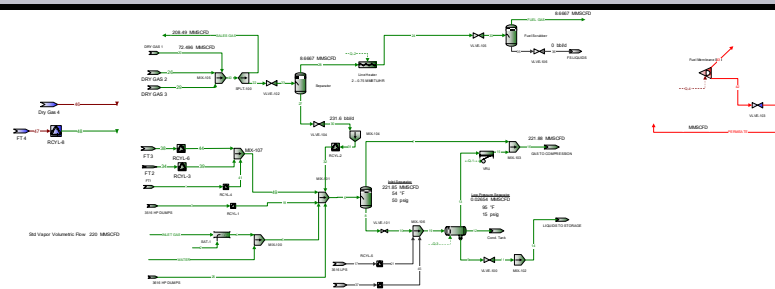
Inlet Plant Schematic

Client Name:	DELAWARE DIVISION
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Job: DELAWARE CS

Client Name:	DEERWARE DIVISION
Location:	LONGHORN COMPRESSOR STATION

Flowsheet:	Inlet
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* User Specified Values
? Extrapolated or Approximate Values

Process Streams Report

All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Inlet	

Connections

	FUEL GAS	INLET GAS	PERMEATE	SALES GAS	WATER
From Block	Fuel Scrubber	--	VLVE-103	SPLT-100	--
To Block	--	SAT-1	--	--	MIX-100

Stream Composition

Mole Fraction	FUEL GAS %	INLET GAS %	PERMEATE %	SALES GAS %	WATER %
Carbon Dioxide	5.42202	5.334 *		5.34213	0 *
Hydrogen Sulfide	0	0 *		0	0 *
Nitrogen	1.7583	1.697 *		1.69971	0 *
Methane	74.6851	72.546 *		72.6796	0 *
Ethane	10.1359	10.176 *		10.2051	0 *
Propane	5.03329	5.422 *		5.44504	0 *
Isobutane	0.624087	0.75 *		0.753737	0 *
n-Butane	1.4773	1.916 *		1.9248	0 *
Isopentane	0.297922	0.489 *		0.487807	0 *
n-Pentane	0.326279	0.594 *		0.589213	0 *
Cyclopentane	0	0 *		0	0 *
n-Hexane	0.0537312	0.197 *		0.180596	0 *
Cyclohexane	0.017971	0.077 *		0.0679639	0 *
i-C6	0.0979141	0.281 *		0.267387	0 *
iC7	0.0405698	0.263 *		0.210489	0 *
Methylcyclohexane	0.00650522	0.064 *		0.0447101	0 *
2,2,4-Trimethylpentane	0	0 *		0	0 *
Benzene	0.0123842	0.047 *		0.0391093	0 *
Toluene	0.00293939	0.034 *		0.0201306	0 *
Ethylbenzene	5.50201E-05	0.003 *		0.000847083	0 *
o-Xylene	0.000109059	0.009 *		0.0020089	0 *
Octane	0.00233106	0.101 *		0.0343338	0 *
Triethylene Glycol	2.42267E-06	0 *		8.65834E-05	0 *
Water	0.00525857	0 *		0.00517451	100 *

Mass Fraction	FUEL GAS %	INLET GAS %	PERMEATE %	SALES GAS %	WATER %
Carbon Dioxide	10.8424	10.1002 *		10.1862	0 *
Hydrogen Sulfide	0	0 *		0	0 *
Nitrogen	2.23809	2.04539 *		2.06296	0 *
Methane	54.4406	50.0742 *		50.5166	0 *
Ethane	13.8484	13.1652 *		13.295	0 *
Propane	10.0848	10.2869 *		10.4027	0 *
Isobutane	1.64818	1.87557 *		1.89807	0 *
n-Butane	3.90147	4.79145 *		4.84705	0 *
Isopentane	0.976673	1.51798 *		1.52485	0 *
n-Pentane	1.06964	1.84393 *		1.84184	0 *
Cyclopentane	0	0 *		0	0 *
n-Hexane	0.210391	0.73043 *		0.674283	0 *
Cyclohexane	0.0687215	0.278819 *		0.247817	0 *
i-C6	0.383395	1.04188 *		0.998328	0 *
iC7	0.184713	1.13386 *		0.913812	0 *
Methylcyclohexane	0.0290222	0.27037 *		0.190198	0 *
2,2,4-Trimethylpentane	0	0 *		0	0 *
Benzene	0.0439545	0.157959 *		0.132357	0 *
Toluene	0.012306	0.134787 *		0.0803615	0 *
Ethylbenzene	0.000265412	0.0137035 *		0.00389634	0 *
o-Xylene	0.000526091	0.0411105 *		0.00924039	0 *
Octane	0.0120989	0.496392 *		0.169921	0 *
Triethylene Glycol	1.65312E-05	0 *		0.000563347	0 *
Water	0.00430454	0 *		0.00403888	100 *

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Inlet	

Mass Flow	FUEL GAS lb/h	INLET GAS lb/h	PERMEATE lb/h	SALES GAS lb/h	WATER lb/h
Carbon Dioxide	2270.68	56704.5 *		53818.8	0 *
Hydrogen Sulfide	0	0 *		0	0 *
Nitrogen	468.713	11483.3 *		10899.7	0 *
Methane	11401.3	281127 *		266905	0 *
Ethane	2900.22	73912 *		70244.3	0 *
Propane	2112	57752.8 *		54962.9	0 *
Isobutane	345.171	10529.8 *		10028.5	0 *
n-Butane	817.067	26900.2 *		25609.5	0 *
Isopentane	204.54	8522.28 *		8056.58	0 *
n-Pentane	224.01	10352.2 *		9731.38	0 *
Cyclopentane	0	0 *		0	0 *
n-Hexane	44.0613	4100.79 *		3562.59	0 *
Cyclohexane	14.392	1565.35 *		1309.35	0 *
i-C6	80.2927	5849.35 *		5274.69	0 *
iC7	38.6836	6365.75 *		4828.14	0 *
Methylcyclohexane	6.07798	1517.92 *		1004.91	0 *
2,2,4-Trimethylpentane	0	0 *		0	0 *
Benzene	9.20519	886.814 *		699.312	0 *
Toluene	2.57719	756.724 *		424.592	0 *
Ethylbenzene	0.0555841	76.9344 *		20.5864	0 *
o-Xylene	0.110177	230.803 *		48.8218	0 *
Octane	2.53382	2786.85 *		897.781	0 *
Triethylene Glycol	0.00346206	0 *		2.97646	0 *
Water	0.901481	0 *		21.3395	5106.54 *

Stream Properties

Property	Units	FUEL GAS	INLET GAS	PERMEATE	SALES GAS	WATER
Temperature	°F	77.6601	60 *		93.2482	60 *
Molecular Weight	lb/lbmol	22.0081	23.2419		23.0807	18.0153
Std Vapor Volumetric Flow	MMSCFD	8.66668	220 *		208.487	2.58161
Std Liquid Volumetric Flow	sgpm	113.286	2942.19		2780.78	10.2083 *
Gross Ideal Gas Heating Value	Btu/ft ³	1165.14	1233.55		1224.91	50.31

Remarks

INLET GAS:

PLU Big Sinks No 22 (H24-25-30 No 1Y)
Sampled 4/21/17

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Inlet	

Connections

	1	2	3	4	5
From Block	FT1	--	3516 HP DUMPS	SAT-1	MIX-100
To Block	RCYL-4	SAT-1	RCYL-1	MIX-100	MIX-101

Stream Composition

Mole Fraction	1 %	2 %	3 %	4 %	5 %
Carbon Dioxide	23.1085	0 *	3.23731	5.3181	5.2566
Hydrogen Sulfide	0	0 *	0	0	0
Nitrogen	0.306429	0 *	0.28918	1.69194	1.67237
Methane	42.9172	0 *	25.1863	72.3297	71.4932
Ethane	13.4936	0 *	9.6944	10.1457	10.0283
Propane	9.5013	0 *	10.0595	5.40583	5.34332
Isobutane	1.14868	0 *	2.23909	0.747764	0.739116
n-Butane	3.79855	0 *	7.16862	1.91029	1.8882
Isopentane	0.992689	0 *	2.80593	0.487542	0.481904
n-Pentane	1.37664	0 *	3.98517	0.592229	0.58538
Cyclopentane	0	0 *	0	0	0
n-Hexane	0.432663	0 *	2.4738	0.196413	0.194141
Cyclohexane	0.250651	0 *	1.0973	0.0767704	0.0758826
i-C6	0.63355	0 *	3.03109	0.280162	0.276922
iC7	0.480398	0 *	4.28368	0.262216	0.259183
Methylcyclohexane	0.142388	0 *	1.20395	0.0638092	0.0630713
2,2,4-Trimethylpentane	0	0 *	0	0	0
Benzene	0.320121	0 *	0.605532	0.0468599	0.046318
Toluene	0.134467	0 *	0.637033	0.0338986	0.0335066
Ethylbenzene	0.00381243	0 *	0.0505948	0.00299105	0.00295647
o-Xylene	0.00935709	0 *	0.145996	0.00897316	0.0088694
Octane	0.0648854	0 *	1.64893	0.100699	0.0995343
Triethylene Glycol	0.00148919	0 *	4.3269E-10	0	0
Water	0.882678	100 *	20.1566	0.29818	1.45116

Mass Fraction	1 %	2 %	3 %	4 %	5 %
Carbon Dioxide	31.4402	0 *	3.45891	10.0768	9.98619
Hydrogen Sulfide	0	0 *	0	0	0
Nitrogen	0.265376	0 *	0.196672	2.04066	2.02231
Methane	21.2848	0 *	9.80943	49.9583	49.5091
Ethane	12.5434	0 *	7.077	13.1347	13.0166
Propane	12.9523	0 *	10.7691	10.2631	10.1708
Isobutane	2.064	0 *	3.15953	1.87123	1.8544
n-Butane	6.82538	0 *	10.1155	4.78037	4.73738
Isopentane	2.21416	0 *	4.9149	1.51447	1.50085
n-Pentane	3.07055	0 *	6.98047	1.83967	1.82312
Cyclopentane	0	0 *	0	0	0
n-Hexane	1.15266	0 *	5.17554	0.72874	0.722187
Cyclohexane	0.652137	0 *	2.24201	0.278175	0.275673
i-C6	1.68784	0 *	6.34149	1.03947	1.03012
iC7	1.48814	0 *	10.4208	1.13124	1.12107
Methylcyclohexane	0.432206	0 *	2.8699	0.269745	0.267319
2,2,4-Trimethylpentane	0	0 *	0	0	0
Benzene	0.773034	0 *	1.14832	0.157593	0.156176
Toluene	0.383021	0 *	1.42499	0.134476	0.133266
Ethylbenzene	0.0125127	0 *	0.130406	0.0136718	0.0135489
o-Xylene	0.0307107	0 *	0.376296	0.0410154	0.0406466
Octane	0.229134	0 *	4.57284	0.495244	0.490791
Triethylene Glycol	0.00691367	0 *	1.57753E-09	0	0
Water	0.491599	100 *	8.81593	0.231281	1.12851

* User Specified Values

? Extrapolated or Approximate Values

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Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Inlet	

Mass Flow	1 lb/h	2 lb/h	3 lb/h	4 lb/h	5 lb/h
Carbon Dioxide	47.6751	0 *	27.9744	56704.5	56704.5
Hydrogen Sulfide	0	0 *	0	0	0
Nitrogen	0.40241	0 *	1.59061	11483.3	11483.3
Methane	32.2757	0 *	79.3352	281127	281127
Ethane	19.0204	0 *	57.2363	73912	73912
Propane	19.6405	0 *	87.0965	57752.8	57752.8
Isobutane	3.12979	0 *	25.5532	10529.8	10529.8
n-Butane	10.3498	0 *	81.8104	26900.2	26900.2
Isopentane	3.3575	0 *	39.75	8522.28	8522.28
n-Pentane	4.65611	0 *	56.4555	10352.2	10352.2
Cyclopentane	0	0 *	0	0	0
n-Hexane	1.74786	0 *	41.8579	4100.79	4100.79
Cyclohexane	0.988884	0 *	18.1326	1565.35	1565.35
i-C6	2.55939	0 *	51.2877	5849.35	5849.35
iC7	2.25658	0 *	84.2799	6365.75	6365.75
Methylcyclohexane	0.655386	0 *	23.2108	1517.92	1517.92
2,2,4-Trimethylpentane	0	0 *	0	0	0
Benzene	1.17221	0 *	9.28719	886.814	886.814
Toluene	0.580803	0 *	11.5248	756.724	756.724
Ethylbenzene	0.0189739	0 *	1.05467	76.9344	76.9344
o-Xylene	0.0465689	0 *	3.04335	230.803	230.803
Octane	0.347452	0 *	36.9835	2786.85	2786.85
Triethylene Glycol	0.0104837	0 *	1.27585E-08	0	0
Water	0.745447	1301.47 *	71.3001	1301.47	6408.01

Stream Properties

Property	Units	1	2	3	4	5
Temperature	°F	158.748	318.941	35.4191	60	60.004
Molecular Weight	lb/lbmol	32.3469	18.0153	41.19	23.2263	23.166
Std Vapor Volumetric Flow	MMSCFD	0.0426951	0.657959	0.178828	220.658	223.24
Std Liquid Volumetric Flow	sgpm	0.619438	2.60174	2.881	2944.79	2955
Gross Ideal Gas Heating Value	Btu/ft ³	1286.24	50.31	2039.37	1230.02	1216.37

Remarks

Process Streams Report All Streams Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Inlet	

Connections

	6	7	8	9	10
From Block	MIX-101	Inlet Separator	Inlet Separator	Low Pressure Separator	VLVE-101
To Block	Inlet Separator	MIX-103	VLVE-101	VLVE-100	MIX-106

Stream Composition

Mole Fraction	6 %	7 %	8 %	9 %	10 %
Carbon Dioxide	5.24057	5.32575	0.0790055	0.00515859	0.0790055
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	1.65742	1.68474	0.00181229	4.95995E-06	0.00181229
Methane	70.9653	72.1315	0.298064	0.00145139	0.298064
Ethane	10.0131	10.1735	0.293654	0.0010524	0.293654
Propane	5.38805	5.46715	0.59472	0.000653858	0.59472
Isobutane	0.755211	0.763961	0.225025	7.15256E-05	0.225025
n-Butane	1.94711	1.96481	0.874489	0.000291799	0.874489
Isopentane	0.50961	0.508122	0.599797	5.62329E-05	0.599797
n-Pentane	0.626167	0.62007	0.995604	3.38709E-05	0.995604
Cyclopentane	0	0	0	0	0
n-Hexane	0.22234	0.204492	1.30387	8.61775E-06	1.30387
Cyclohexane	0.0885523	0.0794782	0.638431	5.55331E-05	0.638431
i-C6	0.310694	0.295181	1.25079	2.24652E-05	1.25079
iC7	0.310511	0.256731	3.56949	1.2747E-05	3.56949
Methylcyclohexane	0.0776577	0.0585998	1.23254	1.95213E-05	1.23254
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.0531745	0.0487909	0.318817	0.00119716	0.318817
Toluene	0.0411528	0.0300431	0.714386	0.000641452	0.714386
Ethylbenzene	0.00359284	0.00159104	0.124899	3.21262E-05	0.124899
o-Xylene	0.0107084	0.00422267	0.403734	0.000130293	0.403734
Octane	0.120642	0.0552921	4.08074	9.36531E-07	4.08074
Triethylene Glycol	4.25234E-06	4.7978E-12	0.000261937	0.000317954	0.000261937
Water	1.65841	0.326007	82.3999	99.9888	82.3999

Mass Fraction	6 %	7 %	8 %	9 %	10 %
Carbon Dioxide	9.86271	10.0752	0.113168	0.0125994	0.113168
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	1.9855	2.02873	0.00165239	7.71106E-06	0.00165239
Methane	48.6842	49.7419	0.155632	0.00129219	0.155632
Ethane	12.8754	13.1497	0.287392	0.0017562	0.287392
Propane	10.1601	10.3629	0.853547	0.00160011	0.853547
Isobutane	1.87708	1.90871	0.425688	0.000230714	0.425688
n-Butane	4.83953	4.90895	1.6543	0.000941233	1.6543
Isopentane	1.57231	1.57588	1.40848	0.00022516	1.40848
n-Pentane	1.93192	1.92307	2.33795	0.000135621	2.33795
Cyclopentane	0	0	0	0	0
n-Hexane	0.819354	0.757507	3.65708	4.12143E-05	3.65708
Cyclohexane	0.318694	0.287526	1.74878	0.000259374	1.74878
i-C6	1.14495	1.09345	3.5082	0.00010744	3.5082
iC7	1.33053	1.10581	11.6413	7.08852E-05	11.6413
Methylcyclohexane	0.326066	0.247328	3.93884	0.000106373	3.93884
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.17762	0.163826	0.810545	0.00518969	0.810545
Toluene	0.162148	0.11899	2.14236	0.00328002	2.14236
Ethylbenzene	0.0163114	0.00726085	0.431578	0.000189283	0.431578
o-Xylene	0.0486158	0.0192706	1.39507	0.000767671	1.39507
Octane	0.58931	0.271496	15.1716	5.93701E-06	15.1716
Triethylene Glycol	2.73081E-05	3.09713E-11	0.00128029	0.00264988	0.00128029
Water	1.27763	0.252461	48.3155	99.9685	48.3155

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Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Inlet	

Mass Flow	6 lb/h	7 lb/h	8 lb/h	9 lb/h	10 lb/h
Carbon Dioxide	57107.4	57093.4	13.9766	0.751726	13.9766
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	11496.5	11496.3	0.204075	0.000460071	0.204075
Methane	281893	281874	19.2211	0.0770969	19.2211
Ethane	74551.5	74516	35.4938	0.104781	35.4938
Propane	58829.3	58723.9	105.416	0.0954686	105.416
Isobutane	10868.7	10816.1	52.5739	0.0137653	52.5739
n-Butane	28022	27817.7	204.312	0.0561575	204.312
Isopentane	9104.03	8930.08	173.953	0.0134339	173.953
n-Pentane	11186.3	10897.5	288.744	0.00809166	288.744
Cyclopentane	0	0	0	0	0
n-Hexane	4744.25	4292.59	451.662	0.002459	451.662
Cyclohexane	1845.31	1629.33	215.98	0.0154752	215.98
i-C6	6629.53	6196.26	433.275	0.00641025	433.275
iC7	7704.08	6266.34	1437.74	0.00422928	1437.74
Methylcyclohexane	1888	1401.54	486.46	0.0063466	486.46
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	1028.46	928.355	100.105	0.309637	100.105
Toluene	938.874	674.285	264.589	0.195698	264.589
Ethylbenzene	94.4466	41.1453	53.3013	0.0112933	53.3013
o-Xylene	281.497	109.201	172.296	0.0458021	172.296
Octane	3412.24	1538.5	1873.75	0.000354224	1873.75
Triethylene Glycol	0.15812	1.75506E-07	0.15812	0.158102	0.15812
Water	7397.75	1430.63	5967.13	5964.5	5967.13

Stream Properties

Property	Units	6	7	8	9	10
Temperature	°F	54.9168	53.8185	53.8185	95	53.2289
Molecular Weight	lb/lbmol	23.3845	23.2634	30.7242	18.0189	30.7242
Std Vapor Volumetric Flow	MMSCFD	225.513	221.852	3.66102	3.01569	3.66102
Std Liquid Volumetric Flow	sgpm	2993.03	2962.63	30.3997	11.9288	30.3997
Gross Ideal Gas Heating Value	Btu/ft ³	1226.31	1231.7	899.722	50.4704	899.722

Remarks

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Inlet	

Connections

	11	12	13	14	15
From Block	VLVE-100	Low Pressure Separator	Low Pressure Separator	MIX-102	VRU
To Block	MIX-102	Cond. Tank	VRU	LIQUIDS TO STORAGE	MIX-103

Stream Composition

Mole Fraction	11 %	12 %	13 %	14 %	15 %
Carbon Dioxide	0.00515859	0.161359	6.55005	0.00515859	6.55005
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	4.95995E-06	0.000621481	0.234942	4.95995E-06	0.234942
Methane	0.00145139	0.308501	33.7586	0.00145139	33.7586
Ethane	0.0010524	0.958676	18.0363	0.0010524	18.0363
Propane	0.000653858	2.81904	16.2365	0.000653858	16.2365
Isobutane	7.15256E-05	1.20807	2.86591	7.15256E-05	2.86591
n-Butane	0.000291799	4.83219	7.93218	0.000291799	7.93218
Isopentane	5.62329E-05	3.44721	2.35846	5.62329E-05	2.35846
n-Pentane	3.38709E-05	5.76043	3.02623	3.38709E-05	3.02623
Cyclopentane	0	0	0	0	0
n-Hexane	8.61775E-06	7.66297	1.19315	8.61775E-06	1.19315
Cyclohexane	5.55331E-05	3.75708	0.462947	5.55331E-05	0.462947
i-C6	2.24652E-05	7.33118	1.60523	2.24652E-05	1.60523
iC7	1.2747E-05	21.0496	1.60526	1.2747E-05	1.60526
Methylcyclohexane	1.95213E-05	7.27562	0.383688	1.95213E-05	0.383688
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.00119716	1.86838	0.280572	0.00119716	0.280572
Toluene	0.000641452	4.21491	0.199395	0.000641452	0.199395
Ethylbenzene	3.21262E-05	0.738277	0.0120864	3.21262E-05	0.0120864
o-Xylene	0.000130293	2.38662	0.0325821	0.000130293	0.0325821
Octane	9.36531E-07	24.1252	0.421673	9.36531E-07	0.421673
Triethylene Glycol	0.000317954	1.7421E-07	3.35635E-10	0.000317954	3.35635E-10
Water	99.9888	0.0940644	2.80431	99.9888	2.80431

Mass Fraction	11 %	12 %	13 %	14 %	15 %
Carbon Dioxide	0.0125994	0.0768873	7.7217	0.0125994	7.7217
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	7.71106E-06	0.000188499	0.176299	7.71106E-06	0.176299
Methane	0.00129219	0.0535848	14.507	0.00129219	14.507
Ethane	0.0017562	0.312109	14.5274	0.0017562	14.5274
Propane	0.00160011	1.3459	19.1783	0.00160011	19.1783
Isobutane	0.000230714	0.760237	4.46198	0.000230714	4.46198
n-Butane	0.000941233	3.04089	12.3497	0.000941233	12.3497
Isopentane	0.00022516	2.69285	4.55806	0.00022516	4.55806
n-Pentane	0.000135621	4.49986	5.84861	0.000135621	5.84861
Cyclopentane	0	0	0	0	0
n-Hexane	4.12143E-05	7.14982	2.75424	4.12143E-05	2.75424
Cyclohexane	0.000259374	3.42349	1.04366	0.000259374	1.04366
i-C6	0.00010744	6.84025	3.70546	0.00010744	3.70546
iC7	7.08852E-05	22.8368	4.30869	7.08852E-05	4.30869
Methylcyclohexane	0.000106373	7.73455	1.00914	0.000106373	1.00914
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.00518969	1.58014	0.587062	0.00518969	0.587062
Toluene	0.00328002	4.20479	0.492127	0.00328002	0.492127
Ethylbenzene	0.000189283	0.848625	0.0343717	0.000189283	0.0343717
o-Xylene	0.000767671	2.74334	0.092658	0.000767671	0.092658
Octane	5.93701E-06	29.8373	1.29025	5.93701E-06	1.29025
Triethylene Glycol	0.00264988	2.83256E-07	1.35015E-09	0.00264988	1.35015E-09
Water	99.9685	0.0183477	1.35328	99.9685	1.35328

* User Specified Values

? Extrapolated or Approximate Values

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Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Inlet	

Mass Flow	11 lb/h	12 lb/h	13 lb/h	14 lb/h	15 lb/h
Carbon Dioxide	0.751726	4.82481	8.40005	0.751726	8.40005
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	0.000460071	0.0118286	0.191787	0.000460071	0.191787
Methane	0.0770969	3.36254	15.7814	0.0770969	15.7814
Ethane	0.104781	19.5854	15.8037	0.104781	15.8037
Propane	0.0954686	84.4573	20.8631	0.0954686	20.8631
Isobutane	0.0137653	47.7062	4.85396	0.0137653	4.85396
n-Butane	0.0561575	190.821	13.4346	0.0561575	13.4346
Isopentane	0.0134339	168.981	4.95848	0.0134339	4.95848
n-Pentane	0.00809166	282.374	6.36241	0.00809166	6.36241
Cyclopentane	0	0	0	0	0
n-Hexane	0.002459	448.663	2.9962	0.002459	2.9962
Cyclohexane	0.0154752	214.83	1.13534	0.0154752	1.13534
i-C6	0.00641025	429.237	4.03098	0.00641025	4.03098
iC7	0.00422928	1433.05	4.68721	0.00422928	4.68721
Methylcyclohexane	0.0063466	485.356	1.09779	0.0063466	1.09779
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.309637	99.1567	0.638635	0.309637	0.638635
Toluene	0.195698	263.858	0.53536	0.195698	0.53536
Ethylbenzene	0.0112933	53.2526	0.0373912	0.0112933	0.0373912
o-Xylene	0.0458021	172.149	0.100798	0.0458021	0.100798
Octane	0.000354224	1872.34	1.4036	0.000354224	1.4036
Triethylene Glycol	0.158102	1.77748E-05	1.46876E-09	0.158102	1.46876E-09
Water	5964.5	1.15135	1.47217	5964.5	1.47217

Stream Properties

Property	Units	11	12	13	14	15
Temperature	°F	95.0339	95	95 *	95.0339	2781.62
Molecular Weight	lb/lbmol	18.0189	92.3602	37.3317	18.0189	37.3317
Std Vapor Volumetric Flow	MMSCFD	3.01569	0.618793	0.0265397	3.01569	0.0265397
Std Liquid Volumetric Flow	sgpm	11.9288	18.024	0.446986	11.9288	0.446986
Gross Ideal Gas Heating Value	Btu/ft ³	50.4704	4993.63	1947.05	50.4704	1947.05

Remarks

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Inlet	

Connections

	16	17	18	19	20
From Block	MIX-103	3516 LPS	RCYL-1	MIX-106	DRY GAS 1
To Block	GAS TO COMPRESSIO N	RCYL-5	MIX-101	Low Pressure Separator	MIX-105

Stream Composition

Mole Fraction	16 %	17 %	18 %	19 %	20 %
Carbon Dioxide	5.32589		3.23712	0.0790055	5.34213
Hydrogen Sulfide	0		0	0	0
Nitrogen	1.68457		0.289162	0.00181229	1.69971
Methane	72.1269		25.1849	0.298064	72.6796
Ethane	10.1745		9.69388	0.293654	10.2051
Propane	5.46844		10.0589	0.59472	5.44504
Isobutane	0.764212		2.23896	0.225025	0.753737
n-Butane	1.96552		7.16817	0.874489	1.9248
Isopentane	0.508343		2.80574	0.599797	0.487807
n-Pentane	0.620358		3.98488	0.995604	0.589213
Cyclopentane	0		0	0	0
n-Hexane	0.204611		2.47362	1.30387	0.180596
Cyclohexane	0.079524		1.09722	0.638431	0.0679639
i-C6	0.295337		3.03085	1.25079	0.267387
iC7	0.256893		4.2835	3.56949	0.210489
Methylcyclohexane	0.0586387		1.20393	1.23254	0.0447101
2,2,4-Trimethylpentane	0		0	0	0
Benzene	0.0488186		0.605485	0.318817	0.0391094
Toluene	0.0300633		0.637056	0.714386	0.0201306
Ethylbenzene	0.00159229		0.0506069	0.124899	0.00084708
o-Xylene	0.00422606		0.146038	0.403734	0.00200888
Octane	0.0553359		1.64927	4.08074	0.0343338
Triethylene Glycol	4.83737E-12		4.33691E-10	0.000261937	8.65823E-05
Water	0.326304		20.1607	82.3999	0.00517444

Mass Fraction	16 %	17 %	18 %	19 %	20 %
Carbon Dioxide	10.0747		3.45878	0.113168	10.1862
Hydrogen Sulfide	0		0	0	0
Nitrogen	2.02838		0.196664	0.00165239	2.06296
Methane	49.7351		9.80909	0.155632	50.5166
Ethane	13.15		7.07677	0.287392	13.295
Propane	10.3646		10.7687	0.853547	10.4027
Isobutane	1.9092		3.15941	0.425688	1.89807
n-Butane	4.91038		10.1151	1.6543	4.84705
Isopentane	1.57645		4.91466	1.40848	1.52485
n-Pentane	1.92383		6.98011	2.33795	1.84184
Cyclopentane	0		0	0	0
n-Hexane	0.75789		5.17527	3.65708	0.674283
Cyclohexane	0.287671		2.24189	1.74878	0.247817
i-C6	1.09395		6.34112	3.5082	0.998328
iC7	1.10643		10.4206	11.6413	0.913812
Methylcyclohexane	0.247474		2.86992	3.93884	0.190198
2,2,4-Trimethylpentane	0		0	0	0
Benzene	0.163907		1.14825	0.810545	0.132357
Toluene	0.119062		1.42507	2.14236	0.0803615
Ethylbenzene	0.00726605		0.130439	0.431578	0.00389633
o-Xylene	0.0192847		0.376413	1.39507	0.00924029
Octane	0.271692		4.57388	15.1716	0.169921
Triethylene Glycol	3.12245E-11		1.58121E-09	0.00128029	0.00056334
Water	0.252672		8.81789	48.3155	0.00403882

* User Specified Values

? Extrapolated or Approximate Values

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Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Inlet	

Mass Flow	16 lb/h	17 lb/h	18 lb/h	19 lb/h	20 lb/h
Carbon Dioxide	57101.8		27.9682	13.9766	18714
Hydrogen Sulfide	0		0	0	0
Nitrogen	11496.5		1.59025	0.204075	3790.06
Methane	281889		79.3176	19.2211	92809
Ethane	74531.8		57.2237	35.4938	24425.6
Propane	58744.8		87.0772	105.416	19111.9
Isobutane	10821		25.5474	52.5739	3487.13
n-Butane	27831.1		81.7916	204.312	8905.01
Isopentane	8935.04		39.7406	173.953	2801.46
n-Pentane	10903.9		56.4421	288.744	3383.82
Cyclopentane	0		0	0	0
n-Hexane	4295.58		41.8479	451.662	1238.79
Cyclohexane	1630.47		18.1282	215.98	455.29
i-C6	6200.29		51.2751	433.275	1834.13
iC7	6271.02		84.2624	1437.74	1678.85
Methylcyclohexane	1402.64		23.2065	486.46	349.431
2,2,4-Trimethylpentane	0		0	0	0
Benzene	928.993		9.28493	100.105	243.167
Toluene	674.821		11.5233	264.589	147.64
Ethylbenzene	41.1827		1.05475	53.3013	7.15834
o-Xylene	109.302		3.04373	172.296	16.9763
Octane	1539.9		36.985	1873.75	312.179
Triethylene Glycol	1.76975E-07		1.27859E-08	0.15812	1.03497
Water	1432.1		71.3026	5967.13	7.42012

Stream Properties

Property	Units	16	17	18	19	20
Temperature	°F	54.84		35.4215	53.2289	90
Molecular Weight	lb/lbmol	23.2651		41.1891	30.7242	23.0807
Std Vapor Volumetric Flow	MMSCFD	221.879	0	0.178798	3.66102	72.4955
Std Liquid Volumetric Flow	sgpm	2963.08	0	2.88042	30.3997	966.939
Gross Ideal Gas Heating Value	Btu/ft ³	1231.79		2039.29	899.722	1224.91

Remarks

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Inlet	

Connections

	21	22	23	24	25
From Block	RCYL-5	SPLT-100	VLVE-102	Line Heater	3616 HP DUMPS
To Block	MIX-106	VLVE-102	Separator	VLVE-105	MIX-101

Stream Composition

Mole Fraction	21 %	22 %	23 %	24 %	25 %
Carbon Dioxide		5.34213	5.34213	5.42202	2.27215
Hydrogen Sulfide		0	0	0	0
Nitrogen		1.69971	1.69971	1.7583	0.171283
Methane		72.6796	72.6796	74.6851	16.3076
Ethane		10.2051	10.2051	10.1359	7.29176
Propane		5.44504	5.44504	5.03329	8.47192
Isobutane		0.753737	0.753737	0.624087	2.07425
n-Butane		1.9248	1.9248	1.4773	6.913
Isopentane		0.487807	0.487807	0.297922	3.00421
n-Pentane		0.589213	0.589213	0.326279	4.38684
Cyclopentane		0	0	0	0
n-Hexane		0.180596	0.180596	0.0537312	3.1489
Cyclohexane		0.0679639	0.0679639	0.017971	1.43605
i-C6		0.267387	0.267387	0.0979141	3.71311
iC7		0.210489	0.210489	0.0405698	5.99635
Methylcyclohexane		0.0447101	0.0447101	0.00650522	1.74691
2,2,4-Trimethylpentane		0	0	0	0
Benzene		0.0391093	0.0391093	0.0123842	0.770061
Toluene		0.0201306	0.0201306	0.00293939	0.926827
Ethylbenzene		0.000847083	0.000847083	5.50201E-05	0.0817712
o-Xylene		0.0020089	0.0020089	0.000109059	0.239093
Octane		0.0343338	0.0343338	0.00233106	2.69032
Triethylene Glycol		8.65834E-05	8.65834E-05	2.42267E-06	6.11039E-10
Water		0.00517451	0.00517451	0.00525857	28.3576

Mass Fraction	21 %	22 %	23 %	24 %	25 %
Carbon Dioxide		10.1862	10.1862	10.8424	2.22351
Hydrogen Sulfide		0	0	0	0
Nitrogen		2.06296	2.06296	2.23809	0.106693
Methane		50.5166	50.5166	54.4406	5.81725
Ethane		13.295	13.295	13.8484	4.87539
Propane		10.4027	10.4027	10.0848	8.30681
Isobutane		1.89807	1.89807	1.64818	2.68077
n-Butane		4.84705	4.84705	3.90147	8.9344
Isopentane		1.52485	1.52485	0.976673	4.81966
n-Pentane		1.84184	1.84184	1.06964	7.03782
Cyclopentane		0	0	0	0
n-Hexane		0.674283	0.674283	0.210391	6.03391
Cyclohexane		0.247817	0.247817	0.0687215	2.68738
i-C6		0.998328	0.998328	0.383395	7.11504
iC7		0.913812	0.913812	0.184713	13.3604
Methylcyclohexane		0.190198	0.190198	0.0290222	3.81397
2,2,4-Trimethylpentane		0	0	0	0
Benzene		0.132357	0.132357	0.0439545	1.33752
Toluene		0.0803615	0.0803615	0.012306	1.89887
Ethylbenzene		0.00389634	0.00389634	0.000265412	0.193036
o-Xylene		0.00924039	0.00924039	0.000526091	0.564424
Octane		0.169921	0.169921	0.0120989	6.83338
Triethylene Glycol		0.000563347	0.000563347	1.65312E-05	2.04041E-09
Water		0.00403888	0.00403888	0.00430454	11.3597

* User Specified Values

? Extrapolated or Approximate Values

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Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Inlet	

Mass Flow	21 lb/h	22 lb/h	23 lb/h	24 lb/h	25 lb/h
Carbon Dioxide		2323.26	2323.26	2270.68	179.333
Hydrogen Sulfide		0	0	0	0
Nitrogen		470.52	470.52	468.713	8.60511
Methane		11521.8	11521.8	11401.3	469.177
Ethane		3032.32	3032.32	2900.22	393.213
Propane		2372.65	2372.65	2112	669.967
Isobutane		432.912	432.912	345.171	216.212
n-Butane		1105.52	1105.52	817.067	720.584
Isopentane		347.789	347.789	204.54	388.719
n-Pentane		420.087	420.087	224.01	567.619
Cyclopentane		0	0	0	0
n-Hexane		153.791	153.791	44.0613	486.651
Cyclohexane		56.5222	56.5222	14.392	216.744
i-C6		227.699	227.699	80.2927	573.848
iC7		208.422	208.422	38.6836	1077.55
Methylcyclohexane		43.3803	43.3803	6.07798	307.607
2,2,4-Trimethylpentane		0	0	0	0
Benzene		30.1881	30.1881	9.20519	107.874
Toluene		18.3289	18.3289	2.57719	153.149
Ethylbenzene		0.888679	0.888679	0.0555841	15.5689
o-Xylene		2.10755	2.10755	0.110177	45.5224
Octane		38.7556	38.7556	2.53382	551.131
Triethylene Glycol		0.128488	0.128488	0.00346206	1.64565E-07
Water		0.921188	0.921188	0.901481	916.192

Stream Properties

Property	Units	21	22	23	24	25
Temperature	°F	85 *	93.2482	62.2515	120 *	63.21
Molecular Weight	lb/lbmol		23.0807	23.0807	22.0081	44.9721
Std Vapor Volumetric Flow	MMSCFD	0	9 *	9	8.66668	1.63336
Std Liquid Volumetric Flow	sgpm	0 *	120.041	120.041	113.286	26.5438
Gross Ideal Gas Heating Value	Btu/ft ³		1224.91	1224.91	1165.14	2173.72

Remarks

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Inlet	

Connections

	26	27	28	29	30
From Block	DRY GAS 2	Separator	Separator	DRY GAS 3	VLVE-104
To Block	MIX-105	VLVE-104	Line Heater	MIX-105	MIX-104

Stream Composition

Mole Fraction	26 %	27 %	28 %	29 %	30 %
Carbon Dioxide	5.34213	3.26496	5.42202	5.34213	3.26496
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	1.69971	0.176245	1.7583	1.69971	0.176245
Methane	72.6796	20.5349	74.6851	72.6796	20.5349
Ethane	10.2051	12.0045	10.1359	10.2051	12.0045
Propane	5.44504	16.1509	5.03329	5.44504	16.1509
Isobutane	0.753737	4.12474	0.624087	0.753737	4.12474
n-Butane	1.9248	13.5602	1.4773	1.9248	13.5602
Isopentane	0.487807	5.42497	0.297922	0.487807	5.42497
n-Pentane	0.589213	7.42566	0.326279	0.589213	7.42566
Cyclopentane	0	0	0	0	0
n-Hexane	0.180596	3.47918	0.0537312	0.180596	3.47918
Cyclohexane	0.0679639	1.36782	0.017971	0.0679639	1.36782
i-C6	0.267387	4.6738	0.0979141	0.267387	4.6738
iC7	0.210489	4.62852	0.0405698	0.210489	4.62852
Methylcyclohexane	0.04471	1.03806	0.00650522	0.04471	1.03806
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.0391093	0.733982	0.0123842	0.0391093	0.733982
Toluene	0.0201306	0.467115	0.00293939	0.0201306	0.467115
Ethylbenzene	0.000847084	0.0214413	5.50201E-05	0.000847084	0.0214413
o-Xylene	0.00200891	0.0514062	0.000109059	0.00200891	0.0514062
Octane	0.0343338	0.866428	0.00233106	0.0343338	0.866428
Triethylene Glycol	8.65839E-05	0.00227482	2.42267E-06	8.65839E-05	0.00227482
Water	0.00517455	0.00298897	0.00525857	0.00517455	0.00298897

Mass Fraction	26 %	27 %	28 %	29 %	30 %
Carbon Dioxide	10.1862	2.81903	10.8424	10.1862	2.81903
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	2.06296	0.0968626	2.23809	2.06296	0.0968626
Methane	50.5166	6.46305	54.4406	50.5166	6.46305
Ethane	13.295	7.08169	13.8484	13.295	7.08169
Propane	10.4027	13.9723	10.0848	10.4027	13.9723
Isobutane	1.89807	4.70341	1.64818	1.89807	4.70341
n-Butane	4.84705	15.4626	3.90147	4.84705	15.4626
Isopentane	1.52485	7.67893	0.976673	1.52485	7.67893
n-Pentane	1.84184	10.5109	1.06964	1.84184	10.5109
Cyclopentane	0	0	0	0	0
n-Hexane	0.674283	5.88213	0.210391	0.674283	5.88213
Cyclohexane	0.247817	2.25842	0.0687215	0.247817	2.25842
i-C6	0.998328	7.90182	0.383395	0.998328	7.90182
iC7	0.913812	9.09898	0.184713	0.913812	9.09898
Methylcyclohexane	0.190198	1.99962	0.0290222	0.190198	1.99962
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.132357	1.1248	0.0439545	0.132357	1.1248
Toluene	0.0803615	0.844381	0.012306	0.0803615	0.844381
Ethylbenzene	0.00389635	0.0446587	0.000265412	0.00389635	0.0446587
o-Xylene	0.00924044	0.107071	0.000526091	0.00924044	0.107071
Octane	0.169921	1.9417	0.0120989	0.169921	1.9417
Triethylene Glycol	0.000563351	0.00670214	1.65312E-05	0.000563351	0.00670214
Water	0.0040389	0.00105642	0.00430454	0.0040389	0.00105642

Process Streams Report All Streams Tabulated by Total Phase						
Client Name:	DELAWARE DIVISION			Job: DELAWARE CS		
Location:	LONGHORN COMPRESSOR STATION					
Flowsheet:	Inlet					
Mass Flow	26 lb/h	27 lb/h	28 lb/h	29 lb/h	30 lb/h	
Carbon Dioxide	18714	52.5881	2270.68	18714	52.5881	
Hydrogen Sulfide	0	0	0	0	0	
Nitrogen	3790.06	1.80694	468.713	3790.06	1.80694	
Methane	92809	120.566	11401.3	92809	120.566	
Ethane	24425.6	132.107	2900.22	24425.6	132.107	
Propane	19111.9	260.648	2112	19111.9	260.648	
Isobutane	3487.13	87.7408	345.171	3487.13	87.7408	
n-Butane	8905.01	288.45	817.067	8905.01	288.45	
Isopentane	2801.46	143.248	204.54	2801.46	143.248	
n-Pentane	3383.82	196.077	224.01	3383.82	196.077	
Cyclopentane	0	0	0	0	0	
n-Hexane	1238.79	109.729	44.0613	1238.79	109.729	
Cyclohexane	455.29	42.1302	14.392	455.29	42.1302	
i-C6	1834.13	147.406	80.2927	1834.13	147.406	
iC7	1678.85	169.739	38.6836	1678.85	169.739	
Methylcyclohexane	349.431	37.3023	6.07798	349.431	37.3023	
2,2,4-Trimethylpentane	0	0	0	0	0	
Benzene	243.167	20.9829	9.20519	243.167	20.9829	
Toluene	147.64	15.7517	2.57719	147.64	15.7517	
Ethylbenzene	7.15838	0.833095	0.0555841	7.15838	0.833095	
o-Xylene	16.9765	1.99737	0.110177	16.9765	1.99737	
Octane	312.179	36.2218	2.53382	312.179	36.2218	
Triethylene Glycol	1.03499	0.125026	0.00346206	1.03499	0.125026	
Water	7.42027	0.0197073	0.901481	7.42027	0.0197073	
Stream Properties						
Property	Units	26	27	28	29	30
Temperature	°F	95	62.2515	62.2515	95	11.9261
Molecular Weight	lb/lbmol	23.0807	50.9713	22.0081	23.0807	50.9713
Std Vapor Volumetric Flow	MMSCFD	72.4955	0.333325	8.66668	72.4955	0.333325
Std Liquid Volumetric Flow	sgpm	966.939	6.75511	113.286	966.939	6.75511
Gross Ideal Gas Heating Value	Btu/ft ³	1224.91	2778.96	1165.14	1224.91	2778.96
Remarks						

Process Streams Report All Streams Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Inlet	

Connections

	31	32	33	34	35
From Block	MIX-104	RCYL-2	VLVE-105	FT 2	Fuel Scrubber
To Block	RCYL-2	MIX-101	Fuel Scrubber	RCYL-3	VLVE-106

Stream Composition

Mole Fraction	31 %	32 %	33 %	34 %	35 %
Carbon Dioxide	3.26496	3.26386	5.42202	23.1085	
Hydrogen Sulfide	0	0	0	0	
Nitrogen	0.176245	0.176256	1.7583	0.306428	
Methane	20.5349	20.5355	74.6851	42.9172	
Ethane	12.0045	12.0042	10.1359	13.4936	
Propane	16.1509	16.1502	5.03329	9.50131	
Isobutane	4.12474	4.1248	0.624087	1.14868	
n-Butane	13.5602	13.56	1.4773	3.79856	
Isopentane	5.42497	5.42515	0.297922	0.992691	
n-Pentane	7.42566	7.4258	0.326279	1.37664	
Cyclopentane	0	0	0	0	
n-Hexane	3.47918	3.47959	0.0537312	0.432665	
Cyclohexane	1.36782	1.36789	0.017971	0.250652	
i-C6	4.6738	4.67424	0.0979141	0.633552	
iC7	4.62852	4.6295	0.0405698	0.4804	
Methylcyclohexane	1.03806	1.03828	0.00650522	0.142389	
2,2,4-Trimethylpentane	0	0	0	0	
Benzene	0.733982	0.733703	0.0123842	0.320122	
Toluene	0.467115	0.466696	0.00293939	0.134467	
Ethylbenzene	0.0214413	0.021406	5.50201E-05	0.00381246	
o-Xylene	0.0514062	0.0511621	0.000109059	0.00935716	
Octane	0.866428	0.866844	0.00233106	0.0648857	
Triethylene Glycol	0.00227482	0.00230518	2.42267E-06	0.00148919	
Water	0.00298897	0.00255348	0.00525857	0.882677	

Mass Fraction	31 %	32 %	33 %	34 %	35 %
Carbon Dioxide	2.81903	2.81802	10.8424	31.4402	
Hydrogen Sulfide	0	0	0	0	
Nitrogen	0.0968626	0.0968672	2.23809	0.265376	
Methane	6.46305	6.46312	54.4406	21.2848	
Ethane	7.08169	7.08139	13.8484	12.5434	
Propane	13.9723	13.9714	10.0848	12.9523	
Isobutane	4.70341	4.70339	1.64818	2.064	
n-Butane	15.4626	15.4621	3.90147	6.82539	
Isopentane	7.67893	7.67903	0.976673	2.21417	
n-Pentane	10.5109	10.5109	1.06964	3.07056	
Cyclopentane	0	0	0	0	
n-Hexane	5.88213	5.88271	0.210391	1.15266	
Cyclohexane	2.25842	2.25851	0.0687215	0.65214	
i-C6	7.90182	7.90242	0.383395	1.68784	
iC7	9.09898	9.10073	0.184713	1.48815	
Methylcyclohexane	1.99962	2	0.0290222	0.432208	
2,2,4-Trimethylpentane	0	0	0	0	
Benzene	1.1248	1.12435	0.0439545	0.773036	
Toluene	0.844381	0.843608	0.012306	0.383022	
Ethylbenzene	0.0446587	0.0445845	0.000265412	0.0125128	
o-Xylene	0.107071	0.10656	0.000526091	0.0307109	
Octane	1.9417	1.94259	0.0120989	0.229135	
Triethylene Glycol	0.00670214	0.00679146	1.65312E-05	0.00691367	
Water	0.00105642	0.000902483	0.00430454	0.491598	

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Inlet	

Mass Flow	31 lb/h	32 lb/h	33 lb/h	34 lb/h	35 lb/h
Carbon Dioxide	52.5881	52.5585	2270.68	47.675	
Hydrogen Sulfide	0	0	0	0	
Nitrogen	1.80694	1.80666	468.713	0.402408	
Methane	120.566	120.543	11401.3	32.2757	
Ethane	132.107	132.074	2900.22	19.0204	
Propane	260.648	260.579	2112	19.6405	
Isobutane	87.7408	87.7223	345.171	3.12979	
n-Butane	288.45	288.382	817.067	10.3498	
Isopentane	143.248	143.22	204.54	3.3575	
n-Pentane	196.077	196.037	224.01	4.65611	
Cyclopentane	0	0	0	0	
n-Hexane	109.729	109.718	44.0613	1.74786	
Cyclohexane	42.1302	42.1231	14.392	0.988887	
i-C6	147.406	147.387	80.2927	2.5594	
iC7	169.739	169.736	38.6836	2.25659	
Methylcyclohexane	37.3023	37.3018	6.07798	0.655389	
2,2,4-Trimethylpentane	0	0	0	0	
Benzene	20.9829	20.9702	9.20519	1.17221	
Toluene	15.7517	15.734	2.57719	0.580805	
Ethylbenzene	0.833095	0.831538	0.0555841	0.018974	
o-Xylene	1.99737	1.98744	0.110177	0.0465692	
Octane	36.2218	36.231	2.53382	0.347453	
Triethylene Glycol	0.125026	0.126666	0.00346206	0.0104837	
Water	0.0197073	0.0168321	0.901481	0.745446	

Stream Properties

Property	Units	31	32	33	34	35
Temperature	°F	11.9261	11.9292	77.6601	158.748	
Molecular Weight	lb/lbmol	50.9713	50.9723	22.0081	32.3469	
Std Vapor Volumetric Flow	MMSCFD	0.333325	0.333249	8.66668	0.0426951	0
Std Liquid Volumetric Flow	sgpm	6.75511	6.75371	113.286	0.619437	0
Gross Ideal Gas Heating Value	Btu/ft ³	2778.96	2779.04	1165.14	1286.24	

Remarks

		Process Streams Report All Streams Tabulated by Total Phase			
Client Name:	DELAWARE DIVISION			Job: DELAWARE CS	
Location:	LONGHORN COMPRESSOR STATION				
Flowsheet:	Inlet				
Connections					
	36	37	38	39	40
From Block	VLVE-106	3616 LPS	FT 3	RCYL-3	MIX-105
To Block	FS LIQUIDS	RCYL-7	RCYL-6	MIX-107	SPLT-100
Stream Composition					
	36	37	38	39	40
Mole Fraction	%	%	%	%	%
Carbon Dioxide			23.1085	23.1082	5.34213
Hydrogen Sulfide			0	0	0
Nitrogen			0.306428	0.306424	1.69971
Methane			42.9172	42.9177	72.6796
Ethane			13.4936	13.4939	10.2051
Propane			9.50131	9.50155	5.44504
Isobutane			1.14868	1.14869	0.753737
n-Butane			3.79856	3.7985	1.9248
Isopentane			0.992691	0.992646	0.487807
n-Pentane			1.37664	1.37658	0.589213
Cyclopentane			0	0	0
n-Hexane			0.432665	0.432642	0.180596
Cyclohexane			0.250652	0.25062	0.0679639
i-C6			0.633552	0.633498	0.267387
iC7			0.4804	0.480428	0.210489
Methylcyclohexane			0.142389	0.14241	0.0447101
2,2,4-Trimethylpentane			0	0	0
Benzene			0.320122	0.320088	0.0391093
Toluene			0.134467	0.134532	0.0201306
Ethylbenzene			0.00381246	0.00381785	0.000847083
o-Xylene			0.00935716	0.00937782	0.0020089
Octane			0.0648857	0.064955	0.0343338
Triethylene Glycol			0.00148919	0.00148949	8.65834E-05
Water			0.882677	0.881899	0.00517451
	36	37	38	39	40
Mass Fraction	%	%	%	%	%
Carbon Dioxide			31.4402	31.4398	10.1862
Hydrogen Sulfide			0	0	0
Nitrogen			0.265376	0.265372	2.06296
Methane			21.2848	21.285	50.5166
Ethane			12.5434	12.5437	13.295
Propane			12.9523	12.9526	10.4027
Isobutane			2.064	2.06401	1.89807
n-Butane			6.82539	6.82529	4.84705
Isopentane			2.21417	2.21406	1.52485
n-Pentane			3.07056	3.07042	1.84184
Cyclopentane			0	0	0
n-Hexane			1.15266	1.1526	0.674283
Cyclohexane			0.65214	0.652057	0.247817
i-C6			1.68784	1.6877	0.998328
iC7			1.48815	1.48823	0.913812
Methylcyclohexane			0.432208	0.432271	0.190198
2,2,4-Trimethylpentane			0	0	0
Benzene			0.773036	0.772953	0.132357
Toluene			0.383022	0.383208	0.0803615
Ethylbenzene			0.0125128	0.0125305	0.00389634
o-Xylene			0.0307109	0.0307787	0.00924039
Octane			0.229135	0.229379	0.169921
Triethylene Glycol			0.00691367	0.00691505	0.000563347
Water			0.491598	0.491164	0.00403888

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Inlet	

Mass Flow	36 lb/h	37 lb/h	38 lb/h	39 lb/h	40 lb/h
Carbon Dioxide			47.675	47.6683	56142.1
Hydrogen Sulfide			0	0	0
Nitrogen			0.402408	0.402351	11370.2
Methane			32.2757	32.2719	278427
Ethane			19.0204	19.0184	73276.7
Propane			19.6405	19.6384	57335.6
Isobutane			3.12979	3.12941	10461.4
n-Butane			10.3498	10.3484	26715
Isopentane			3.3575	3.35691	8404.37
n-Pentane			4.65611	4.6553	10151.5
Cyclopentane			0	0	0
n-Hexane			1.74786	1.74755	3716.38
Cyclohexane			0.988887	0.988635	1365.87
i-C6			2.5594	2.55885	5502.38
iC7			2.25659	2.25643	5036.56
Methylcyclohexane			0.655389	0.655399	1048.29
2,2,4-Trimethylpentane			0	0	0
Benzene			1.17221	1.17193	729.5
Toluene			0.580805	0.581011	442.921
Ethylbenzene			0.018974	0.0189984	21.4751
o-Xylene			0.0465692	0.046666	50.9293
Octane			0.347453	0.347779	936.536
Triethylene Glycol			0.0104837	0.0104844	3.10495
Water			0.745446	0.744691	22.2607

Stream Properties

Property	Units	36	37	38	39	40
Temperature	°F			158.748	158.748	93.2482
Molecular Weight	lb/lbmol			32.3469	32.347	23.0807
Std Vapor Volumetric Flow	MMSCFD	0	0	0.0426951	0.0426895	217.487
Std Liquid Volumetric Flow	sgpm	0	0	0.619437	0.619361	2900.82
Gross Ideal Gas Heating Value	Btu/ft ³			1286.24	1286.26	1224.91

Remarks

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Inlet	

Connections

	41	42	43	44	45
From Block	RCYL-4	Fuel Membrane Skid	Fuel Membrane Skid	RCYL-6	RCYL-7
To Block	MIX-107	VLVE-103	--	MIX-107	MIX-106

Stream Composition

Mole Fraction	41 %	42 %	43 %	44 %	45 %
Carbon Dioxide	23.1084			23.1082	
Hydrogen Sulfide	0			0	
Nitrogen	0.30642			0.306424	
Methane	42.9172			42.9177	
Ethane	13.4938			13.4939	
Propane	9.5016			9.50155	
Isobutane	1.14871			1.14869	
n-Butane	3.79864			3.7985	
Isopentane	0.992707			0.992646	
n-Pentane	1.37668			1.37658	
Cyclopentane	0			0	
n-Hexane	0.432675			0.432642	
Cyclohexane	0.250647			0.25062	
i-C6	0.633558			0.633498	
iC7	0.480421			0.480428	
Methylcyclohexane	0.142396			0.14241	
2,2,4-Trimethylpentane	0			0	
Benzene	0.320129			0.320088	
Toluene	0.134506			0.134532	
Ethylbenzene	0.00381484			0.00381785	
o-Xylene	0.00936929			0.00937782	
Octane	0.064906			0.064955	
Triethylene Glycol	0.00148948			0.00148949	
Water	0.881905			0.881899	

Mass Fraction	41 %	42 %	43 %	44 %	45 %
Carbon Dioxide	31.4398			31.4398	
Hydrogen Sulfide	0			0	
Nitrogen	0.265367			0.265372	
Methane	21.2846			21.285	
Ethane	12.5435			12.5437	
Propane	12.9526			12.9526	
Isobutane	2.06404			2.06401	
n-Butane	6.82549			6.82529	
Isopentane	2.21418			2.21406	
n-Pentane	3.07062			3.07042	
Cyclopentane	0			0	
n-Hexane	1.15268			1.1526	
Cyclohexane	0.652124			0.652057	
i-C6	1.68785			1.6877	
iC7	1.4882			1.48823	
Methylcyclohexane	0.432228			0.432271	
2,2,4-Trimethylpentane	0			0	
Benzene	0.773048			0.772953	
Toluene	0.38313			0.383208	
Ethylbenzene	0.0125205			0.0125305	
o-Xylene	0.0307505			0.0307787	
Octane	0.229204			0.229379	
Triethylene Glycol	0.00691499			0.00691505	
Water	0.491164			0.491164	

* User Specified Values

? Extrapolated or Approximate Values

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Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Inlet	

Mass Flow	41 lb/h	42 lb/h	43 lb/h	44 lb/h	45 lb/h
Carbon Dioxide	47.669			47.6683	
Hydrogen Sulfide	0			0	
Nitrogen	0.402349			0.402351	
Methane	32.2717			32.2719	
Ethane	19.0184			19.0184	
Propane	19.6387			19.6384	
Isobutane	3.12949			3.12941	
n-Butane	10.3488			10.3484	
Isopentane	3.35714			3.35691	
n-Pentane	4.65567			4.6553	
Cyclopentane	0			0	
n-Hexane	1.74769			1.74755	
Cyclohexane	0.988749			0.988635	
i-C6	2.55911			2.55885	
iC7	2.25641			2.25643	
Methylcyclohexane	0.655343			0.655399	
2,2,4-Trimethylpentane	0			0	
Benzene	1.17209			1.17193	
Toluene	0.580901			0.581011	
Ethylbenzene	0.0189836			0.0189984	
o-Xylene	0.0466238			0.046666	
Octane	0.347519			0.347779	
Triethylene Glycol	0.0104845			0.0104844	
Water	0.744703			0.744691	

Stream Properties

Property	Units	41	42	43	44	45
Temperature	°F	158.748			158.748	
Molecular Weight	lb/lbmol	32.3472			32.347	
Std Vapor Volumetric Flow	MMSCFD	0.0426898			0.0426895	0
Std Liquid Volumetric Flow	sgpm	0.619367			0.619361	0 *
Gross Ideal Gas Heating Value	Btu/ft ³	1286.27			1286.26	

Remarks

Process Streams Report All Streams Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Inlet	

Connections

	46	47	48	49	
From Block	Dry Gas 4	FT 4	RCYL-8	MIX-107	
To Block	--	RCYL-8	--	MIX-101	

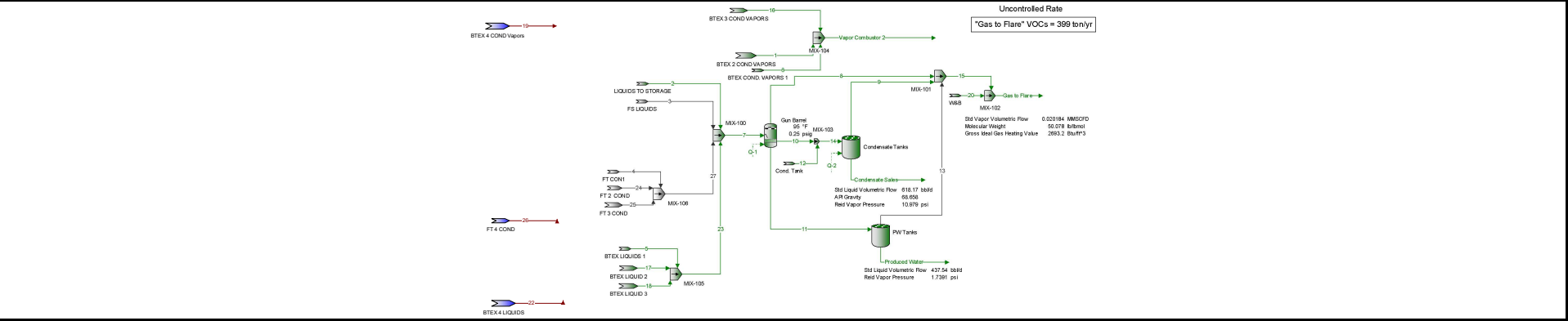
Stream Composition

Mole Fraction	46 %	47 %	48 %	49 %	
Carbon Dioxide			23.1705	23.1083	
Hydrogen Sulfide			0	0	
Nitrogen			0.312532	0.306423	
Methane			43.0537	42.9175	
Ethane			13.3298	13.4939	
Propane			9.27366	9.50157	
Isobutane			1.11658	1.1487	
n-Butane			3.68953	3.79855	
Isopentane			0.95818	0.992666	
n-Pentane			1.31375	1.37661	
Cyclopentane			0	0	
n-Hexane			0.41251	0.432653	
Cyclohexane			0.244578	0.250629	
i-C6			0.607644	0.633518	
iC7			0.463943	0.480426	
Methylcyclohexane			0.139402	0.142405	
2,2,4-Trimethylpentane			0	0	
Benzene			0.315969	0.320102	
Toluene			0.133946	0.134524	
Ethylbenzene			0.00386709	0.00381685	
o-Xylene			0.00959084	0.00937498	
Octane			0.0637064	0.0649387	
Triethylene Glycol			0.00130059	0.00148949	
Water			1.38529	0.881901	

Mass Fraction	46 %	47 %	48 %	49 %	
Carbon Dioxide			31.7501	31.4398	
Hydrogen Sulfide			0	0	
Nitrogen			0.272598	0.26537	
Methane			21.5052	21.2849	
Ethane			12.4798	12.5436	
Propane			12.7324	12.9526	
Isobutane			2.02066	2.06402	
n-Butane			6.67692	6.82536	
Isopentane			2.15248	2.2141	
n-Pentane			2.95123	3.07048	
Cyclopentane			0	0	
n-Hexane			1.10683	1.15263	
Cyclohexane			0.640889	0.652079	
i-C6			1.6304	1.68775	
iC7			1.44745	1.48822	
Methylcyclohexane			0.426169	0.432257	
2,2,4-Trimethylpentane			0	0	
Benzene			0.768466	0.772985	
Toluene			0.384266	0.383182	
Ethylbenzene			0.0127829	0.0125271	
o-Xylene			0.031703	0.0307693	
Octane			0.226579	0.229321	
Triethylene Glycol			0.00608128	0.00691503	
Water			0.777039	0.491164	

Process Streams Report All Streams Tabulated by Total Phase					
Client Name:	DELAWARE DIVISION			Job: DELAWARE CS	
Location:	LONGHORN COMPRESSOR STATION				
Flowsheet:	Inlet				
Mass Flow	46 lb/h	47 lb/h	48 lb/h	49 lb/h	
Carbon Dioxide			22.5561	143.006	
Hydrogen Sulfide			0	0	
Nitrogen			0.193661	1.20705	
Methane			15.2779	96.8155	
Ethane			8.86598	57.0553	
Propane			9.04541	58.9155	
Isobutane			1.43553	9.38831	
n-Butane			4.74346	31.0455	
Isopentane			1.52918	10.071	
n-Pentane			2.09664	13.9663	
Cyclopentane			0	0	
n-Hexane			0.786319	5.24278	
Cyclohexane			0.455304	2.96602	
i-C6			1.15828	7.67681	
iC7			1.02831	6.76926	
Methylcyclohexane			0.302762	1.96614	
2,2,4-Trimethylpentane			0	0	
Benzene			0.545939	3.51596	
Toluene			0.272993	1.74292	
Ethylbenzene			0.00908128	0.0569804	
o-Xylene			0.0225227	0.139956	
Octane			0.160968	1.04308	
Triethylene Glycol			0.00432031	0.0314534	
Water			0.552029	2.23409	
Stream Properties					
Property	Units	46	47	48	49
Temperature	°F			158.575	158.748
Molecular Weight	lb/lbmol			32.1172	32.347
Std Vapor Volumetric Flow	MMSCFD			0.0201459	0.128069
Std Liquid Volumetric Flow	sgpm			0.290114	1.85809
Gross Ideal Gas Heating Value	Btu/ft ³			1266.99	1286.26
Remarks					

Tankage Plant Schematic		
Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Tankage	



Process Streams Report

All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Tankage	

Connections

	Condensate Sales	Gas to Flare	Produced Water	Vapor Combustor 2	1
From Block	Condensate Tanks	MIX-102	PW Tanks	MIX-104	BTEX 2 COND VAPORS
To Block	--	--	--	--	MIX-104

Stream Composition

Mole Fraction	Condensate Sales %	Gas to Flare %	Produced Water %	Vapor Combustor 2 %	1 %
Carbon Dioxide	0.0493466	4.02375	0.00602723	30.5787	30.5787
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	2.66512E-05	0.0187697	1.9675E-06	0.0138616	0.0138616
Methane	0.0418364	8.50973	0.000660475	7.2158	7.21579
Ethane	0.461288	17.9582	0.000350236	7.47339	7.47339
Propane	2.13166	24.761	0.000192482	9.72519	9.72519
Isobutane	1.07052	5.07671	1.53394E-05	1.38569	1.38569
n-Butane	4.46007	14.6547	9.93499E-05	6.3362	6.3362
Isopentane	3.35844	4.54317	2.48617E-05	2.55796	2.55797
n-Pentane	5.67126	5.87321	1.77976E-05	3.9647	3.9647
Cyclopentane	0	0	0	0	0
n-Hexane	7.68965	2.35944	4.10463E-06	1.47448	1.47448
Cyclohexane	3.88091	0.921035	8.98816E-05	1.96733	1.96733
i-C6	7.33462	3.16222	1.12308E-05	2.04075	2.04075
iC7	21.1827	2.90228	4.65534E-06	1.54357	1.54357
Methylcyclohexane	7.40662	0.757538	1.55726E-05	0.823951	0.823951
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	2.66064	0.760852	0.0153175	10.3369	10.3369
Toluene	5.0272	0.445876	0.00370078	3.22352	3.22352
Ethylbenzene	0.777094	0.0235392	4.0378E-05	0.0432602	0.0432603
o-Xylene	2.5123	0.0628572	0.000220954	0.158683	0.158684
Octane	24.2466	0.809796	1.02166E-07	0.128958	0.128958
Triethylene Glycol	4.8472E-07	1.88493E-09	0.00140157	1.07128E-07	1.07128E-07
Water	0.0371722	2.37527	99.9718	9.00714	9.00714

Mass Fraction	Condensate Sales %	Gas to Flare %	Produced Water %	Vapor Combustor 2 %	1 %
Carbon Dioxide	0.0232386	3.53611	0.014711	26.6919	26.6919
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	7.98893E-06	0.0104996	3.05674E-06	0.00770179	0.00770178
Methane	0.00718176	2.72606	0.000587631	2.29598	2.29598
Ethane	0.148422	10.7828	0.000584061	4.45708	4.45708
Propane	1.00582	21.8028	0.000470721	8.50563	8.50563
Isobutane	0.665797	5.89214	4.94456E-05	1.59742	1.59742
n-Butane	2.77389	17.0086	0.000320248	7.30439	7.30439
Isopentane	2.59282	6.54541	9.94802E-05	3.66047	3.66047
n-Pentane	4.37839	8.46163	7.12143E-05	5.67352	5.67352
Cyclopentane	0	0	0	0	0
n-Hexane	7.0908	4.06015	1.96171E-05	2.5202	2.5202
Cyclohexane	3.49496	1.54785	0.000419519	3.28393	3.28393
i-C6	6.76342	5.44157	5.3675E-05	3.48808	3.48808
iC7	22.7124	5.80718	2.58705E-05	3.06771	3.06771
Methylcyclohexane	7.78172	1.48526	8.47986E-05	1.60459	1.60459
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	2.22387	1.18677	0.0663565	16.0147	16.0147
Toluene	4.95647	0.82036	0.0189109	5.89094	5.89094
Ethylbenzene	0.882796	0.0499024	0.000237741	0.0910927	0.0910927
o-Xylene	2.85403	0.133256	0.00130095	0.334138	0.334138
Octane	29.6368	1.84714	6.47231E-07	0.292171	0.292171
Triethylene Glycol	7.78912E-07	5.65244E-09	0.011673	3.19087E-07	3.19087E-07

* User Specified Values

? Extrapolated or Approximate Values

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Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Tankage	

	Condensate Sales	Gas to Flare	Produced Water	Vapor Combustor 2	1
Mass Fraction	%	%	%	%	%
Water	0.0071658	0.854481	99.884	3.21841	3.21841

	Condensate Sales	Gas to Flare	Produced Water	Vapor Combustor 2	1
Mass Flow	lb/h	lb/h	lb/h	lb/h	lb/h
Carbon Dioxide	1.47003	3.9245	0.938955	40.0202	13.3401
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	0.000505365	0.0116528	0.000195102	0.0115476	0.0038492
Methane	0.454306	3.02548	0.0375066	3.44246	1.14749
Ethane	9.3889	11.9672	0.0372787	6.68268	2.22756
Propane	63.6262	24.1975	0.0300446	12.7529	4.25095
Isobutane	42.1172	6.53931	0.00315596	2.39509	0.798362
n-Butane	175.471	18.8768	0.0204404	10.9518	3.6506
Isopentane	164.017	7.26433	0.00634951	5.4883	1.82943
n-Pentane	276.969	9.39101	0.00454539	8.50654	2.83552
Cyclopentane	0	0	0	0	0
n-Hexane	448.551	4.50609	0.0012521	3.77864	1.25955
Cyclohexane	221.085	1.71786	0.0267765	4.92373	1.64124
i-C6	427.842	6.03925	0.0034259	5.22982	1.74327
iC7	1436.75	6.44501	0.00165123	4.59955	1.53318
Methylcyclohexane	492.258	1.6484	0.00541242	2.40583	0.801943
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	140.678	1.31712	4.23532	24.0115	8.00383
Toluene	313.538	0.910464	1.20702	8.83254	2.94418
Ethylbenzene	55.8441	0.0553835	0.0151742	0.136579	0.0455264
o-Xylene	180.541	0.147892	0.0830355	0.500987	0.166996
Octane	1874.77	2.05002	4.13107E-05	0.438064	0.146021
Triethylene Glycol	4.92726E-05	6.27328E-09	0.745053	4.7842E-07	1.59474E-07
Water	0.453296	0.948333	6375.28	4.82549	1.6085

Stream Properties

Property	Units	Condensate Sales	Gas to Flare	Produced Water	Vapor Combustor 2	1
Temperature	°F	95	94.8676	95	110	110
Molecular Weight	lb/lbmol	93.4533	50.0785	18.0311	50.4181	50.4181
Std Vapor Volumetric Flow	MMSCFD	0.616492	0.0201842	3.22393	0.0270844	0.00902812
Std Liquid Volumetric Flow	sgpm	18.0298	0.40577	12.7616	0.445491	0.148497
Gross Ideal Gas Heating Value	Btu/ft ³	5044.3	2693.21	51.135	1899.31	1899.31

Remarks

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Tankage	

Connections

	2	3	4	5	6
From Block	LIQUIDS TO STORAGE	FS LIQUIDS	FT CON1	BTEX LIQUIDS 1	BTEX COND. VAPORS 1
To Block	MIX-100	MIX-100	MIX-106	MIX-105	MIX-104

Stream Composition

Mole Fraction	2 %	3 %	4 %	5 %	6 %
Carbon Dioxide	0.00515859			0.031888	30.5787
Hydrogen Sulfide	0			0	0
Nitrogen	4.95995E-06			8.78074E-07	0.0138616
Methane	0.00145139			0.00170611	7.2158
Ethane	0.0010524			0.00988457	7.47339
Propane	0.000653858			0.0388109	9.72518
Isobutane	7.15256E-05			0.0127362	1.38569
n-Butane	0.000291799			0.0872199	6.33619
Isopentane	5.62329E-05			0.0829398	2.55796
n-Pentane	3.38709E-05			0.165477	3.9647
Cyclopentane	0			0	0
n-Hexane	8.61775E-06			0.182917	1.47448
Cyclohexane	5.55331E-05			0.377887	1.96733
i-C6	2.24652E-05			0.18682	2.04075
iC7	1.2747E-05			0.40267	1.54357
Methylcyclohexane	1.95213E-05			0.346864	0.823951
2,2,4-Trimethylpentane	0			0	0
Benzene	0.00119716			2.42982	10.3369
Toluene	0.000641452			2.27502	3.22353
Ethylbenzene	3.21262E-05			0.101394	0.0432602
o-Xylene	0.000130293			0.328261	0.158683
Octane	9.36531E-07			0.151877	0.128958
Triethylene Glycol	0.000317954			0.0158999	1.07128E-07
Water	99.9888			92.7699	9.00714

Mass Fraction	2 %	3 %	4 %	5 %	6 %
Carbon Dioxide	0.0125994			0.0609823	26.6919
Hydrogen Sulfide	0			0	0
Nitrogen	7.71106E-06			1.06887E-06	0.0077018
Methane	0.00129219			0.00118935	2.29598
Ethane	0.0017562			0.0129154	4.45708
Propane	0.00160011			0.0743667	8.50563
Isobutane	0.000230714			0.032167	1.59742
n-Butane	0.000941233			0.220286	7.30438
Isopentane	0.00022516			0.260029	3.66047
n-Pentane	0.000135621			0.518795	5.67351
Cyclopentane	0			0	0
n-Hexane	4.12143E-05			0.684964	2.5202
Cyclohexane	0.000259374			1.38196	3.28393
i-C6	0.00010744			0.699578	3.48808
iC7	7.08852E-05			1.75329	3.06771
Methylcyclohexane	0.000106373			1.47992	1.60459
2,2,4-Trimethylpentane	0			0	0
Benzene	0.00518969			8.24747	16.0147
Toluene	0.00328002			9.10867	5.89095
Ethylbenzene	0.000189283			0.467759	0.0910927
o-Xylene	0.000767671			1.51436	0.334138
Octane	5.93701E-06			0.753868	0.292171
Triethylene Glycol	0.00264988			0.103756	3.19086E-07
Water	99.9685			72.6237	3.21841

* User Specified Values

? Extrapolated or Approximate Values

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		Process Streams Report All Streams Tabulated by Total Phase					
Client Name:	DELAWARE DIVISION				Job: DELAWARE CS		
Location:	LONGHORN COMPRESSOR STATION						
Flowsheet:	Tankage						
Mass Flow	2 lb/h	3 lb/h	4 lb/h	5 lb/h	6 lb/h		
Carbon Dioxide	0.751726			0.114998	13.3401		
Hydrogen Sulfide	0			0	0		
Nitrogen	0.000460071			2.01565E-06	0.00384921		
Methane	0.0770969			0.00224283	1.14749		
Ethane	0.104781			0.0243554	2.22756		
Propane	0.0954686			0.140238	4.25095		
Isobutane	0.0137653			0.0606595	0.798361		
n-Butane	0.0561575			0.415409	3.65059		
Isopentane	0.0134339			0.490355	1.82943		
n-Pentane	0.00809166			0.978327	2.83551		
Cyclopentane	0			0	0		
n-Hexane	0.002459			1.29168	1.25955		
Cyclohexane	0.0154752			2.60605	1.64124		
i-C6	0.00641025			1.31924	1.74327		
iC7	0.00422928			3.30631	1.53318		
Methylcyclohexane	0.0063466			2.79079	0.801943		
2,2,4-Trimethylpentane	0			0	0		
Benzene	0.309637			15.5528	8.00383		
Toluene	0.195698			17.1768	2.94418		
Ethylbenzene	0.0112933			0.882085	0.0455264		
o-Xylene	0.0458021			2.85574	0.166996		
Octane	0.000354224			1.42162	0.146021		
Triethylene Glycol	0.158102			0.195661	1.59473E-07		
Water	5964.5			136.951	1.6085		
Stream Properties							
Property	Units	2	3	4	5	6	
Temperature	°F	95.0339			126.093	110	
Molecular Weight	lb/lbmol	18.0189			23.0128	50.4181	
Std Vapor Volumetric Flow	MMSCFD	3.01569	0	0	0.0746316	0.00902812	
Std Liquid Volumetric Flow	sgpm	11.9288	0	0	0.399874	0.148497	
Gross Ideal Gas Heating Value	Btu/ft^3	50.4704			360.861	1899.31	
Remarks							

Process Streams Report All Streams Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Tankage	

Connections

	7	8	9	10	11
From Block	MIX-100	Gun Barrel	Condensate Tanks	Gun Barrel	Gun Barrel
To Block	Gun Barrel	MIX-101	MIX-101	MIX-103	PW Tanks

Stream Composition

Mole Fraction	7 %	8 %	9 %	10 %	11 %
Carbon Dioxide	0.00700593	15.3446	4.02628	0.174794	0.00602723
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	4.67784E-06	0.188296	0.0206674	0.000144121	1.9675E-06
Methane	0.001469	30.8612	9.29955	0.0995139	0.000660475
Ethane	0.00166282	11.9203	17.4476	0.245987	0.000350236
Propane	0.00329098	9.39661	24.5497	0.621847	0.000192482
Isobutane	0.000946812	1.19765	5.0529	0.190526	1.53394E-05
n-Butane	0.00629962	5.25622	14.5321	1.27428	9.93499E-05
Isopentane	0.00578453	2.01089	4.53358	1.19006	2.48617E-05
n-Pentane	0.0114681	3.06101	5.87093	2.36791	1.77976E-05
Cyclopentane	0	0	0	0	0
n-Hexane	0.0126499	1.08193	2.34971	2.62025	4.10463E-06
Cyclohexane	0.0261684	1.43649	0.93426	5.40542	8.98816E-05
i-C6	0.0129325	1.53243	3.15586	2.67639	1.12308E-05
iC7	0.0278414	1.10785	3.15313	5.7707	4.65534E-06
Methylcyclohexane	0.0239908	0.581307	0.760447	4.97104	1.55726E-05
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.169045	6.93857	0.774792	31.8821	0.0153175
Toluene	0.157829	2.19978	0.458683	31.9641	0.00370078
Ethylbenzene	0.00703748	0.0287417	0.0243074	1.45113	4.0378E-05
o-Xylene	0.0228082	0.104531	0.0659299	4.68445	0.000220954
Octane	0.0104974	0.085754	0.817786	2.17689	1.02166E-07
Triethylene Glycol	0.00139485	2.81615E-09	1.65635E-09	1.22311E-05	0.00140157
Water	99.4899	5.66592	2.17176	0.232447	99.9718

Mass Fraction	7 %	8 %	9 %	10 %	11 %
Carbon Dioxide	0.0167897	16.5742	3.5356	0.0883866	0.014711
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	7.1358E-06	0.12946	0.0115522	4.63881E-05	3.05674E-06
Methane	0.00128328	12.1511	2.97678	0.0183429	0.000587631
Ethane	0.00272267	8.79704	10.4681	0.0849854	0.000584061
Propane	0.00790228	10.1694	21.6001	0.315059	0.000470721
Isobutane	0.00299666	1.70845	5.85998	0.127236	4.94456E-05
n-Butane	0.0199383	7.49802	16.8533	0.850979	0.000320248
Isopentane	0.0227263	3.56079	6.52655	0.986532	9.94802E-05
n-Pentane	0.0450557	5.42031	8.45181	1.96294	7.12143E-05
Cyclopentane	0	0	0	0	0
n-Hexane	0.059361	2.2883	4.04028	2.59441	1.96171E-05
Cyclohexane	0.119925	2.96713	1.56886	5.22692	0.000419519
i-C6	0.0606872	3.24111	5.42644	2.65	5.3675E-05
iC7	0.151914	2.7245	6.30423	6.64382	2.58705E-05
Methylcyclohexane	0.12827	1.40083	1.48982	5.60803	8.47986E-05
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.719037	13.302	1.20758	28.6139	0.0663565
Toluene	0.791879	4.97451	0.84327	33.8389	0.0189109
Ethylbenzene	0.0406845	0.07489	0.0514912	1.77012	0.000237741
o-Xylene	0.131857	0.272368	0.139662	5.71417	0.00130095
Octane	0.0652964	0.240414	1.86392	2.8571	6.47231E-07
Triethylene Glycol	0.0114065	1.03795E-08	4.96316E-09	2.11043E-05	0.011673
Water	97.6003	2.5052	0.780669	0.0481147	99.884

* User Specified Values

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Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Tankage	

Mass Flow	7 lb/h	8 lb/h	9 lb/h	10 lb/h	11 lb/h
Carbon Dioxide	1.09672	0.0258319	3.48671	0.131935	0.938955
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	0.000466118	0.000201772	0.0113925	6.9244E-05	0.000195102
Methane	0.0838254	0.0189382	2.93561	0.0273806	0.0375066
Ethane	0.177848	0.0137108	10.3233	0.126858	0.0372787
Propane	0.516186	0.0158497	21.3014	0.470291	0.0300446
Isobutane	0.195745	0.00266274	5.77895	0.189926	0.00315596
n-Butane	1.30239	0.0116861	16.6203	1.27026	0.0204404
Isopentane	1.4845	0.00554973	6.4363	1.47261	0.00634951
n-Pentane	2.94309	0.0084479	8.33494	2.93009	0.00454539
Cyclopentane	0	0	0	0	0
n-Hexane	3.87752	0.00356646	3.9844	3.8727	0.0012521
Cyclohexane	7.83366	0.00462447	1.54717	7.80226	0.0267765
i-C6	3.96415	0.00505148	5.3514	3.95568	0.0034259
iC7	9.92319	0.00424632	6.21705	9.91729	0.00165123
Methylcyclohexane	8.37876	0.00218329	1.46921	8.37116	0.00541242
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	46.9683	0.020732	1.19088	42.7122	4.23532
Toluene	51.7264	0.00775309	0.831609	50.5116	1.20702
Ethylbenzene	2.65756	0.000116721	0.0507791	2.64227	0.0151742
o-Xylene	8.61306	0.000424503	0.13773	8.5296	0.0830355
Octane	4.26523	0.000374701	1.83815	4.26481	4.13107E-05
Triethylene Glycol	0.745084	1.61772E-11	4.89453E-09	3.15026E-05	0.745053
Water	6375.36	0.00390451	0.769874	0.0718213	6375.28

Stream Properties

Property	Units	7	8	9	10	11
Temperature	°F	96.9295	95 *	95 *	95	95
Molecular Weight	lb/lbmol	18.3641	40.7445	50.1172	87.0336	18.0311
Std Vapor Volumetric Flow	MMSCFD	3.23958	3.48386E-05	0.0179214	0.0156204	3.22393
Std Liquid Volumetric Flow	sgpm	13.1284	0.000553994	0.360362	0.366203	12.7616
Gross Ideal Gas Heating Value	Btu/ft ³	71.9222	1825.17	2696.93	4358.33	51.135

Remarks

Process Streams Report All Streams Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Tankage	

Connections

	12	13	14	15	16
From Block	Cond. Tank	PW Tanks	MIX-103	MIX-101	BTEX 3 COND VAPORS
To Block	MIX-103	MIX-101	Condensate Tanks	MIX-102	MIX-104

Stream Composition

Mole Fraction	12 %	13 %	14 %	15 %	16 %
Carbon Dioxide	0.161359		0.16169	4.04824	30.5787
Hydrogen Sulfide	0		0	0	0
Nitrogen	0.000621481		0.000609727	0.0209927	0.0138616
Methane	0.308501		0.303355	9.34138	7.21579
Ethane	0.958676		0.941129	17.4368	7.47339
Propane	2.81904		2.76494	24.5203	9.72519
Isobutane	1.20807		1.18302	5.04542	1.38569
n-Butane	4.83219		4.74459	14.5141	6.3362
Isopentane	3.44721		3.39163	4.52868	2.55797
n-Pentane	5.76043		5.6769	5.86548	3.9647
Cyclopentane	0		0	0	0
n-Hexane	7.66297		7.53881	2.34725	1.47448
Cyclohexane	3.75708		3.79767	0.935235	1.96733
i-C6	7.33118		7.21657	3.15272	2.04075
iC7	21.0496		20.6734	3.14916	1.54357
Methylcyclohexane	7.27562		7.21888	0.760099	0.823951
2,2,4-Trimethylpentane	0		0	0	0
Benzene	1.86838		2.60737	0.786751	10.3369
Toluene	4.21491		4.89815	0.462061	3.22352
Ethylbenzene	0.738277		0.755829	0.024316	0.0432603
o-Xylene	2.38662		2.4432	0.0660048	0.158684
Octane	24.1252		23.5848	0.816365	0.128958
Triethylene Glycol	1.7421E-07		4.71074E-07	1.6586E-09	1.07128E-07
Water	0.0940644		0.0974717	2.17854	9.00714

Mass Fraction	12 %	13 %	14 %	15 %	16 %
Carbon Dioxide	0.0768873		0.0771545	3.55618	26.6919
Hydrogen Sulfide	0		0	0	0
Nitrogen	0.000188499		0.000185197	0.0117383	0.00770178
Methane	0.0535848		0.052766	2.99125	2.29598
Ethane	0.312109		0.306832	10.4655	4.45708
Propane	1.3459		1.32195	21.5821	8.50563
Isobutane	0.760237		0.74553	5.85343	1.59742
n-Butane	3.04089		2.99001	16.8385	7.30439
Isopentane	2.69285		2.6532	6.52187	3.66047
n-Pentane	4.49986		4.44091	8.44703	5.67352
Cyclopentane	0		0	0	0
n-Hexane	7.14982		7.04397	4.03751	2.5202
Cyclohexane	3.42349		3.46539	1.57107	3.28393
i-C6	6.84025		6.74289	5.42299	3.48808
iC7	22.8368		22.4606	6.29858	3.06771
Methylcyclohexane	7.73455		7.68514	1.48967	1.60459
2,2,4-Trimethylpentane	0		0	0	0
Benzene	1.58014		2.20827	1.22666	16.0147
Toluene	4.20479		4.89334	0.849789	5.89094
Ethylbenzene	0.848625		0.870035	0.0515281	0.0910927
o-Xylene	2.74334		2.81236	0.139871	0.334138
Octane	29.8373		29.2105	1.86136	0.292171
Triethylene Glycol	2.83256E-07		7.67031E-07	4.9717E-09	3.19087E-07
Water	0.0183477		0.0190393	0.78339	3.21841

* User Specified Values

? Extrapolated or Approximate Values

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		Process Streams Report All Streams Tabulated by Total Phase					
Client Name:	DELAWARE DIVISION				Job: DELAWARE CS		
Location:	LONGHORN COMPRESSOR STATION						
Flowsheet:	Tankage						
Mass Flow	12 lb/h	13 lb/h	14 lb/h	15 lb/h	16 lb/h		
Carbon Dioxide	4.82481		4.95674	3.51254	13.3401		
Hydrogen Sulfide	0		0	0	0		
Nitrogen	0.0118286		0.0118979	0.0115943	0.0038492		
Methane	3.36254		3.38992	2.95455	1.14749		
Ethane	19.5854		19.7122	10.3371	2.22756		
Propane	84.4573		84.9276	21.3173	4.25095		
Isobutane	47.7062		47.8961	5.78161	0.798362		
n-Butane	190.821		192.092	16.6319	3.6506		
Isopentane	168.981		170.453	6.44185	1.82943		
n-Pentane	282.374		285.304	8.34338	2.83552		
Cyclopentane	0		0	0	0		
n-Hexane	448.663		452.536	3.98797	1.25955		
Cyclohexane	214.83		222.632	1.55179	1.64124		
i-C6	429.237		433.193	5.35645	1.74327		
iC7	1433.05		1442.97	6.22129	1.53318		
Methylcyclohexane	485.356		493.727	1.4714	0.801943		
2,2,4-Trimethylpentane	0		0	0	0		
Benzene	99.1567		141.869	1.21161	8.00383		
Toluene	263.858		314.369	0.839362	2.94418		
Ethylbenzene	53.2526		55.8949	0.0508959	0.0455264		
o-Xylene	172.149		180.679	0.138155	0.166996		
Octane	1872.34		1876.61	1.83852	0.146021		
Triethylene Glycol	1.77748E-05		4.92775E-05	4.9107E-09	1.59474E-07		
Water	1.15135		1.22317	0.773778	1.6085		
Stream Properties							
Property	Units	12	13	14	15	16	
Temperature	°F	95	95	91.1285	94.9997	110	
Molecular Weight	lb/lbmol	92.3602		92.2291	50.099	50.4181	
Std Vapor Volumetric Flow	MMSCFD	0.618793	0	0.634413	0.0179562	0.00902812	
Std Liquid Volumetric Flow	sgpm	18.024	0	18.3902	0.360916	0.148497	
Gross Ideal Gas Heating Value	Btu/ft^3	4993.63		4977.99	2695.24	1899.31	
Remarks							

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Tankage	

Connections

	17	18	19	20	22
From Block	BTEX LIQUID 2	BTEX LIQUID 3	BTEX 4 COND Vapors	W&B	BTEX 4 LIQUIDS
To Block	MIX-105	MIX-105	--	MIX-102	--

Stream Composition

Mole Fraction	17 %	18 %	19 %	20 %	22 %
Carbon Dioxide	0.0318881	0.0318881		3.82637	
Hydrogen Sulfide	0	0		0	
Nitrogen	8.78077E-07	8.78077E-07		0.000854164	
Methane	0.00170612	0.00170612		1.80733	
Ethane	0.00988465	0.00988465		22.1604	
Propane	0.0388112	0.0388112		26.7003	
Isobutane	0.0127363	0.0127363		5.32887	
n-Butane	0.0872207	0.0872207		15.7878	
Isopentane	0.0829406	0.0829406		4.65995	
n-Pentane	0.165478	0.165478		5.93553	
Cyclopentane	0	0		0	
n-Hexane	0.182919	0.182919		2.45771	
Cyclohexane	0.37789	0.37789		0.806601	
i-C6	0.186822	0.186822		3.23883	
iC7	0.402673	0.402673		0.912642	
Methylcyclohexane	0.346867	0.346867		0.7369	
2,2,4-Trimethylpentane	0	0		0	
Benzene	2.42984	2.42984		0.552122	
Toluene	2.27503	2.27503		0.315445	
Ethylbenzene	0.101394	0.101394		0.0172789	
o-Xylene	0.328264	0.328264		0.0374896	
Octane	0.151878	0.151878		0.756853	
Triethylene Glycol	0.0158999	0.0158999		3.70894E-09	
Water	92.7699	92.7699		3.9607	

Mass Fraction	17 %	18 %	19 %	20 %	22 %
Carbon Dioxide	0.0609825	0.0609825		3.37379	
Hydrogen Sulfide	0	0		0	
Nitrogen	1.06888E-06	1.06888E-06		0.000479392	
Methane	0.00118935	0.00118935		0.58089	
Ethane	0.0129155	0.0129155		13.35	
Propane	0.0743672	0.0743672		23.5883	
Isobutane	0.0321673	0.0321673		6.20528	
n-Butane	0.220288	0.220288		18.3844	
Isopentane	0.260031	0.260031		6.73588	
n-Pentane	0.518799	0.518799		8.57972	
Cyclopentane	0	0		0	
n-Hexane	0.684968	0.684968		4.24324	
Cyclohexane	1.38197	1.38197		1.36002	
i-C6	0.699583	0.699583		5.59186	
iC7	1.75331	1.75331		1.83215	
Methylcyclohexane	1.47993	1.47993		1.44958	
2,2,4-Trimethylpentane	0	0		0	
Benzene	8.24752	8.24752		0.864045	
Toluene	9.10872	9.10872		0.582303	
Ethylbenzene	0.467762	0.467762		0.0367521	
o-Xylene	1.51438	1.51438		0.0797401	
Octane	0.753872	0.753872		1.73209	
Triethylene Glycol	0.103757	0.103757		1.1159E-08	
Water	72.6235	72.6235		1.42954	

* User Specified Values

? Extrapolated or Approximate Values

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Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Tankage	

Mass Flow	17 lb/h	18 lb/h	19 lb/h	20 lb/h	22 lb/h
Carbon Dioxide	0.114999	0.114999		0.411957	
Hydrogen Sulfide	0	0		0	
Nitrogen	2.01565E-06	2.01565E-06		5.85363E-05	
Methane	0.00224284	0.00224284		0.0709297	
Ethane	0.0243556	0.0243556		1.6301	
Propane	0.140239	0.140239		2.88025	
Isobutane	0.06066	0.06066		0.757697	
n-Butane	0.415412	0.415412		2.24483	
Isopentane	0.490358	0.490358		0.822486	
n-Pentane	0.978334	0.978334		1.04763	
Cyclopentane	0	0		0	
n-Hexane	1.29169	1.29169		0.518122	
Cyclohexane	2.60607	2.60607		0.166066	
i-C6	1.31925	1.31925		0.682795	
iC7	3.30633	3.30633		0.223715	
Methylcyclohexane	2.79081	2.79081		0.177001	
2,2,4-Trimethylpentane	0	0		0	
Benzene	15.5529	15.5529		0.105504	
Toluene	17.1769	17.1769		0.0711023	
Ethylbenzene	0.88209	0.88209		0.00448763	
o-Xylene	2.85576	2.85576		0.00973668	
Octane	1.42163	1.42163		0.211497	
Triethylene Glycol	0.195661	0.195661		1.36258E-09	
Water	136.951	136.951		0.174555	

Stream Properties

Property	Units	17	18	19	20	22
Temperature	°F	118.048	118.048		94.1759	
Molecular Weight	lb/lbmol	23.0129	23.0129		49.9132	
Std Vapor Volumetric Flow	MMSCFD	0.0746315	0.0746315		0.00222804	
Std Liquid Volumetric Flow	sgpm	0.399874	0.399874		0.0448541	
Gross Ideal Gas Heating Value	Btu/ft ³	360.863	360.863		2676.85	

Remarks

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Tankage	

Connections

	23	24	25	26	27
From Block	MIX-105	FT 2 COND	FT 3 COND	FT 4 COND	MIX-106
To Block	MIX-100	MIX-106	MIX-106	--	MIX-100

Stream Composition

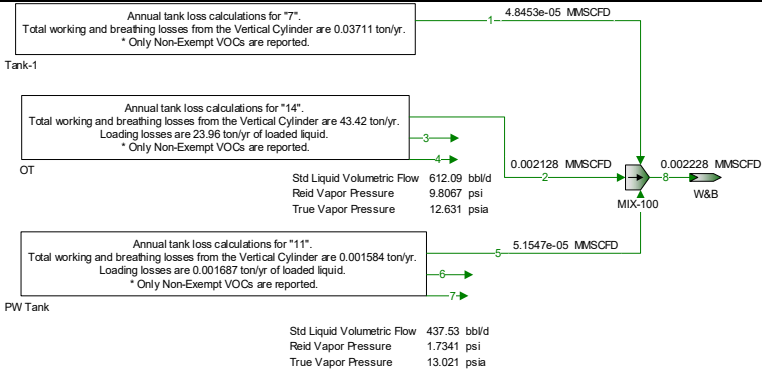
Mole Fraction	23 %	24 %	25 %	26 %	27 %
Carbon Dioxide	0.0318881				
Hydrogen Sulfide	0				
Nitrogen	8.78076E-07				
Methane	0.00170612				
Ethane	0.00988462				
Propane	0.0388111				
Isobutane	0.0127363				
n-Butane	0.0872204				
Isopentane	0.0829403				
n-Pentane	0.165478				
Cyclopentane	0				
n-Hexane	0.182918				
Cyclohexane	0.377889				
i-C6	0.186821				
iC7	0.402672				
Methylcyclohexane	0.346866				
2,2,4-Trimethylpentane	0				
Benzene	2.42983				
Toluene	2.27503				
Ethylbenzene	0.101394				
o-Xylene	0.328263				
Octane	0.151877				
Triethylene Glycol	0.0158999				
Water	92.7699				

Mass Fraction	23 %	24 %	25 %	26 %	27 %
Carbon Dioxide	0.0609824				
Hydrogen Sulfide	0				
Nitrogen	1.06888E-06				
Methane	0.00118935				
Ethane	0.0129154				
Propane	0.0743671				
Isobutane	0.0321672				
n-Butane	0.220287				
Isopentane	0.26003				
n-Pentane	0.518798				
Cyclopentane	0				
n-Hexane	0.684967				
Cyclohexane	1.38196				
i-C6	0.699581				
iC7	1.7533				
Methylcyclohexane	1.47993				
2,2,4-Trimethylpentane	0				
Benzene	8.2475				
Toluene	9.10871				
Ethylbenzene	0.467761				
o-Xylene	1.51437				
Octane	0.753871				
Triethylene Glycol	0.103757				
Water	72.6235				

		Process Streams Report All Streams Tabulated by Total Phase					
Client Name:	DELAWARE DIVISION				Job: DELAWARE CS		
Location:	LONGHORN COMPRESSOR STATION						
Flowsheet:	Tankage						
Mass Flow	23 lb/h	24 lb/h	25 lb/h	26 lb/h	27 lb/h		
Carbon Dioxide	0.344996						
Hydrogen Sulfide	0						
Nitrogen	6.04696E-06						
Methane	0.00672852						
Ethane	0.0730665						
Propane	0.420717						
Isobutane	0.18198						
n-Butane	1.24623						
Isopentane	1.47107						
n-Pentane	2.935						
Cyclopentane	0						
n-Hexane	3.87506						
Cyclohexane	7.81819						
i-C6	3.95774						
iC7	9.91896						
Methylcyclohexane	8.37241						
2,2,4-Trimethylpentane	0						
Benzene	46.6586						
Toluene	51.5307						
Ethylbenzene	2.64627						
o-Xylene	8.56726						
Octane	4.26488						
Triethylene Glycol	0.586982						
Water	410.853						
Stream Properties							
Property	Units	23	24	25	26	27	
Temperature	°F	120.732					
Molecular Weight	lb/lbmol	23.0129					
Std Vapor Volumetric Flow	MMSCFD	0.223895	0	0		0	
Std Liquid Volumetric Flow	sgpm	1.19962	0	0		0	
Gross Ideal Gas Heating Value	Btu/ft ³	360.863					
Remarks							

Working & Breathing Plant Schematic

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Working & Breathing	



Process Streams Report

All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Working & Breathing	

Connections

	1	2	3	4	5
From Block	--	--	--	--	--
To Block	MIX-100	MIX-100	--	--	MIX-100

Stream Composition

Mole Fraction	1 %	2 %	3 %	4 %	5 %
Carbon Dioxide	9.32861	3.57364	3.57364	0.0240132	9.08825
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	0.000991405	0.000847472	0.000847472	1.49308E-05	0.00100141
Methane	0.722406	1.86287	1.86287	0.022565	0.534299
Ethane	1.23243	23.1664	23.1664	0.285662	0.299756
Propane	0.644966	27.9394	27.9394	1.81226	0.0363194
Isobutane	0.0731804	5.57759	5.57759	1.00125	0.000980859
n-Butane	0.346242	16.5217	16.5217	4.26742	0.00485793
Isopentane	0.124462	4.87608	4.87608	3.32098	0.000424694
n-Pentane	0.186442	6.2102	6.2102	5.63974	0.000178184
Cyclopentane	0	0	0	0	0
n-Hexane	0.0633217	2.57176	2.57176	7.74802	1.01926E-05
Cyclohexane	0.0853434	0.842554	0.842554	3.91569	0.000288664
i-C6	0.0891564	3.389	3.389	7.37354	5.16657E-05
iC7	0.0192068	0.955091	0.955091	21.4143	1.6437E-06
Methylcyclohexane	0.0377336	0.770668	0.770668	7.49119	2.21048E-05
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.540583	0.564514	0.564514	2.68258	0.0514165
Toluene	0.15606	0.326623	0.326623	5.08617	0.00381542
Ethylbenzene	0.00251501	0.0180333	0.0180333	0.787019	1.49505E-05
o-Xylene	0.00549035	0.039125	0.039125	2.54464	5.50716E-05
Octane	0.00526573	0.792298	0.792298	24.5546	1.16345E-08
Triethylene Glycol	8.22129E-08	1.71919E-12	1.71919E-12	4.91152E-07	8.29655E-08
Water	86.3356	0.00157107	0.00157107	0.0283587	89.9783

Mass Fraction	1 %	2 %	3 %	4 %	5 %
Carbon Dioxide	18.8858	3.06766	3.06766	0.01125	19.5588
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	0.00127758	0.000463064	0.000463064	4.45255E-06	0.00137181
Methane	0.53312	0.582914	0.582914	0.00385357	0.419151
Ethane	1.70473	13.5871	13.5871	0.0914387	0.440761
Propane	1.30829	24.0305	24.0305	0.850695	0.078316
Isobutane	0.195663	6.32323	6.32323	0.619505	0.00278782
n-Butane	0.92575	18.7304	18.7304	2.64037	0.0138073
Isopentane	0.413084	6.86198	6.86198	2.55066	0.00149838
n-Pentane	0.618793	8.73946	8.73946	4.33158	0.000628657
Cyclopentane	0	0	0	0	0
n-Hexane	0.25102	4.32278	4.32278	7.10775	4.29521E-05
Cyclohexane	0.330404	1.38309	1.38309	3.50808	0.00118799
i-C6	0.353434	5.69646	5.69646	6.76421	0.000217721
iC7	0.0885329	1.86668	1.86668	22.8422	8.05403E-06
Methylcyclohexane	0.170432	1.47593	1.47593	7.82994	0.000106133
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	1.94246	0.860085	0.860085	2.23063	0.196397
Toluene	0.661463	0.586999	0.586999	4.98873	0.0171909
Ethylbenzene	0.0122827	0.0373427	0.0373427	0.889457	7.76161E-05
o-Xylene	0.0268135	0.0810187	0.0810187	2.87585	0.000285907
Octane	0.0276698	1.76528	1.76528	29.8583	6.4989E-08
Triethylene Glycol	5.67943E-07	5.03575E-12	5.03575E-12	7.85174E-07	6.09263E-07
Water	71.549	0.000552061	0.000552061	0.00543858	79.2673

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Working & Breathing	

Mass Flow	1 lb/h	2 lb/h	3 lb/h	4 lb/h	5 lb/h
Carbon Dioxide	0.0218412	0.367479	0.202765	0.705947	0.0226372
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	1.47751E-06	5.54711E-05	3.06075E-05	0.0002794	1.58772E-06
Methane	0.000616545	0.069828	0.0385293	0.241814	0.000485122
Ethane	0.00197149	1.62762	0.898079	5.73783	0.000510132
Propane	0.00151302	2.87865	1.58836	53.3816	9.06422E-05
Isobutane	0.000226281	0.757468	0.417951	38.8743	3.2266E-06
n-Butane	0.00107062	2.24374	1.23804	165.685	1.59805E-05
Isopentane	0.000477725	0.822007	0.453562	160.056	1.73421E-06
n-Pentane	0.000715624	1.04691	0.577659	271.809	7.27602E-07
Cyclopentane	0	0	0	0	0
n-Hexane	0.0002903	0.517832	0.285726	446.015	4.97124E-08
Cyclohexane	0.000382107	0.165682	0.0914193	220.134	1.37496E-06
i-C6	0.000408741	0.682386	0.376523	424.458	2.51989E-07
iC7	0.000102387	0.223613	0.123384	1433.36	9.32166E-09
Methylcyclohexane	0.000197102	0.176804	0.097556	491.333	1.22838E-07
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.00224642	0.103031	0.0568497	139.973	0.000227308
Toluene	0.000764972	0.0703175	0.0387993	313.045	1.98966E-05
Ethylbenzene	1.42047E-05	0.00447334	0.00246827	55.8139	8.98322E-08
o-Xylene	3.10094E-05	0.00970534	0.00535516	180.461	3.30906E-07
Octane	3.19997E-05	0.211465	0.116681	1873.63	7.52176E-11
Triethylene Glycol	6.56817E-10	6.0324E-13	3.32852E-13	4.92702E-05	7.05156E-10
Water	0.0827453	6.61322E-05	3.649E-05	0.341274	0.0917433

Stream Properties

Property	Units	1	2	3	4	5
Temperature	°F	97.9681	94.758	94.758	94.758	96.926
Molecular Weight	lb/lbmol	21.7384	51.2684	51.2684	93.9381	20.4496
Std Vapor Volumetric Flow	MMSCFD	4.84526E-05	0.00212804	0.0011742	0.608388	5.15467E-05
Std Liquid Volumetric Flow	sgpm	0.000259171	0.044349	0.0244706	17.8526	0.000245877
Gross Ideal Gas Heating Value	Btu/ft³	156.94	2797.63	2797.63	5069.78	59.213

Remarks

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Working & Breathing	

Connections

	6	7	8		
From Block	--	--	MIX-100		
To Block	--	--	W&B		

Stream Composition

Mole Fraction	6 %	7 %	8 %		
Carbon Dioxide	9.08825	0.0058164	3.82637		
Hydrogen Sulfide	0	0	0		
Nitrogen	0.00100141	1.37891E-06	0.000854164		
Methane	0.534299	0.000541681	1.80733		
Ethane	0.299756	0.000300588	22.1604		
Propane	0.0363194	0.000158406	26.7003		
Isobutane	0.000980859	1.14312E-05	5.32887		
n-Butane	0.00485793	8.08311E-05	15.7878		
Isopentane	0.000424694	1.83999E-05	4.65995		
n-Pentane	0.000178184	1.026E-05	5.93553		
Cyclopentane	0	0	0		
n-Hexane	1.01926E-05	1.92821E-06	2.45771		
Cyclohexane	0.000288664	8.40359E-05	0.806601		
i-C6	5.16657E-05	7.07704E-06	3.23883		
iC7	1.6437E-06	2.28275E-06	0.912642		
Methylcyclohexane	2.21048E-05	1.34001E-05	0.7369		
2,2,4-Trimethylpentane	0	0	0		
Benzene	0.0514165	0.0152867	0.552122		
Toluene	0.00381542	0.0036912	0.315445		
Ethylbenzene	1.49505E-05	4.02527E-05	0.0172789		
o-Xylene	5.50716E-05	0.0002205	0.0374896		
Octane	1.16345E-08	2.22836E-08	0.756853		
Triethylene Glycol	8.29655E-08	0.0014016	3.70894E-09		
Water	89.9783	99.9723	3.9607		

Mass Fraction	6 %	7 %	8 %		
Carbon Dioxide	19.5588	0.0141965	3.37379		
Hydrogen Sulfide	0	0	0		
Nitrogen	0.00137181	2.14231E-06	0.000479392		
Methane	0.419151	0.000481942	0.58089		
Ethane	0.440761	0.000501269	13.35		
Propane	0.078316	0.000387388	23.5883		
Isobutane	0.00278782	3.6848E-05	6.20528		
n-Butane	0.0138073	0.000260556	18.3844		
Isopentane	0.00149838	7.36251E-05	6.73588		
n-Pentane	0.000628657	4.10542E-05	8.57972		
Cyclopentane	0	0	0		
n-Hexane	4.29521E-05	9.21549E-06	4.24324		
Cyclohexane	0.00118799	0.000392237	1.36002		
i-C6	0.000217721	3.38232E-05	5.59186		
iC7	8.05403E-06	1.26857E-05	1.83215		
Methylcyclohexane	0.000106133	7.29688E-05	1.44958		
2,2,4-Trimethylpentane	0	0	0		
Benzene	0.196397	0.0662233	0.864045		
Toluene	0.0171909	0.0188621	0.582303		
Ethylbenzene	7.76161E-05	0.000237005	0.0367521		
o-Xylene	0.000285907	0.00129828	0.0797401		
Octane	6.4989E-08	1.41169E-07	1.73209		
Triethylene Glycol	6.09263E-07	0.0116733	1.1159E-08		
Water	79.2673	99.8852	1.42954		

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	Working & Breathing	

Mass Flow	6 lb/h	7 lb/h	8 lb/h		
Carbon Dioxide	0.0241033	0.906094	0.411957		
Hydrogen Sulfide	0	0	0		
Nitrogen	1.69054E-06	0.000136733	5.85363E-05		
Methane	0.000516541	0.03076	0.0709297		
Ethane	0.000543171	0.0319936	1.6301		
Propane	9.65126E-05	0.0247251	2.88025		
Isobutane	3.43556E-06	0.00235183	0.757697		
n-Butane	1.70154E-05	0.01663	2.24483		
Isopentane	1.84652E-06	0.00469913	0.822486		
n-Pentane	7.74725E-07	0.00262029	1.04763		
Cyclopentane	0	0	0		
n-Hexane	5.2932E-08	0.00058818	0.518122		
Cyclohexane	1.46401E-06	0.0250346	0.166066		
i-C6	2.68309E-07	0.00215877	0.682795		
iC7	9.92537E-09	0.000809666	0.223715		
Methylcyclohexane	1.30793E-07	0.00465724	0.177001		
2,2,4-Trimethylpentane	0	0	0		
Benzene	0.00024203	4.22671	0.105504		
Toluene	2.11852E-05	1.20387	0.0711023		
Ethylbenzene	9.56501E-08	0.0151269	0.00448763		
o-Xylene	3.52337E-07	0.0828631	0.00973668		
Octane	8.0089E-11	9.01014E-06	0.211497		
Triethylene Glycol	7.50825E-10	0.745053	1.36258E-09		
Water	0.097685	6375.19	0.174555		

Stream Properties

Property	Units	6	7	8		
Temperature	°F	96.926	96.926	94.1759		
Molecular Weight	lb/lbmol	20.4496	18.031	49.9132		
Std Vapor Volumetric Flow	MMSCFD	5.4885E-05	3.22386	0.00222804		
Std Liquid Volumetric Flow	sgpm	0.000261801	12.7612	0.0448541		
Gross Ideal Gas Heating Value	Btu/ft ³	59.213	51.1286	2676.85		

Remarks

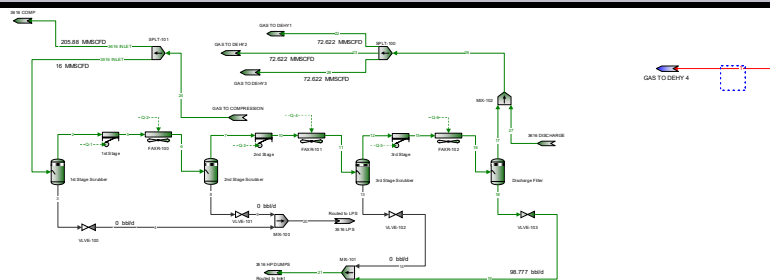
3516s Plant Schematic

Client Name:	DELAWARE DIVISION
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Job: DELAWARE CS

Client Name:	DEERWARE DIVISION
Location:	LONGHORN COMPRESSOR STATION

Flowsheet:	3516s
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* User Specified Values
? Extrapolated or Approximate Values

Process Streams Report

All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	3516s	

Connections

	1	2	3	4	5
From Block	--	1st Stage Scrubber	1st Stage Scrubber	VLVE-100	1st Stage
To Block	GAS TO DEHY 4	1st Stage	VLVE-100	MIX-100	FAXR-100

Stream Composition

Mole Fraction	1 %	2 %	3 %	4 %	5 %
Carbon Dioxide		5.32589			5.32589
Hydrogen Sulfide		0			0
Nitrogen		1.68457			1.68457
Methane		72.1269			72.1269
Ethane		10.1745			10.1745
Propane		5.46844			5.46844
Isobutane		0.764212			0.764212
n-Butane		1.96552			1.96552
Isopentane		0.508343			0.508343
n-Pentane		0.620358			0.620358
Cyclopentane		0			0
n-Hexane		0.204611			0.204611
Cyclohexane		0.079524			0.079524
i-C6		0.295337			0.295337
iC7		0.256893			0.256893
Methylcyclohexane		0.0586387			0.0586387
2,2,4-Trimethylpentane		0			0
Benzene		0.0488186			0.0488186
Toluene		0.0300633			0.0300633
Ethylbenzene		0.00159229			0.00159229
o-Xylene		0.00422606			0.00422606
Octane		0.0553359			0.0553359
Triethylene Glycol		4.83737E-12			4.83737E-12
Water		0.326304			0.326304

Mass Fraction	1 %	2 %	3 %	4 %	5 %
Carbon Dioxide		10.0747			10.0747
Hydrogen Sulfide		0			0
Nitrogen		2.02838			2.02838
Methane		49.7351			49.7351
Ethane		13.15			13.15
Propane		10.3646			10.3646
Isobutane		1.9092			1.9092
n-Butane		4.91038			4.91038
Isopentane		1.57645			1.57645
n-Pentane		1.92383			1.92383
Cyclopentane		0			0
n-Hexane		0.75789			0.75789
Cyclohexane		0.287671			0.287671
i-C6		1.09395			1.09395
iC7		1.10643			1.10643
Methylcyclohexane		0.247474			0.247474
2,2,4-Trimethylpentane		0			0
Benzene		0.163907			0.163907
Toluene		0.119062			0.119062
Ethylbenzene		0.00726605			0.00726605
o-Xylene		0.0192847			0.0192847
Octane		0.271692			0.271692
Triethylene Glycol		3.12245E-11			3.12245E-11
Water		0.252672			0.252672

Process Streams Report All Streams Tabulated by Total Phase						
Client Name:	DELAWARE DIVISION			Job: DELAWARE CS		
Location:	LONGHORN COMPRESSOR STATION					
Flowsheet:	3516s					
Mass Flow	1 lb/h	2 lb/h	3 lb/h	4 lb/h	5 lb/h	
Carbon Dioxide		4117.7			4117.7	
Hydrogen Sulfide		0			0	
Nitrogen		829.028			829.028	
Methane		20327.5			20327.5	
Ethane		5374.6			5374.6	
Propane		4236.18			4236.18	
Isobutane		780.317			780.317	
n-Butane		2006.95			2006.95	
Isopentane		644.319			644.319	
n-Pentane		786.297			786.297	
Cyclopentane		0			0	
n-Hexane		309.761			309.761	
Cyclohexane		117.575			117.575	
i-C6		447.112			447.112	
iC7		452.213			452.213	
Methylcyclohexane		101.146			101.146	
2,2,4-Trimethylpentane		0			0	
Benzene		66.9911			66.9911	
Toluene		48.6623			48.6623	
Ethylbenzene		2.96974			2.96974	
o-Xylene		7.88192			7.88192	
Octane		111.044			111.044	
Triethylene Glycol		1.27619E-08			1.27619E-08	
Water		103.271			103.271	
Stream Properties						
Property	Units	1	2	3	4	5
Temperature	°F		54.84			198 *
Molecular Weight	lb/lbmol		23.2651			23.2651
Std Vapor Volumetric Flow	MMSCFD		16	0	0	16
Std Liquid Volumetric Flow	sgpm		213.672	0	0	213.672
Gross Ideal Gas Heating Value	Btu/ft ³		1231.79			1231.79
Remarks						

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	3516s	

Connections

	6	7	8	9	10
From Block	FAXR-100	2nd Stage Scrubber	2nd Stage Scrubber	VLVE-101	2nd Stage
To Block	2nd Stage Scrubber	2nd Stage	VLVE-101	MIX-100	FAXR-101

Stream Composition

Mole Fraction	6 %	7 %	8 %	9 %	10 %
Carbon Dioxide	5.32589	5.32589			5.32589
Hydrogen Sulfide	0	0			0
Nitrogen	1.68457	1.68457			1.68457
Methane	72.1269	72.1269			72.1269
Ethane	10.1745	10.1745			10.1745
Propane	5.46844	5.46844			5.46844
Isobutane	0.764212	0.764212			0.764212
n-Butane	1.96552	1.96552			1.96552
Isopentane	0.508343	0.508343			0.508343
n-Pentane	0.620358	0.620358			0.620358
Cyclopentane	0	0			0
n-Hexane	0.204611	0.204611			0.204611
Cyclohexane	0.079524	0.079524			0.079524
i-C6	0.295337	0.295337			0.295337
iC7	0.256893	0.256893			0.256893
Methylcyclohexane	0.0586387	0.0586387			0.0586387
2,2,4-Trimethylpentane	0	0			0
Benzene	0.0488186	0.0488186			0.0488186
Toluene	0.0300633	0.0300633			0.0300633
Ethylbenzene	0.00159229	0.00159229			0.00159229
o-Xylene	0.00422606	0.00422606			0.00422606
Octane	0.0553359	0.0553359			0.0553359
Triethylene Glycol	4.83737E-12	4.83737E-12			4.83737E-12
Water	0.326304	0.326304			0.326304

Mass Fraction	6 %	7 %	8 %	9 %	10 %
Carbon Dioxide	10.0747	10.0747			10.0747
Hydrogen Sulfide	0	0			0
Nitrogen	2.02838	2.02838			2.02838
Methane	49.7351	49.7351			49.7351
Ethane	13.15	13.15			13.15
Propane	10.3646	10.3646			10.3646
Isobutane	1.9092	1.9092			1.9092
n-Butane	4.91038	4.91038			4.91038
Isopentane	1.57645	1.57645			1.57645
n-Pentane	1.92383	1.92383			1.92383
Cyclopentane	0	0			0
n-Hexane	0.75789	0.75789			0.75789
Cyclohexane	0.287671	0.287671			0.287671
i-C6	1.09395	1.09395			1.09395
iC7	1.10643	1.10643			1.10643
Methylcyclohexane	0.247474	0.247474			0.247474
2,2,4-Trimethylpentane	0	0			0
Benzene	0.163907	0.163907			0.163907
Toluene	0.119062	0.119062			0.119062
Ethylbenzene	0.00726605	0.00726605			0.00726605
o-Xylene	0.0192847	0.0192847			0.0192847
Octane	0.271692	0.271692			0.271692
Triethylene Glycol	3.12245E-11	3.12245E-11			3.12245E-11
Water	0.252672	0.252672			0.252672

* User Specified Values

? Extrapolated or Approximate Values

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Process Streams Report All Streams Tabulated by Total Phase						
Client Name:	DELAWARE DIVISION			Job: DELAWARE CS		
Location:	LONGHORN COMPRESSOR STATION					
Flowsheet:	3516s					
Mass Flow	6 lb/h	7 lb/h	8 lb/h	9 lb/h	10 lb/h	
Carbon Dioxide	4117.7	4117.7			4117.7	
Hydrogen Sulfide	0	0			0	
Nitrogen	829.028	829.028			829.028	
Methane	20327.5	20327.5			20327.5	
Ethane	5374.6	5374.6			5374.6	
Propane	4236.18	4236.18			4236.18	
Isobutane	780.317	780.317			780.317	
n-Butane	2006.95	2006.95			2006.95	
Isopentane	644.319	644.319			644.319	
n-Pentane	786.297	786.297			786.297	
Cyclopentane	0	0			0	
n-Hexane	309.761	309.761			309.761	
Cyclohexane	117.575	117.575			117.575	
i-C6	447.112	447.112			447.112	
iC7	452.213	452.213			452.213	
Methylcyclohexane	101.146	101.146			101.146	
2,2,4-Trimethylpentane	0	0			0	
Benzene	66.9911	66.9911			66.9911	
Toluene	48.6623	48.6623			48.6623	
Ethylbenzene	2.96974	2.96974			2.96974	
o-Xylene	7.88192	7.88192			7.88192	
Octane	111.044	111.044			111.044	
Triethylene Glycol	1.27619E-08	1.27619E-08			1.27619E-08	
Water	103.271	103.271			103.271	
Stream Properties						
Property	Units	6	7	8	9	10
Temperature	°F	115 *	115	115		272 *
Molecular Weight	lb/lbmol	23.2651	23.2651			23.2651
Std Vapor Volumetric Flow	MMSCFD	16	16	0	0	16
Std Liquid Volumetric Flow	sgpm	213.672	213.672	0	0	213.672
Gross Ideal Gas Heating Value	Btu/ft ³	1231.79	1231.79			1231.79
Remarks						

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	3516s	

Connections

	11	12	13	14	15
From Block	FAXR-101	3rd Stage Scrubber	3rd Stage Scrubber	VLVE-102	3rd Stage
To Block	3rd Stage Scrubber	3rd Stage	VLVE-102	MIX-101	FAXR-102

Stream Composition

Mole Fraction	11 %	12 %	13 %	14 %	15 %
Carbon Dioxide	5.32589	5.32589			5.32589
Hydrogen Sulfide	0	0			0
Nitrogen	1.68457	1.68457			1.68457
Methane	72.1269	72.1269			72.1269
Ethane	10.1745	10.1745			10.1745
Propane	5.46844	5.46844			5.46844
Isobutane	0.764212	0.764212			0.764212
n-Butane	1.96552	1.96552			1.96552
Isopentane	0.508343	0.508343			0.508343
n-Pentane	0.620358	0.620358			0.620358
Cyclopentane	0	0			0
n-Hexane	0.204611	0.204611			0.204611
Cyclohexane	0.079524	0.079524			0.079524
i-C6	0.295337	0.295337			0.295337
iC7	0.256893	0.256893			0.256893
Methylcyclohexane	0.0586387	0.0586387			0.0586387
2,2,4-Trimethylpentane	0	0			0
Benzene	0.0488186	0.0488186			0.0488186
Toluene	0.0300633	0.0300633			0.0300633
Ethylbenzene	0.00159229	0.00159229			0.00159229
o-Xylene	0.00422606	0.00422606			0.00422606
Octane	0.0553359	0.0553359			0.0553359
Triethylene Glycol	4.83737E-12	4.83737E-12			4.83737E-12
Water	0.326304	0.326304			0.326304

Mass Fraction	11 %	12 %	13 %	14 %	15 %
Carbon Dioxide	10.0747	10.0747			10.0747
Hydrogen Sulfide	0	0			0
Nitrogen	2.02838	2.02838			2.02838
Methane	49.7351	49.7351			49.7351
Ethane	13.15	13.15			13.15
Propane	10.3646	10.3646			10.3646
Isobutane	1.9092	1.9092			1.9092
n-Butane	4.91038	4.91038			4.91038
Isopentane	1.57645	1.57645			1.57645
n-Pentane	1.92383	1.92383			1.92383
Cyclopentane	0	0			0
n-Hexane	0.75789	0.75789			0.75789
Cyclohexane	0.287671	0.287671			0.287671
i-C6	1.09395	1.09395			1.09395
iC7	1.10643	1.10643			1.10643
Methylcyclohexane	0.247474	0.247474			0.247474
2,2,4-Trimethylpentane	0	0			0
Benzene	0.163907	0.163907			0.163907
Toluene	0.119062	0.119062			0.119062
Ethylbenzene	0.00726605	0.00726605			0.00726605
o-Xylene	0.0192847	0.0192847			0.0192847
Octane	0.271692	0.271692			0.271692
Triethylene Glycol	3.12245E-11	3.12245E-11			3.12245E-11
Water	0.252672	0.252672			0.252672

* User Specified Values

? Extrapolated or Approximate Values

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Process Streams Report All Streams Tabulated by Total Phase						
Client Name:	DELAWARE DIVISION			Job: DELAWARE CS		
Location:	LONGHORN COMPRESSOR STATION					
Flowsheet:	3516s					
Mass Flow	11 lb/h	12 lb/h	13 lb/h	14 lb/h	15 lb/h	
Carbon Dioxide	4117.7	4117.7			4117.7	
Hydrogen Sulfide	0	0			0	
Nitrogen	829.028	829.028			829.028	
Methane	20327.5	20327.5			20327.5	
Ethane	5374.6	5374.6			5374.6	
Propane	4236.18	4236.18			4236.18	
Isobutane	780.317	780.317			780.317	
n-Butane	2006.95	2006.95			2006.95	
Isopentane	644.319	644.319			644.319	
n-Pentane	786.297	786.297			786.297	
Cyclopentane	0	0			0	
n-Hexane	309.761	309.761			309.761	
Cyclohexane	117.575	117.575			117.575	
i-C6	447.112	447.112			447.112	
iC7	452.213	452.213			452.213	
Methylcyclohexane	101.146	101.146			101.146	
2,2,4-Trimethylpentane	0	0			0	
Benzene	66.9911	66.9911			66.9911	
Toluene	48.6623	48.6623			48.6623	
Ethylbenzene	2.96974	2.96974			2.96974	
o-Xylene	7.88192	7.88192			7.88192	
Octane	111.044	111.044			111.044	
Triethylene Glycol	1.27619E-08	1.27619E-08			1.27619E-08	
Water	103.271	103.271			103.271	
Stream Properties						
Property	Units	11	12	13	14	15
Temperature	°F	115 *	115	115		277 *
Molecular Weight	lb/lbmol	23.2651	23.2651			23.2651
Std Vapor Volumetric Flow	MMSCFD	16	16	0	0	16
Std Liquid Volumetric Flow	sgpm	213.672	213.672	0	0	213.672
Gross Ideal Gas Heating Value	Btu/ft ³	1231.79	1231.79			1231.79
Remarks						

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	3516s	

Connections

	16	17	18	19	20
From Block	FAXR-102	Discharge Filter	Discharge Filter	VLVE-103	MIX-100
To Block	Discharge Filter	MIX-102	VLVE-103	MIX-101	3516 LPS

Stream Composition

Mole Fraction	16 %	17 %	18 %	19 %	20 %
Carbon Dioxide	5.32589	5.3495	3.23731	3.23731	
Hydrogen Sulfide	0	0	0	0	
Nitrogen	1.68457	1.70034	0.28918	0.28918	
Methane	72.1269	72.6574	25.1863	25.1863	
Ethane	10.1745	10.1799	9.6944	9.6944	
Propane	5.46844	5.41654	10.0595	10.0595	
Isobutane	0.764212	0.747541	2.23909	2.23909	
n-Butane	1.96552	1.90671	7.16862	7.16862	
Isopentane	0.508343	0.482373	2.80593	2.80593	
n-Pentane	0.620358	0.582325	3.98517	3.98517	
Cyclopentane	0	0	0	0	
n-Hexane	0.204611	0.178962	2.4738	2.4738	
Cyclohexane	0.079524	0.06802	1.0973	1.0973	
i-C6	0.295337	0.264415	3.03109	3.03109	
iC7	0.256893	0.211378	4.28368	4.28368	
Methylcyclohexane	0.0586387	0.0456932	1.20395	1.20395	
2,2,4-Trimethylpentane	0	0	0	0	
Benzene	0.0488186	0.042526	0.605532	0.605532	
Toluene	0.0300633	0.0232027	0.637033	0.637033	
Ethylbenzene	0.00159229	0.00103841	0.0505948	0.0505948	
o-Xylene	0.00422606	0.00262363	0.145996	0.145996	
Octane	0.0553359	0.0373233	1.64893	1.64893	
Triethylene Glycol	4.83737E-12	1.32088E-15	4.3269E-10	4.3269E-10	
Water	0.326304	0.10216	20.1566	20.1566	

Mass Fraction	16 %	17 %	18 %	19 %	20 %
Carbon Dioxide	10.0747	10.2083	3.45891	3.45891	
Hydrogen Sulfide	0	0	0	0	
Nitrogen	2.02838	2.06536	0.196672	0.196672	
Methane	49.7351	50.5411	9.80943	9.80943	
Ethane	13.15	13.2726	7.077	7.077	
Propane	10.3646	10.3565	10.7691	10.7691	
Isobutane	1.9092	1.88396	3.15953	3.15953	
n-Butane	4.91038	4.8053	10.1155	10.1155	
Isopentane	1.57645	1.50906	4.9149	4.9149	
n-Pentane	1.92383	1.82175	6.98047	6.98047	
Cyclopentane	0	0	0	0	
n-Hexane	0.75789	0.668709	5.17554	5.17554	
Cyclohexane	0.287671	0.248218	2.24201	2.24201	
i-C6	1.09395	0.988013	6.34149	6.34149	
iC7	1.10643	0.918393	10.4208	10.4208	
Methylcyclohexane	0.247474	0.194534	2.8699	2.8699	
2,2,4-Trimethylpentane	0	0	0	0	
Benzene	0.163907	0.144034	1.14832	1.14832	
Toluene	0.119062	0.0926985	1.42499	1.42499	
Ethylbenzene	0.00726605	0.00478018	0.130406	0.130406	
o-Xylene	0.0192847	0.0120775	0.376296	0.376296	
Octane	0.271692	0.184862	4.57284	4.57284	
Triethylene Glycol	3.12245E-11	8.601E-15	1.57753E-09	1.57753E-09	
Water	0.252672	0.079802	8.81593	8.81593	

* User Specified Values

? Extrapolated or Approximate Values

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Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	3516s	

Mass Flow	16 lb/h	17 lb/h	18 lb/h	19 lb/h	20 lb/h
Carbon Dioxide	4117.7	4089.72	27.9744	27.9744	
Hydrogen Sulfide	0	0	0	0	
Nitrogen	829.028	827.437	1.59061	1.59061	
Methane	20327.5	20248.1	79.3352	79.3352	
Ethane	5374.6	5317.37	57.2363	57.2363	
Propane	4236.18	4149.08	87.0965	87.0965	
Isobutane	780.317	754.764	25.5532	25.5532	
n-Butane	2006.95	1925.13	81.8104	81.8104	
Isopentane	644.319	604.569	39.75	39.75	
n-Pentane	786.297	729.841	56.4555	56.4555	
Cyclopentane	0	0	0	0	
n-Hexane	309.761	267.903	41.8579	41.8579	
Cyclohexane	117.575	99.4429	18.1326	18.1326	
i-C6	447.112	395.825	51.2877	51.2877	
iC7	452.213	367.933	84.2799	84.2799	
Methylcyclohexane	101.146	77.9355	23.2108	23.2108	
2,2,4-Trimethylpentane	0	0	0	0	
Benzene	66.9911	57.7039	9.28719	9.28719	
Toluene	48.6623	37.1375	11.5248	11.5248	
Ethylbenzene	2.96974	1.91507	1.05467	1.05467	
o-Xylene	7.88192	4.83857	3.04335	3.04335	
Octane	111.044	74.0609	36.9835	36.9835	
Triethylene Glycol	1.27619E-08	3.44579E-12	1.27585E-08	1.27585E-08	
Water	103.271	31.9708	71.3001	71.3001	

Stream Properties

Property	Units	16	17	18	19	20
Temperature	°F	100 *	100	100	35.4191	
Molecular Weight	lb/lbmol	23.2651	23.0625	41.19	41.19	
Std Vapor Volumetric Flow	MMSCFD	16	15.8212	0.178828	0.178828	0
Std Liquid Volumetric Flow	sgpm	213.672	210.791	2.881	2.881	0
Gross Ideal Gas Heating Value	Btu/ft ³	1231.79	1222.66	2039.37	2039.37	

Warnings

ProMax:ProMax!Project!Flowsheets!3516s!PStreams!19

Warning: The temperature of 35.4191 °F is within 10 °F of ice formation.

Warning: The temperature of 35.4191 °F is within 10 °F of hydrate formation.

Remarks

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	3516s	

Connections

	21	22	23	24	26
From Block	MIX-101	SPLT-100	SPLT-100	GAS TO COMPRESSIO N	MIX-102
To Block	3516 HP DUMPS	GAS TO DEHY1	GAS TO DEHY2	SPLT-101	SPLT-100

Stream Composition

Mole Fraction	21 %	22 %	23 %	24 %	26 %
Carbon Dioxide	3.23731	5.35026	5.35026	5.32589	5.35026
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	0.28918	1.69693	1.69693	1.68457	1.69693
Methane	25.1863	72.5794	72.5794	72.1269	72.5794
Ethane	9.6944	10.1962	10.1962	10.1745	10.1962
Propane	10.0595	5.4424	5.4424	5.46844	5.4424
Isobutane	2.23909	0.753287	0.753287	0.764212	0.753287
n-Butane	7.16862	1.92456	1.92456	1.96552	1.92456
Isopentane	2.80593	0.487946	0.487946	0.508343	0.487946
n-Pentane	3.98517	0.58966	0.58966	0.620358	0.58966
Cyclopentane	0	0	0	0	0
n-Hexane	2.4738	0.180908	0.180908	0.204611	0.180908
Cyclohexane	1.0973	0.068626	0.068626	0.079524	0.068626
i-C6	3.03109	0.26774	0.26774	0.295337	0.26774
iC7	4.28368	0.211012	0.211012	0.256893	0.211012
Methylcyclohexane	1.20395	0.0451749	0.0451749	0.0586387	0.0451749
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.605532	0.0430116	0.0430116	0.0488186	0.0430116
Toluene	0.637033	0.0229132	0.0229132	0.0300633	0.0229132
Ethylbenzene	0.0505948	0.000957411	0.000957411	0.00159229	0.000957411
o-Xylene	0.145996	0.00236785	0.00236785	0.00422606	0.00236785
Octane	1.64893	0.0344844	0.0344844	0.0553359	0.0344844
Triethylene Glycol	4.3269E-10	9.6781E-17	9.6781E-17	4.83737E-12	9.6781E-17
Water	20.1566	0.102144	0.102144	0.326304	0.102144

Mass Fraction	21 %	22 %	23 %	24 %	26 %
Carbon Dioxide	3.45891	10.1979	10.1979	10.0747	10.1979
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	0.196672	2.05882	2.05882	2.02838	2.05882
Methane	9.80943	50.428	50.428	49.7351	50.428
Ethane	7.077	13.2785	13.2785	13.15	13.2785
Propane	10.7691	10.3938	10.3938	10.3646	10.3938
Isobutane	3.15953	1.89623	1.89623	1.9092	1.89623
n-Butane	10.1155	4.84464	4.84464	4.91038	4.84464
Isopentane	4.9149	1.52471	1.52471	1.57645	1.52471
n-Pentane	6.98047	1.84255	1.84255	1.92383	1.84255
Cyclopentane	0	0	0	0	0
n-Hexane	5.17554	0.675194	0.675194	0.75789	0.675194
Cyclohexane	2.24201	0.250138	0.250138	0.287671	0.250138
i-C6	6.34149	0.999272	0.999272	1.09395	0.999272
iC7	10.4208	0.915735	0.915735	1.10643	0.915735
Methylcyclohexane	2.8699	0.192103	0.192103	0.247474	0.192103
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	1.14832	0.145509	0.145509	0.163907	0.145509
Toluene	1.42499	0.0914354	0.0914354	0.119062	0.0914354
Ethylbenzene	0.130406	0.00440218	0.00440218	0.00726605	0.00440218
o-Xylene	0.376296	0.0108874	0.0108874	0.0192847	0.0108874
Octane	4.57284	0.170602	0.170602	0.271692	0.170602
Triethylene Glycol	1.57753E-09	6.29462E-16	6.29462E-16	3.12245E-11	6.29462E-16
Water	8.81593	0.0796972	0.0796972	0.252672	0.0796972

* User Specified Values

? Extrapolated or Approximate Values

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Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	3516s	

Mass Flow	21 lb/h	22 lb/h	23 lb/h	24 lb/h	26 lb/h
Carbon Dioxide	27.9744	18775.2	18775.2	57101.8	56894.4
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	1.59061	3790.47	3790.47	11496.5	11486.3
Methane	79.3352	92842.4	92842.4	281889	281341
Ethane	57.2363	24446.8	24446.8	74531.8	74081.3
Propane	87.0965	19135.9	19135.9	58744.8	57987.5
Isobutane	25.5532	3491.12	3491.12	10821	10579.2
n-Butane	81.8104	8919.42	8919.42	27831.1	27028.6
Isopentane	39.75	2807.13	2807.13	8935.04	8506.47
n-Pentane	56.4555	3392.29	3392.29	10903.9	10279.7
Cyclopentane	0	0	0	0	0
n-Hexane	41.8579	1243.09	1243.09	4295.58	3766.94
Cyclohexane	18.1326	460.526	460.526	1630.47	1395.53
i-C6	51.2877	1839.75	1839.75	6200.29	5575
iC7	84.2799	1685.95	1685.95	6271.02	5108.94
Methylcyclohexane	23.2108	353.679	353.679	1402.64	1071.76
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	9.28719	267.895	267.895	928.993	811.803
Toluene	11.5248	168.341	168.341	674.821	510.123
Ethylbenzene	1.05467	8.1048	8.1048	41.1827	24.56
o-Xylene	3.04335	20.0446	20.0446	109.302	60.7413
Octane	36.9835	314.094	314.094	1539.9	951.799
Triethylene Glycol	1.27585E-08	1.1589E-12	1.1589E-12	1.76975E-07	3.5118E-12
Water	71.3001	146.73	146.73	1432.1	444.635

Stream Properties

Property	Units	21	22	23	24	26
Temperature	°F	35.4191	100	100	54.84	100
Molecular Weight	lb/lbmol	41.19	23.0894	23.0894	23.2651	23.0894
Std Vapor Volumetric Flow	MMSCFD	0.178828	72.6218	72.6218	221.879	220.066
Std Liquid Volumetric Flow	sgpm	2.881	968.105	968.105	2963.08	2933.65
Gross Ideal Gas Heating Value	Btu/ft ³	2039.37	1224.14	1224.14	1231.79	1224.14

Warnings

ProMax:ProMax!Project!Flowsheets!3516s!PStreams!21

Warning: The temperature of 35.4191 °F is within 10 °F of ice formation.

Warning: The temperature of 35.4191 °F is within 10 °F of hydrate formation.

Remarks

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	3516s	

Connections

	27	28	3516 INLET	3616 INLET	
From Block	3616 DISCHARGE	SPLT-100	SPLT-101	SPLT-101	
To Block	MIX-102	GAS TO DEHY3	1st Stage Scrubber	3616 COMP	

Stream Composition

Mole Fraction	27 %	28 %	3516 INLET %	3616 INLET %	
Carbon Dioxide	5.35032	5.35026	5.32589	5.32589	
Hydrogen Sulfide	0	0	0	0	
Nitrogen	1.69667	1.69693	1.68457	1.68457	
Methane	72.5733	72.5794	72.1269	72.1269	
Ethane	10.1975	10.1962	10.1745	10.1745	
Propane	5.44441	5.4424	5.46844	5.46844	
Isobutane	0.753732	0.753287	0.764212	0.764212	
n-Butane	1.92595	1.92456	1.96552	1.96552	
Isopentane	0.488378	0.487946	0.508343	0.508343	
n-Pentane	0.590229	0.58966	0.620358	0.620358	
Cyclopentane	0	0	0	0	
n-Hexane	0.181059	0.180908	0.204611	0.204611	
Cyclohexane	0.0686729	0.068626	0.079524	0.079524	
i-C6	0.267998	0.26774	0.295337	0.295337	
iC7	0.210983	0.211012	0.256893	0.256893	
Methylcyclohexane	0.0451348	0.0451749	0.0586387	0.0586387	
2,2,4-Trimethylpentane	0	0	0	0	
Benzene	0.0430492	0.0430116	0.0488186	0.0488186	
Toluene	0.0228908	0.0229132	0.0300633	0.0300633	
Ethylbenzene	0.000951137	0.000957411	0.00159229	0.00159229	
o-Xylene	0.00234804	0.00236785	0.00422606	0.00422606	
Octane	0.0342645	0.0344844	0.0553359	0.0553359	
Triethylene Glycol	1.96012E-18	9.6781E-17	4.83737E-12	4.83737E-12	
Water	0.102143	0.102144	0.326304	0.326304	

Mass Fraction	27 %	28 %	3516 INLET %	3616 INLET %	
Carbon Dioxide	10.197	10.1979	10.0747	10.0747	
Hydrogen Sulfide	0	0	0	0	
Nitrogen	2.05831	2.05882	2.02838	2.02838	
Methane	50.4192	50.428	49.7351	49.7351	
Ethane	13.2789	13.2785	13.15	13.15	
Propane	10.3967	10.3938	10.3646	10.3646	
Isobutane	1.89718	1.89623	1.9092	1.9092	
n-Butane	4.84769	4.84464	4.91038	4.91038	
Isopentane	1.52593	1.52471	1.57645	1.57645	
n-Pentane	1.84416	1.84255	1.92383	1.92383	
Cyclopentane	0	0	0	0	
n-Hexane	0.675695	0.675194	0.75789	0.75789	
Cyclohexane	0.250286	0.250138	0.287671	0.287671	
i-C6	1.00014	0.999272	1.09395	1.09395	
iC7	0.91553	0.915735	1.10643	1.10643	
Methylcyclohexane	0.191915	0.192103	0.247474	0.247474	
2,2,4-Trimethylpentane	0	0	0	0	
Benzene	0.145623	0.145509	0.163907	0.163907	
Toluene	0.0913377	0.0914354	0.119062	0.119062	
Ethylbenzene	0.00437293	0.00440218	0.00726605	0.00726605	
o-Xylene	0.0107953	0.0108874	0.0192847	0.0192847	
Octane	0.169499	0.170602	0.271692	0.271692	
Triethylene Glycol	1.27474E-17	6.29462E-16	3.12245E-11	3.12245E-11	
Water	0.0796891	0.0796972	0.252672	0.252672	

* User Specified Values

? Extrapolated or Approximate Values

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Process Streams Report All Streams

Tabulated by Total Phase

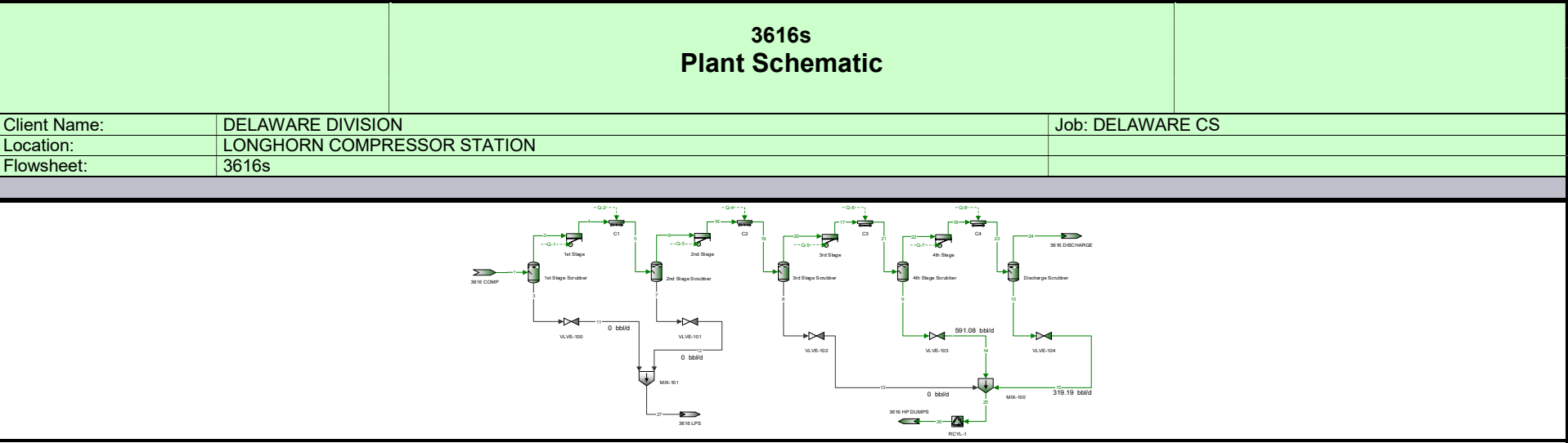
Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	3516s	

Mass Flow	27 lb/h	28 lb/h	3516 INLET lb/h	3616 INLET lb/h	
Carbon Dioxide	52804.7	18775.2	4117.7	52984.1	
Hydrogen Sulfide	0	0	0	0	
Nitrogen	10658.8	3790.47	829.028	10667.4	
Methane	261093	92842.4	20327.5	261562	
Ethane	68763.9	24446.8	5374.6	69157.2	
Propane	53838.5	19135.9	4236.18	54508.6	
Isobutane	9824.4	3491.12	780.317	10040.7	
n-Butane	25103.4	8919.42	2006.95	25824.2	
Isopentane	7901.9	2807.13	644.319	8290.72	
n-Pentane	9549.84	3392.29	786.297	10117.6	
Cyclopentane	0	0	0	0	
n-Hexane	3499.04	1243.09	309.761	3985.82	
Cyclohexane	1296.09	460.526	117.575	1512.89	
i-C6	5179.18	1839.75	447.112	5753.18	
iC7	4741.01	1685.95	452.213	5818.81	
Methylcyclohexane	993.82	353.679	101.146	1301.49	
2,2,4-Trimethylpentane	0	0	0	0	
Benzene	754.099	267.895	66.9911	862.002	
Toluene	472.986	168.341	48.6623	626.158	
Ethylbenzene	22.6449	8.1048	2.96974	38.2129	
o-Xylene	55.9027	20.0446	7.88192	101.42	
Octane	877.739	314.094	111.044	1428.85	
Triethylene Glycol	6.60116E-14	1.1589E-12	1.27619E-08	1.64213E-07	
Water	412.664	146.73	103.271	1328.83	

Stream Properties

Property	Units	27	28	3516 INLET	3616 INLET	
Temperature	°F	100	100	54.84	54.84	
Molecular Weight	lb/lbmol	23.0915	23.0894	23.2651	23.2651	
Std Vapor Volumetric Flow	MMSCFD	204.245	72.6218	16 *	205.879	
Std Liquid Volumetric Flow	sgpm	2722.86	968.105	213.672	2749.41	
Gross Ideal Gas Heating Value	Btu/ft ³	1224.25	1224.14	1231.79	1231.79	

Remarks



Process Streams Report

All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	3616s	

Connections

	1	2	3	4	5
From Block	3616 COMP	1st Stage Scrubber	1st Stage Scrubber	1st Stage	C1
To Block	1st Stage Scrubber	1st Stage	VLVE-100	C1	2nd Stage Scrubber

Stream Composition

Mole Fraction	1 %	2 %	3 %	4 %	5 %
Carbon Dioxide	5.32589	5.32589		5.32589	5.32589
Hydrogen Sulfide	0	0		0	0
Nitrogen	1.68457	1.68457		1.68457	1.68457
Methane	72.1269	72.1269		72.1269	72.1269
Ethane	10.1745	10.1745		10.1745	10.1745
Propane	5.46844	5.46844		5.46844	5.46844
Isobutane	0.764212	0.764212		0.764212	0.764212
n-Butane	1.96552	1.96552		1.96552	1.96552
Isopentane	0.508343	0.508343		0.508343	0.508343
n-Pentane	0.620358	0.620358		0.620358	0.620358
Cyclopentane	0	0		0	0
n-Hexane	0.204611	0.204611		0.204611	0.204611
Cyclohexane	0.079524	0.079524		0.079524	0.079524
i-C6	0.295337	0.295337		0.295337	0.295337
iC7	0.256893	0.256893		0.256893	0.256893
Methylcyclohexane	0.0586387	0.0586387		0.0586387	0.0586387
2,2,4-Trimethylpentane	0	0		0	0
Benzene	0.0488186	0.0488186		0.0488186	0.0488186
Toluene	0.0300633	0.0300633		0.0300633	0.0300633
Ethylbenzene	0.00159229	0.00159229		0.00159229	0.00159229
o-Xylene	0.00422606	0.00422606		0.00422606	0.00422606
Octane	0.0553359	0.0553359		0.0553359	0.0553359
Triethylene Glycol	4.83737E-12	4.83737E-12		4.83737E-12	4.83737E-12
Water	0.326304	0.326304		0.326304	0.326304

Mass Fraction	1 %	2 %	3 %	4 %	5 %
Carbon Dioxide	10.0747	10.0747		10.0747	10.0747
Hydrogen Sulfide	0	0		0	0
Nitrogen	2.02838	2.02838		2.02838	2.02838
Methane	49.7351	49.7351		49.7351	49.7351
Ethane	13.15	13.15		13.15	13.15
Propane	10.3646	10.3646		10.3646	10.3646
Isobutane	1.9092	1.9092		1.9092	1.9092
n-Butane	4.91038	4.91038		4.91038	4.91038
Isopentane	1.57645	1.57645		1.57645	1.57645
n-Pentane	1.92383	1.92383		1.92383	1.92383
Cyclopentane	0	0		0	0
n-Hexane	0.75789	0.75789		0.75789	0.75789
Cyclohexane	0.287671	0.287671		0.287671	0.287671
i-C6	1.09395	1.09395		1.09395	1.09395
iC7	1.10643	1.10643		1.10643	1.10643
Methylcyclohexane	0.247474	0.247474		0.247474	0.247474
2,2,4-Trimethylpentane	0	0		0	0
Benzene	0.163907	0.163907		0.163907	0.163907
Toluene	0.119062	0.119062		0.119062	0.119062
Ethylbenzene	0.00726605	0.00726605		0.00726605	0.00726605
o-Xylene	0.0192847	0.0192847		0.0192847	0.0192847
Octane	0.271692	0.271692		0.271692	0.271692
Triethylene Glycol	3.12245E-11	3.12245E-11		3.12245E-11	3.12245E-11
Water	0.252672	0.252672		0.252672	0.252672

* User Specified Values

? Extrapolated or Approximate Values

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		Process Streams Report All Streams Tabulated by Total Phase				
Client Name:	DELAWARE DIVISION				Job: DELAWARE CS	
Location:	LONGHORN COMPRESSOR STATION					
Flowsheet:	3616s					
Mass Flow	1 lb/h	2 lb/h	3 lb/h	4 lb/h	5 lb/h	
Carbon Dioxide	52984.1	52984.1		52984.1	52984.1	
Hydrogen Sulfide	0	0		0	0	
Nitrogen	10667.4	10667.4		10667.4	10667.4	
Methane	261562	261562		261562	261562	
Ethane	69157.2	69157.2		69157.2	69157.2	
Propane	54508.6	54508.6		54508.6	54508.6	
Isobutane	10040.7	10040.7		10040.7	10040.7	
n-Butane	25824.2	25824.2		25824.2	25824.2	
Isopentane	8290.72	8290.72		8290.72	8290.72	
n-Pentane	10117.6	10117.6		10117.6	10117.6	
Cyclopentane	0	0		0	0	
n-Hexane	3985.82	3985.82		3985.82	3985.82	
Cyclohexane	1512.89	1512.89		1512.89	1512.89	
i-C6	5753.18	5753.18		5753.18	5753.18	
iC7	5818.81	5818.81		5818.81	5818.81	
Methylcyclohexane	1301.49	1301.49		1301.49	1301.49	
2,2,4-Trimethylpentane	0	0		0	0	
Benzene	862.002	862.002		862.002	862.002	
Toluene	626.158	626.158		626.158	626.158	
Ethylbenzene	38.2129	38.2129		38.2129	38.2129	
o-Xylene	101.42	101.42		101.42	101.42	
Octane	1428.85	1428.85		1428.85	1428.85	
Triethylene Glycol	1.64213E-07	1.64213E-07		1.64213E-07	1.64213E-07	
Water	1328.83	1328.83		1328.83	1328.83	
Stream Properties						
Property	Units	1	2	3	4	5
Temperature	°F	54.84	54.84		228 *	115 *
Molecular Weight	lb/lbmol	23.2651	23.2651		23.2651	23.2651
Std Vapor Volumetric Flow	MMSCFD	205.879	205.879	0	205.879	205.879
Std Liquid Volumetric Flow	sgpm	2749.41	2749.41	0	2749.41	2749.41
Gross Ideal Gas Heating Value	Btu/ft^3	1231.79	1231.79		1231.79	1231.79
Remarks						

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	3616s	

Connections

	6	7	8	9	10
From Block	2nd Stage Scrubber	2nd Stage Scrubber	3rd Stage Scrubber	4th Stage Scrubber	Discharge Scrubber
To Block	2nd Stage	VLVE-101	VLVE-102	VLVE-103	VLVE-104

Stream Composition

Mole Fraction	6 %	7 %	8 %	9 %	10 %
Carbon Dioxide	5.32589			2.0475	2.58103
Hydrogen Sulfide	0			0	0
Nitrogen	1.68457			0.129016	0.229349
Methane	72.1269			13.6693	19.933
Ethane	10.1745			7.02083	7.66519
Propane	5.46844			8.84353	7.96348
Isobutane	0.764212			2.29209	1.77563
n-Butane	1.96552			7.80366	5.69178
Isopentane	0.508343			3.56872	2.22994
n-Pentane	0.620358			5.2753	3.16818
Cyclopentane	0			0	0
n-Hexane	0.204611			4.01583	1.9595
Cyclohexane	0.079524			1.85135	0.866263
i-C6	0.295337			4.66568	2.40634
iC7	0.256893			7.92856	3.34474
Methylcyclohexane	0.0586387			2.34275	0.929099
2,2,4-Trimethylpentane	0			0	0
Benzene	0.0488186			0.982148	0.479093
Toluene	0.0300633			1.24495	0.490074
Ethylbenzene	0.00159229			0.115011	0.036096
o-Xylene	0.00422606			0.339008	0.101772
Octane	0.0553359			3.7887	1.18123
Triethylene Glycol	4.83737E-12			1.05285E-09	1.17267E-12
Water	0.326304			22.076	36.9682

Mass Fraction	6 %	7 %	8 %	9 %	10 %
Carbon Dioxide	10.0747			1.75396	3.13909
Hydrogen Sulfide	0			0	0
Nitrogen	2.02838			0.0703492	0.177552
Methane	49.7351			4.26842	8.83707
Ethane	13.15			4.1092	6.36952
Propane	10.3646			7.59049	9.70426
Isobutane	1.9092			2.59312	2.85206
n-Butane	4.91038			8.82856	9.14227
Isopentane	1.57645			5.01176	4.44617
n-Pentane	1.92383			7.40842	6.31689
Cyclopentane	0			0	0
n-Hexane	0.75789			6.73609	4.66651
Cyclohexane	0.287671			3.03277	2.01473
i-C6	1.09395			7.82613	5.73066
iC7	1.10643			15.4639	9.26196
Methylcyclohexane	0.247474			4.47739	2.52102
2,2,4-Trimethylpentane	0			0	0
Benzene	0.163907			1.49329	1.03419
Toluene	0.119062			2.23275	1.24786
Ethylbenzene	0.00726605			0.237667	0.105902
o-Xylene	0.0192847			0.700552	0.298588
Octane	0.271692			8.42391	3.72884
Triethylene Glycol	3.12245E-11			3.07757E-09	4.86665E-12
Water	0.252672			7.74125	18.4049

* User Specified Values

? Extrapolated or Approximate Values

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Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	3616s	

Mass Flow	6 lb/h	7 lb/h	8 lb/h	9 lb/h	10 lb/h
Carbon Dioxide	52984.1			93.5118	85.8659
Hydrogen Sulfide	0			0	0
Nitrogen	10667.4			3.75064	4.85673
Methane	261562			227.57	241.727
Ethane	69157.2			219.081	174.23
Propane	54508.6			404.685	265.448
Isobutane	10040.7			138.251	78.0146
n-Butane	25824.2			470.692	250.076
Isopentane	8290.72			267.2	121.62
n-Pentane	10117.6			394.977	172.791
Cyclopentane	0			0	0
n-Hexane	3985.82			359.132	127.647
Cyclohexane	1512.89			161.691	55.1105
i-C6	5753.18			417.247	156.755
iC7	5818.81			824.454	253.35
Methylcyclohexane	1301.49			238.71	68.9594
2,2,4-Trimethylpentane	0			0	0
Benzene	862.002			79.614	28.289
Toluene	626.158			119.038	34.1338
Ethylbenzene	38.2129			12.6712	2.89682
o-Xylene	101.42			37.3497	8.16751
Octane	1428.85			449.118	101.998
Triethylene Glycol	1.64213E-07			1.6408E-07	1.33121E-10
Water	1328.83			412.722	503.443

Stream Properties

Property	Units	6	7	8	9	10
Temperature	°F	115	115	115	115	100
Molecular Weight	lb/lbmol	23.2651			51.3749	36.1856
Std Vapor Volumetric Flow	MMSCFD	205.879	0	0	0.945149	0.688472
Std Liquid Volumetric Flow	sgpm	2749.41	0	0	17.2398	9.3097
Gross Ideal Gas Heating Value	Btu/ft ³	1231.79			2582.04	1613.49

Remarks

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	3616s	

Connections

	11	12	13	14	15
From Block	VLVE-100	VLVE-101	VLVE-102	VLVE-103	VLVE-104
To Block	MIX-101	MIX-101	MIX-100	MIX-100	MIX-100

Stream Composition

Mole Fraction	11 %	12 %	13 %	14 %	15 %
Carbon Dioxide				2.0475	2.58103
Hydrogen Sulfide				0	0
Nitrogen				0.129016	0.229349
Methane				13.6693	19.933
Ethane				7.02083	7.66519
Propane				8.84353	7.96348
Isobutane				2.29209	1.77563
n-Butane				7.80366	5.69178
Isopentane				3.56872	2.22994
n-Pentane				5.2753	3.16818
Cyclopentane				0	0
n-Hexane				4.01583	1.9595
Cyclohexane				1.85135	0.866263
i-C6				4.66568	2.40634
iC7				7.92856	3.34474
Methylcyclohexane				2.34275	0.929099
2,2,4-Trimethylpentane				0	0
Benzene				0.982148	0.479093
Toluene				1.24495	0.490074
Ethylbenzene				0.115011	0.036096
o-Xylene				0.339008	0.101772
Octane				3.7887	1.18123
Triethylene Glycol				1.05285E-09	1.17267E-12
Water				22.076	36.9682

Mass Fraction	11 %	12 %	13 %	14 %	15 %
Carbon Dioxide				1.75396	3.13909
Hydrogen Sulfide				0	0
Nitrogen				0.0703492	0.177552
Methane				4.26842	8.83707
Ethane				4.1092	6.36952
Propane				7.59049	9.70426
Isobutane				2.59312	2.85206
n-Butane				8.82856	9.14227
Isopentane				5.01176	4.44617
n-Pentane				7.40842	6.31689
Cyclopentane				0	0
n-Hexane				6.73609	4.66651
Cyclohexane				3.03277	2.01473
i-C6				7.82613	5.73066
iC7				15.4639	9.26196
Methylcyclohexane				4.47739	2.52102
2,2,4-Trimethylpentane				0	0
Benzene				1.49329	1.03419
Toluene				2.23275	1.24786
Ethylbenzene				0.237667	0.105902
o-Xylene				0.700552	0.298588
Octane				8.42391	3.72884
Triethylene Glycol				3.07757E-09	4.86665E-12
Water				7.74125	18.4049

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	3616s	

Mass Flow	11 lb/h	12 lb/h	13 lb/h	14 lb/h	15 lb/h
Carbon Dioxide				93.5118	85.8659
Hydrogen Sulfide				0	0
Nitrogen				3.75064	4.85673
Methane				227.57	241.727
Ethane				219.081	174.23
Propane				404.685	265.448
Isobutane				138.251	78.0146
n-Butane				470.692	250.076
Isopentane				267.2	121.62
n-Pentane				394.977	172.791
Cyclopentane				0	0
n-Hexane				359.132	127.647
Cyclohexane				161.691	55.1105
i-C6				417.247	156.755
iC7				824.454	253.35
Methylcyclohexane				238.71	68.9594
2,2,4-Trimethylpentane				0	0
Benzene				79.614	28.289
Toluene				119.038	34.1338
Ethylbenzene				12.6712	2.89682
o-Xylene				37.3497	8.16751
Octane				449.118	101.998
Triethylene Glycol				1.6408E-07	1.33121E-10
Water				412.722	503.443

Stream Properties

Property	Units	11	12	13	14	15
Temperature	°F				74.9791	42.8468
Molecular Weight	lb/lbmol				51.3749	36.1856
Std Vapor Volumetric Flow	MMSCFD	0	0	0	0.945149	0.688472
Std Liquid Volumetric Flow	sgpm	0	0	0	17.2398	9.3097
Gross Ideal Gas Heating Value	Btu/ft ³				2582.04	1613.49

Warnings

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Warning: The temperature of 42.8468 °F is within 10 °F of hydrate formation.

Remarks

Process Streams Report All Streams Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	3616s	

Connections

	16	17	18	19	20
From Block	2nd Stage	3rd Stage	4th Stage	C2	3rd Stage Scrubber
To Block	C2	C3	C4	3rd Stage Scrubber	3rd Stage

Stream Composition

Mole Fraction	16 %	17 %	18 %	19 %	20 %
Carbon Dioxide	5.32589	5.32589	5.34101	5.32589	5.32589
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	1.68457	1.68457	1.69174	1.68457	1.68457
Methane	72.1269	72.1269	72.3965	72.1269	72.1269
Ethane	10.1745	10.1745	10.189	10.1745	10.1745
Propane	5.46844	5.46844	5.45287	5.46844	5.46844
Isobutane	0.764212	0.764212	0.757165	0.764212	0.764212
n-Butane	1.96552	1.96552	1.9386	1.96552	1.96552
Isopentane	0.508343	0.508343	0.494229	0.508343	0.508343
n-Pentane	0.620358	0.620358	0.598889	0.620358	0.620358
Cyclopentane	0	0	0	0	0
n-Hexane	0.204611	0.204611	0.187033	0.204611	0.204611
Cyclohexane	0.079524	0.079524	0.0713524	0.079524	0.079524
i-C6	0.295337	0.295337	0.275181	0.295337	0.295337
iC7	0.256893	0.256893	0.221511	0.256893	0.256893
Methylcyclohexane	0.0586387	0.0586387	0.0481044	0.0586387	0.0586387
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.0488186	0.0488186	0.0445141	0.0488186	0.0488186
Toluene	0.0300633	0.0300633	0.0244603	0.0300633	0.0300633
Ethylbenzene	0.00159229	0.00159229	0.00106921	0.00159229	0.00159229
o-Xylene	0.00422606	0.00422606	0.00268205	0.00422606	0.00422606
Octane	0.0553359	0.0553359	0.0381177	0.0553359	0.0553359
Triethylene Glycol	4.83737E-12	4.83737E-12	3.94151E-15	4.83737E-12	4.83737E-12
Water	0.326304	0.326304	0.225994	0.326304	0.326304

Mass Fraction	16 %	17 %	18 %	19 %	20 %
Carbon Dioxide	10.0747	10.0747	10.16	10.0747	10.0747
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	2.02838	2.02838	2.04843	2.02838	2.02838
Methane	49.7351	49.7351	50.2007	49.7351	49.7351
Ethane	13.15	13.15	13.2426	13.15	13.15
Propane	10.3646	10.3646	10.393	10.3646	10.3646
Isobutane	1.9092	1.9092	1.90219	1.9092	1.9092
n-Butane	4.91038	4.91038	4.87025	4.91038	4.91038
Isopentane	1.57645	1.57645	1.54127	1.57645	1.57645
n-Pentane	1.92383	1.92383	1.86766	1.92383	1.92383
Cyclopentane	0	0	0	0	0
n-Hexane	0.75789	0.75789	0.696665	0.75789	0.75789
Cyclohexane	0.287671	0.287671	0.259558	0.287671	0.287671
i-C6	1.09395	1.09395	1.025	1.09395	1.09395
iC7	1.10643	1.10643	0.959386	1.10643	1.10643
Methylcyclohexane	0.247474	0.247474	0.204153	0.247474	0.247474
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.163907	0.163907	0.150292	0.163907	0.163907
Toluene	0.119062	0.119062	0.0974146	0.119062	0.119062
Ethylbenzene	0.00726605	0.00726605	0.00490642	0.00726605	0.00726605
o-Xylene	0.0192847	0.0192847	0.0123075	0.0192847	0.0192847
Octane	0.271692	0.271692	0.188201	0.271692	0.271692
Triethylene Glycol	3.12245E-11	3.12245E-11	2.55845E-14	3.12245E-11	3.12245E-11
Water	0.252672	0.252672	0.175979	0.252672	0.252672

* User Specified Values

? Extrapolated or Approximate Values

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Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	3616s	

Mass Flow	16 lb/h	17 lb/h	18 lb/h	19 lb/h	20 lb/h
Carbon Dioxide	52984.1	52984.1	52890.6	52984.1	52984.1
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	10667.4	10667.4	10663.7	10667.4	10667.4
Methane	261562	261562	261334	261562	261562
Ethane	69157.2	69157.2	68938.1	69157.2	69157.2
Propane	54508.6	54508.6	54103.9	54508.6	54508.6
Isobutane	10040.7	10040.7	9902.41	10040.7	10040.7
n-Butane	25824.2	25824.2	25353.5	25824.2	25824.2
Isopentane	8290.72	8290.72	8023.52	8290.72	8290.72
n-Pentane	10117.6	10117.6	9722.63	10117.6	10117.6
Cyclopentane	0	0	0	0	0
n-Hexane	3985.82	3985.82	3626.69	3985.82	3985.82
Cyclohexane	1512.89	1512.89	1351.2	1512.89	1512.89
i-C6	5753.18	5753.18	5335.93	5753.18	5753.18
iC7	5818.81	5818.81	4994.36	5818.81	5818.81
Methylcyclohexane	1301.49	1301.49	1062.78	1301.49	1301.49
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	862.002	862.002	782.388	862.002	862.002
Toluene	626.158	626.158	507.12	626.158	626.158
Ethylbenzene	38.2129	38.2129	25.5418	38.2129	38.2129
o-Xylene	101.42	101.42	64.0702	101.42	101.42
Octane	1428.85	1428.85	979.736	1428.85	1428.85
Triethylene Glycol	1.64213E-07	1.64213E-07	1.33187E-10	1.64213E-07	1.64213E-07
Water	1328.83	1328.83	916.107	1328.83	1328.83

Stream Properties

Property	Units	16	17	18	19	20
Temperature	°F	257 *	232 *	210 *	115 *	115
Molecular Weight	lb/lbmol	23.2651	23.2651	23.1355	23.2651	23.2651
Std Vapor Volumetric Flow	MMSCFD	205.879	205.879	204.933	205.879	205.879
Std Liquid Volumetric Flow	sgpm	2749.41	2749.41	2732.17	2749.41	2749.41
Gross Ideal Gas Heating Value	Btu/ft ³	1231.79	1231.79	1225.56	1231.79	1231.79

Remarks

Process Streams Report All Streams Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	3616s	

Connections

	21	22	23	24	25
From Block	C3	4th Stage Scrubber	C4	Discharge Scrubber	MIX-100
To Block	4th Stage Scrubber	4th Stage	Discharge Scrubber	3616 DISCHARGE	RCYL-1

Stream Composition

Mole Fraction	21 %	22 %	23 %	24 %	25 %
Carbon Dioxide	5.32589	5.34101	5.34101	5.35032	2.27235
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	1.68457	1.69174	1.69174	1.69667	0.1713
Methane	72.1269	72.3965	72.3965	72.5733	16.3091
Ethane	10.1745	10.189	10.189	10.1975	7.29239
Propane	5.46844	5.45287	5.45287	5.44441	8.47264
Isobutane	0.764212	0.757165	0.757165	0.753732	2.07443
n-Butane	1.96552	1.9386	1.9386	1.92595	6.91364
Isopentane	0.508343	0.494229	0.494229	0.488378	3.0045
n-Pentane	0.620358	0.598889	0.598889	0.590229	4.38728
Cyclopentane	0	0	0	0	0
n-Hexane	0.204611	0.187033	0.187033	0.181059	3.14922
Cyclohexane	0.079524	0.0713524	0.0713524	0.0686729	1.43619
i-C6	0.295337	0.275181	0.275181	0.267998	3.71351
iC7	0.256893	0.221511	0.221511	0.210983	5.99676
Methylcyclohexane	0.0586387	0.0481044	0.0481044	0.0451348	1.74698
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.0488186	0.0445141	0.0445141	0.0430492	0.770141
Toluene	0.0300633	0.0244603	0.0244603	0.0228908	0.926814
Ethylbenzene	0.00159229	0.00106921	0.00106921	0.000951137	0.0817531
o-Xylene	0.00422606	0.00268205	0.00268205	0.00234804	0.239027
Octane	0.0553359	0.0381177	0.0381177	0.0342645	2.68981
Triethylene Glycol	4.83737E-12	3.94151E-15	3.94151E-15	1.96012E-18	6.09634E-10
Water	0.326304	0.225994	0.225994	0.102143	28.3522

Mass Fraction	21 %	22 %	23 %	24 %	25 %
Carbon Dioxide	10.0747	10.16	10.16	10.197	2.22364
Hydrogen Sulfide	0	0	0	0	0
Nitrogen	2.02838	2.04843	2.04843	2.05831	0.106701
Methane	49.7351	50.2007	50.2007	50.4192	5.8176
Ethane	13.15	13.2426	13.2426	13.2789	4.87565
Propane	10.3646	10.393	10.393	10.3967	8.30725
Isobutane	1.9092	1.90219	1.90219	1.89718	2.68092
n-Butane	4.91038	4.87025	4.87025	4.84769	8.93494
Isopentane	1.57645	1.54127	1.54127	1.52593	4.81997
n-Pentane	1.92383	1.86766	1.86766	1.84416	7.03829
Cyclopentane	0	0	0	0	0
n-Hexane	0.75789	0.696665	0.696665	0.675695	6.03432
Cyclohexane	0.287671	0.259558	0.259558	0.250286	2.68756
i-C6	1.09395	1.025	1.025	1.00014	7.11558
iC7	1.10643	0.959386	0.959386	0.91553	13.3609
Methylcyclohexane	0.247474	0.204153	0.204153	0.191915	3.814
2,2,4-Trimethylpentane	0	0	0	0	0
Benzene	0.163907	0.150292	0.150292	0.145623	1.33761
Toluene	0.119062	0.0974146	0.0974146	0.0913377	1.89879
Ethylbenzene	0.00726605	0.00490642	0.00490642	0.00437293	0.192987
o-Xylene	0.0192847	0.0123075	0.0123075	0.0107953	0.56425
Octane	0.271692	0.188201	0.188201	0.169499	6.83186
Triethylene Glycol	3.12245E-11	2.55845E-14	2.55845E-14	1.27474E-17	2.03565E-09
Water	0.252672	0.175979	0.175979	0.0796891	11.3572

* User Specified Values

? Extrapolated or Approximate Values

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		Process Streams Report All Streams Tabulated by Total Phase				
Client Name:	DELAWARE DIVISION			Job: DELAWARE CS		
Location:	LONGHORN COMPRESSOR STATION					
Flowsheet:	3616s					
Mass Flow	21 lb/h	22 lb/h	23 lb/h	24 lb/h	25 lb/h	
Carbon Dioxide	52984.1	52890.6	52890.6	52804.7	179.378	
Hydrogen Sulfide	0	0	0	0	0	
Nitrogen	10667.4	10663.7	10663.7	10658.8	8.60738	
Methane	261562	261334	261334	261093	469.297	
Ethane	69157.2	68938.1	68938.1	68763.9	393.311	
Propane	54508.6	54103.9	54103.9	53838.5	670.133	
Isobutane	10040.7	9902.41	9902.41	9824.4	216.266	
n-Butane	25824.2	25353.5	25353.5	25103.4	720.767	
Isopentane	8290.72	8023.52	8023.52	7901.9	388.82	
n-Pentane	10117.6	9722.63	9722.63	9549.84	567.768	
Cyclopentane	0	0	0	0	0	
n-Hexane	3985.82	3626.69	3626.69	3499.04	486.779	
Cyclohexane	1512.89	1351.2	1351.2	1296.09	216.802	
i-C6	5753.18	5335.93	5335.93	5179.18	574.003	
iC7	5818.81	4994.36	4994.36	4741.01	1077.8	
Methylcyclohexane	1301.49	1062.78	1062.78	993.82	307.67	
2,2,4-Trimethylpentane	0	0	0	0	0	
Benzene	862.002	782.388	782.388	754.099	107.903	
Toluene	626.158	507.12	507.12	472.986	153.172	
Ethylbenzene	38.2129	25.5418	25.5418	22.6449	15.568	
o-Xylene	101.42	64.0702	64.0702	55.9027	45.5172	
Octane	1428.85	979.736	979.736	877.739	551.116	
Triethylene Glycol	1.64213E-07	1.33187E-10	1.33187E-10	6.60116E-14	1.64213E-07	
Water	1328.83	916.107	916.107	412.664	916.165	
Stream Properties						
Property	Units	21	22	23	24	25
Temperature	°F	115 *	115	100 *	100	63.2069
Molecular Weight	lb/lbmol	23.2651	23.1355	23.1355	23.0915	44.9735
Std Vapor Volumetric Flow	MMSCFD	205.879	204.933	204.933	204.245	1.63362
Std Liquid Volumetric Flow	sgpm	2749.41	2732.17	2732.17	2722.86	26.5495
Gross Ideal Gas Heating Value	Btu/ft^3	1231.79	1225.56	1225.56	1224.25	2173.85
Remarks						

Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	
Flowsheet:	3616s	

Connections

	26	27			
From Block	RCYL-1	MIX-101			
To Block	3616 HP DUMPS	3616 LPS			

Stream Composition

Mole Fraction	26 %	27 %			
Carbon Dioxide	2.27215				
Hydrogen Sulfide	0				
Nitrogen	0.171283				
Methane	16.3076				
Ethane	7.29176				
Propane	8.47192				
Isobutane	2.07425				
n-Butane	6.913				
Isopentane	3.00421				
n-Pentane	4.38684				
Cyclopentane	0				
n-Hexane	3.1489				
Cyclohexane	1.43605				
i-C6	3.71311				
iC7	5.99635				
Methylcyclohexane	1.74691				
2,2,4-Trimethylpentane	0				
Benzene	0.770061				
Toluene	0.926827				
Ethylbenzene	0.0817712				
o-Xylene	0.239093				
Octane	2.69032				
Triethylene Glycol	6.11039E-10				
Water	28.3576				

Mass Fraction	26 %	27 %			
Carbon Dioxide	2.22351				
Hydrogen Sulfide	0				
Nitrogen	0.106693				
Methane	5.81725				
Ethane	4.87539				
Propane	8.30681				
Isobutane	2.68077				
n-Butane	8.9344				
Isopentane	4.81966				
n-Pentane	7.03782				
Cyclopentane	0				
n-Hexane	6.03391				
Cyclohexane	2.68738				
i-C6	7.11504				
iC7	13.3604				
Methylcyclohexane	3.81397				
2,2,4-Trimethylpentane	0				
Benzene	1.33752				
Toluene	1.89887				
Ethylbenzene	0.193036				
o-Xylene	0.564424				
Octane	6.83338				
Triethylene Glycol	2.04041E-09				
Water	11.3597				

Process Streams Report All Streams Tabulated by Total Phase					
Client Name:	DELAWARE DIVISION			Job: DELAWARE CS	
Location:	LONGHORN COMPRESSOR STATION				
Flowsheet:	3616s				
Mass Flow	26 lb/h	27 lb/h			
Carbon Dioxide	179.333				
Hydrogen Sulfide	0				
Nitrogen	8.60511				
Methane	469.177				
Ethane	393.213				
Propane	669.967				
Isobutane	216.212				
n-Butane	720.584				
Isopentane	388.719				
n-Pentane	567.619				
Cyclopentane	0				
n-Hexane	486.651				
Cyclohexane	216.744				
i-C6	573.848				
iC7	1077.55				
Methylcyclohexane	307.607				
2,2,4-Trimethylpentane	0				
Benzene	107.874				
Toluene	153.149				
Ethylbenzene	15.5689				
o-Xylene	45.5224				
Octane	551.131				
Triethylene Glycol	1.64565E-07				
Water	916.192				
Stream Properties					
Property	Units	26	27		
Temperature	°F	63.21			
Molecular Weight	lb/lbmol	44.9721			
Std Vapor Volumetric Flow	MMSCFD	1.63336	0		
Std Liquid Volumetric Flow	sgpm	26.5438	0		
Gross Ideal Gas Heating Value	Btu/ft ³	2173.72			
Remarks					

User Value Sets Report

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	

Tank-1

User Value [BlockReady]

* Parameter	1	Upper Bound	
Lower Bound		* Enforce Bounds	False

User Value [ShellLength]

* Parameter	30 ft	Upper Bound	ft
Lower Bound	ft	* Enforce Bounds	False

User Value [ShellDiam]

* Parameter	15.5 ft	Upper Bound	ft
Lower Bound	ft	* Enforce Bounds	False

User Value [BreatherVP]

* Parameter	-0.465949 psig	Upper Bound	psig
Lower Bound	psig	* Enforce Bounds	False

User Value [BreatherVacP]

* Parameter	-0.525949 psig	Upper Bound	psig
Lower Bound	psig	* Enforce Bounds	False

User Value [DomeRadius]

Parameter	ft	Upper Bound	ft
Lower Bound	ft	* Enforce Bounds	False

User Value [OpPress]

* Parameter	-0.495949 psig	Upper Bound	psig
Lower Bound	psig	* Enforce Bounds	False

User Value [AvgPercentLiq]

* Parameter	75 %	Upper Bound	%
Lower Bound	%	* Enforce Bounds	False

User Value [MaxPercentLiq]

* Parameter	90 %	Upper Bound	%
Lower Bound	%	* Enforce Bounds	False

User Value [AnnNetTP]

* Parameter	452.007 bbl/day	Upper Bound	bbl/day
Lower Bound	bbl/day	* Enforce Bounds	False

User Value [OREff]

Parameter	%	Upper Bound	%
Lower Bound	%	* Enforce Bounds	False

User Value [MaxAvgT]

* Parameter	77.225 °F	Upper Bound	°F
Lower Bound	°F	* Enforce Bounds	False

User Value [MinAvgT]

* Parameter	49.325 °F	Upper Bound	°F
Lower Bound	°F	* Enforce Bounds	False

User Value [BulkLiqT]

* Parameter	96.9295 °F	Upper Bound	°F
Lower Bound	°F	* Enforce Bounds	False

* User Specified Values
 ? Extrapolated or Approximate Values

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User Value Sets Report

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	

User Value [AvgP]

* Parameter	13.282	psia	Upper Bound	psia
Lower Bound		psia	* Enforce Bounds	False

User Value [Therml]

* Parameter	1689.49	Btu/ft^2/day	Upper Bound	Btu/ft^2/day
Lower Bound		Btu/ft^2/day	* Enforce Bounds	False

User Value [AvgWindSpeed]

* Parameter	11.1167	mi/h	Upper Bound	mi/h
Lower Bound		mi/h	* Enforce Bounds	False

User Value [MaxHourlyLoadingRate]

* Parameter	18.8336	bbl/hr	Upper Bound	bbl/hr
Lower Bound		bbl/hr	* Enforce Bounds	False

User Value [EntrainedOilFrac]

* Parameter	1	%	Upper Bound	%
Lower Bound		%	* Enforce Bounds	False

User Value [TurnoverRate]

* Parameter	181.8		Upper Bound	
Lower Bound			* Enforce Bounds	False

User Value [LLossSatFactor]

Parameter			Upper Bound	
Lower Bound			* Enforce Bounds	False

User Value [AtmPressure]

* Parameter	13.282	psia	Upper Bound	psia
Lower Bound		psia	* Enforce Bounds	False

User Value [TVP]

* Parameter	0.753236	psia	Upper Bound	psia
Lower Bound		psia	* Enforce Bounds	False

User Value [MaxVP]

* Parameter	0.996607	psia	Upper Bound	psia
Lower Bound		psia	* Enforce Bounds	False

User Value [MinVP]

* Parameter	0.559307	psia	Upper Bound	psia
Lower Bound		psia	* Enforce Bounds	False

User Value [AvgLiqSurfaceT]

* Parameter	87.8607	°F	Upper Bound	°F
Lower Bound		°F	* Enforce Bounds	False

User Value [MaxLiqSurfaceT]

* Parameter	97.9681	°F	Upper Bound	°F
Lower Bound		°F	* Enforce Bounds	False

User Value [TotalLosses]

* Parameter	0.0371096	ton/yr	Upper Bound	ton/yr
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User Value Sets Report

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	

User Value [TotalLosses]

Lower Bound	ton/yr	* Enforce Bounds	False
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User Value [WorkingLosses]

* Parameter	0.0328218 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [StandingLosses]

* Parameter	0.00428779 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [RimSealLosses]

* Parameter	0 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [WithdrawalLoss]

* Parameter	0 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [LoadingLosses]

* Parameter	0 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [MaxHourlyLoadingLoss]

* Parameter	0 lb/hr	Upper Bound	lb/hr
Lower Bound	lb/hr	* Enforce Bounds	False

User Value [PStar]

Parameter		Upper Bound	
Lower Bound		* Enforce Bounds	False

User Value [AllCTotalLosses]

* Parameter	0.50654 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [AllCLoadingLosses]

* Parameter	0 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [AllCMaxHLoadingLoss]

* Parameter	0 lb/hr	Upper Bound	lb/hr
Lower Bound	lb/hr	* Enforce Bounds	False

User Value [AllCFlashingLosses]

* Parameter	1.82001 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [DeckFittingLosses]

* Parameter	0 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [DeckSeamLosses]

* Parameter	0 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value Sets Report

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	

User Value [FlashingLosses]

* Parameter	1.15584	ton/yr	Upper Bound	ton/yr
Lower Bound		ton/yr	* Enforce Bounds	False

User Value [TotalResidual]

* Parameter	28608.3	ton/yr	Upper Bound	ton/yr
Lower Bound		ton/yr	* Enforce Bounds	False

User Value [GasMoleWeight]

* Parameter	0.0217384	kg/mol	Upper Bound	kg/mol
Lower Bound		kg/mol	* Enforce Bounds	False

User Value [VapReportableFrac]

* Parameter	7.32609	%	Upper Bound	%
Lower Bound		%	* Enforce Bounds	False

User Value [LiqReportableFrac]

* Parameter	2.37505	%	Upper Bound	%
Lower Bound		%	* Enforce Bounds	False

User Value [FlashReportableFrac]

* Parameter	63.5073	%	Upper Bound	%
Lower Bound		%	* Enforce Bounds	False

Remarks

This User Value Set was programmatically generated. GUID={CC3D1D05-E15F-4CB1-B892-57DAD3CAEB6D}

OT

User Value [BlockReady]

* Parameter	1	Upper Bound		
Lower Bound		* Enforce Bounds	False	

User Value [ShellLength]

* Parameter	16	ft	Upper Bound	ft
Lower Bound		ft	* Enforce Bounds	False

User Value [ShellDiam]

* Parameter	15.5	ft	Upper Bound	ft
Lower Bound		ft	* Enforce Bounds	False

User Value [BreatherVP]

* Parameter	-0.465949	psig	Upper Bound	psig
Lower Bound		psig	* Enforce Bounds	False

User Value [BreatherVacP]

* Parameter	-0.525949	psig	Upper Bound	psig
Lower Bound		psig	* Enforce Bounds	False

User Value [DomeRadius]

Parameter	ft	Upper Bound	ft	
Lower Bound		* Enforce Bounds	False	

User Value Sets Report

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	

User Value [OpPress]

* Parameter	-0.495949	psig	Upper Bound	psig
Lower Bound		psig	* Enforce Bounds	False

User Value [AvgPercentLiq]

* Parameter	50	%	Upper Bound	%
Lower Bound		%	* Enforce Bounds	False

User Value [MaxPercentLiq]

* Parameter	90	%	Upper Bound	%
Lower Bound		%	* Enforce Bounds	False

User Value [AnnNetTP]

* Parameter	619.504	bbl/day	Upper Bound	bbl/day
Lower Bound		bbl/day	* Enforce Bounds	False

User Value [OREff]

* Parameter	0	%	Upper Bound	%
Lower Bound		%	* Enforce Bounds	False

User Value [MaxAvgT]

* Parameter	75.7333	°F	Upper Bound	°F
Lower Bound		°F	* Enforce Bounds	False

User Value [MinAvgT]

* Parameter	45.9	°F	Upper Bound	°F
Lower Bound		°F	* Enforce Bounds	False

User Value [BulkLiqT]

* Parameter	91.1285	°F	Upper Bound	°F
Lower Bound		°F	* Enforce Bounds	False

User Value [AvgP]

* Parameter	12.731	psia	Upper Bound	psia
Lower Bound		psia	* Enforce Bounds	False

User Value [ThermI]

* Parameter	1810	Btu/ft^2/day	Upper Bound	Btu/ft^2/day
Lower Bound		Btu/ft^2/day	* Enforce Bounds	False

User Value [AvgWindSpeed]

* Parameter	8.68333	mi/h	Upper Bound	mi/h
Lower Bound		mi/h	* Enforce Bounds	False

User Value [MaxHourlyLoadingRate]

* Parameter	210	bbl/hr	Upper Bound	bbl/hr
Lower Bound		bbl/hr	* Enforce Bounds	False

User Value [EntrainedOilFrac]

* Parameter	1	%	Upper Bound	%
Lower Bound		%	* Enforce Bounds	False

User Value [TurnoverRate]

* Parameter	116.798		Upper Bound	
Lower Bound			* Enforce Bounds	False

* User Specified Values
 ? Extrapolated or Approximate Values

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User Value Sets Report

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	

User Value [LLossSatFactor]

* Parameter	0.5	Upper Bound	
Lower Bound		* Enforce Bounds	False

User Value [AtmPressure]

* Parameter	12.731 psia	Upper Bound	psia
Lower Bound	psia	* Enforce Bounds	False

User Value [TVP]

* Parameter	10.3766 psia	Upper Bound	psia
Lower Bound	psia	* Enforce Bounds	False

User Value [MaxVP]

* Parameter	12.0506 psia	Upper Bound	psia
Lower Bound	psia	* Enforce Bounds	False

User Value [MinVP]

* Parameter	8.77533 psia	Upper Bound	psia
Lower Bound	psia	* Enforce Bounds	False

User Value [AvgLiqSurfaceT]

* Parameter	83.9399 °F	Upper Bound	°F
Lower Bound	°F	* Enforce Bounds	False

User Value [MaxLiqSurfaceT]

* Parameter	94.758 °F	Upper Bound	°F
Lower Bound	°F	* Enforce Bounds	False

User Value [TotalLosses]

* Parameter	43.4237 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [WorkingLosses]

* Parameter	5.27052 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [StandingLosses]

* Parameter	5.58541 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [RimSealLosses]

* Parameter	0 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [WithdrawalLoss]

* Parameter	0 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [LoadingLosses]

* Parameter	23.9601 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [MaxHourlyLoadingLoss]

* Parameter	44.5041 lb/hr	Upper Bound	lb/hr
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User Value Sets Report

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	

User Value [MaxHourlyLoadingLoss]

Lower Bound	lb/hr	* Enforce Bounds	False
-------------	-------	------------------	-------

User Value [PStar]

Parameter	Upper Bound		
Lower Bound	* Enforce Bounds		False

User Value [AllCTotalLosses]

* Parameter	52.4686 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [AllCLoadingLosses]

* Parameter	28.9508 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [AllCMaxHLoadingLoss]

* Parameter	53.7741 lb/hr	Upper Bound	lb/hr
Lower Bound	lb/hr	* Enforce Bounds	False

User Value [AllCFlashingLosses]

* Parameter	601.822 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [DeckFittingLosses]

* Parameter	0 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [DeckSeamLosses]

* Parameter	0 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [FlashingLosses]

* Parameter	513.339 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [TotalResidual]

* Parameter	27484.8 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [GasMoleWeight]

* Parameter	0.0512684 kg/mol	Upper Bound	kg/mol
Lower Bound	kg/mol	* Enforce Bounds	False

User Value [VapReportableFrac]

* Parameter	82.7613 %	Upper Bound	%
Lower Bound	%	* Enforce Bounds	False

User Value [LiqReportableFrac]

* Parameter	99.8554 %	Upper Bound	%
Lower Bound	%	* Enforce Bounds	False

User Value [FlashReportableFrac]

* Parameter	85.2974 %	Upper Bound	%
Lower Bound	%	* Enforce Bounds	False

User Value Sets Report

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	

Remarks

This User Value Set was programmatically generated. GUID={F7442B0D-0A5A-4937-A7AE-F50E539ECDCE}

PW Tank

User Value [BlockReady]

* Parameter	1	Upper Bound	
Lower Bound		* Enforce Bounds	False

User Value [ShellLength]

* Parameter	16 ft	Upper Bound	ft
Lower Bound	ft	* Enforce Bounds	False

User Value [ShellDiam]

* Parameter	15.5 ft	Upper Bound	ft
Lower Bound	ft	* Enforce Bounds	False

User Value [BreatherVP]

* Parameter	-0.465949 psig	Upper Bound	psig
Lower Bound	psig	* Enforce Bounds	False

User Value [BreatherVacP]

* Parameter	-0.525949 psig	Upper Bound	psig
Lower Bound	psig	* Enforce Bounds	False

User Value [DomeRadius]

Parameter	ft	Upper Bound	ft
Lower Bound	ft	* Enforce Bounds	False

User Value [OpPress]

* Parameter	-0.495949 psig	Upper Bound	psig
Lower Bound	psig	* Enforce Bounds	False

User Value [AvgPercentLiq]

* Parameter	50 %	Upper Bound	%
Lower Bound	%	* Enforce Bounds	False

User Value [MaxPercentLiq]

* Parameter	90 %	Upper Bound	%
Lower Bound	%	* Enforce Bounds	False

User Value [AnnNetTP]

* Parameter	439.184 bbl/day	Upper Bound	bbl/day
Lower Bound	bbl/day	* Enforce Bounds	False

User Value [OREff]

* Parameter	0 %	Upper Bound	%
Lower Bound	%	* Enforce Bounds	False

User Value [MaxAvgT]

* Parameter	75.7333 °F	Upper Bound	°F
Lower Bound	°F	* Enforce Bounds	False

User Value Sets Report

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	

User Value [MinAvgT]

* Parameter	45.9 °F	Upper Bound	°F
Lower Bound	°F	* Enforce Bounds	False

User Value [BulkLiqT]

* Parameter	95 °F	Upper Bound	°F
Lower Bound	°F	* Enforce Bounds	False

User Value [AvgP]

* Parameter	12.731 psia	Upper Bound	psia
Lower Bound	psia	* Enforce Bounds	False

User Value [ThermI]

* Parameter	1810 Btu/ft^2/day	Upper Bound	Btu/ft^2/day
Lower Bound	Btu/ft^2/day	* Enforce Bounds	False

User Value [AvgWindSpeed]

* Parameter	8.68333 mi/h	Upper Bound	mi/h
Lower Bound	mi/h	* Enforce Bounds	False

User Value [MaxHourlyLoadingRate]

* Parameter	180 bbl/hr	Upper Bound	bbl/hr
Lower Bound	bbl/hr	* Enforce Bounds	False

User Value [EntrainedOilFrac]

* Parameter	1 %	Upper Bound	%
Lower Bound	%	* Enforce Bounds	False

User Value [TurnoverRate]

* Parameter	165.602	Upper Bound	
Lower Bound		* Enforce Bounds	False

User Value [LLossSatFactor]

* Parameter	0.5	Upper Bound	
Lower Bound		* Enforce Bounds	False

User Value [AtmPressure]

* Parameter	12.731 psia	Upper Bound	psia
Lower Bound	psia	* Enforce Bounds	False

User Value [TVP]

* Parameter	0.686898 psia	Upper Bound	psia
Lower Bound	psia	* Enforce Bounds	False

User Value [MaxVP]

* Parameter	0.936457 psia	Upper Bound	psia
Lower Bound	psia	* Enforce Bounds	False

User Value [MinVP]

* Parameter	0.494771 psia	Upper Bound	psia
Lower Bound	psia	* Enforce Bounds	False

User Value [AvgLiqSurfaceT]

* Parameter	86.1079 °F	Upper Bound	°F
Lower Bound	°F	* Enforce Bounds	False

* User Specified Values
 ? Extrapolated or Approximate Values

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User Value Sets Report

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	

User Value [MaxLiqSurfaceT]

* Parameter	96.926 °F	Upper Bound	°F
Lower Bound	°F	* Enforce Bounds	False

User Value [TotalLosses]

* Parameter	0.00158445 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [WorkingLosses]

* Parameter	0.000611983 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [StandingLosses]

* Parameter	0.000180242 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [RimSealLosses]

* Parameter	0 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [WithdrawalLoss]

* Parameter	0 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [LoadingLosses]

* Parameter	0.00168706 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [MaxHourlyLoadingLoss]

* Parameter	0.00378874 lb/hr	Upper Bound	lb/hr
Lower Bound	lb/hr	* Enforce Bounds	False

User Value [PStar]

Parameter	Upper Bound
Lower Bound	* Enforce Bounds False

User Value [AllCTotalLosses]

* Parameter	0.506937 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [AllCLoadingLosses]

* Parameter	0.539769 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [AllCMaxHLoadingLoss]

* Parameter	1.21219 lb/hr	Upper Bound	lb/hr
Lower Bound	lb/hr	* Enforce Bounds	False

User Value [AllCFlashingLosses]

* Parameter	0.233783 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [DeckFittingLosses]

* Parameter	0 ton/yr	Upper Bound	ton/yr
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* User Specified Values
 ? Extrapolated or Approximate Values

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User Value Sets Report

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	

User Value [DeckFittingLosses]

Lower Bound	ton/yr	* Enforce Bounds	False
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User Value [DeckSeamLosses]

* Parameter	0 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [FlashingLosses]

* Parameter	0.133289 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [TotalResidual]

* Parameter	27955.4 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

User Value [GasMoleWeight]

* Parameter	0.0204496 kg/mol	Upper Bound	kg/mol
Lower Bound	kg/mol	* Enforce Bounds	False

User Value [VapReportableFrac]

* Parameter	0.312553 %	Upper Bound	%
Lower Bound	%	* Enforce Bounds	False

User Value [LiqReportableFrac]

* Parameter	0.0996184 %	Upper Bound	%
Lower Bound	%	* Enforce Bounds	False

User Value [FlashReportableFrac]

* Parameter	57.014 %	Upper Bound	%
Lower Bound	%	* Enforce Bounds	False

Remarks

This User Value Set was programmatically generated. GUID={97D383FE-45EC-41EA-B885-A11A6D38ED67}

Sum Component Flow/Frac

User Value [CompSum]

* Parameter	138.63 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

Remarks

This User Value Set was programmatically generated. GUID={D42EC117-8830-4EAC-AA50-32FC2C75561E}

Sum Component Flow/Frac.252

User Value [CompSum]

* Parameter	54.3999 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

Remarks

This User Value Set was programmatically generated. GUID={2D75040C-82C9-47EC-A626-8AB1AB22CD4F}

User Value Sets Report

Client Name:	DELAWARE DIVISION	Job: DELAWARE CS
Location:	LONGHORN COMPRESSOR STATION	

Sum Component Flow/Frac1

User Value [CompSum]

* Parameter	138.63 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

Remarks

This User Value Set was programmatically generated. GUID={D1D08EDD-6D8E-43BF-B574-E1BFE0E6DCC2}

Sum Component Flow/Frac.1

User Value [CompSum]

* Parameter	54.4 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

Remarks

This User Value Set was programmatically generated. GUID={2EE90A55-2581-4490-BFE9-3424496B84F9}

Sum Component Flow/Frac2

User Value [CompSum]

* Parameter	399.046 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

Remarks

This User Value Set was programmatically generated. GUID={4A83408A-15AC-48B8-8C90-510A52291C95}

Sum Component Flow/Frac3

User Value [CompSum]

* Parameter	138.63 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

Remarks

This User Value Set was programmatically generated. GUID={8F78F965-BB5D-4BF0-A6CC-7B3AECA05746}

Sum Component Flow/Frac.2

User Value [CompSum]

* Parameter	54.4 ton/yr	Upper Bound	ton/yr
Lower Bound	ton/yr	* Enforce Bounds	False

Remarks

This User Value Set was programmatically generated. GUID={53E4F551-3CF3-4874-84CE-03A0A3F7F4BF}

ITEM 2 - ECD - 60" Combustor 57.6 MCF/D Max - skid package with blowcase

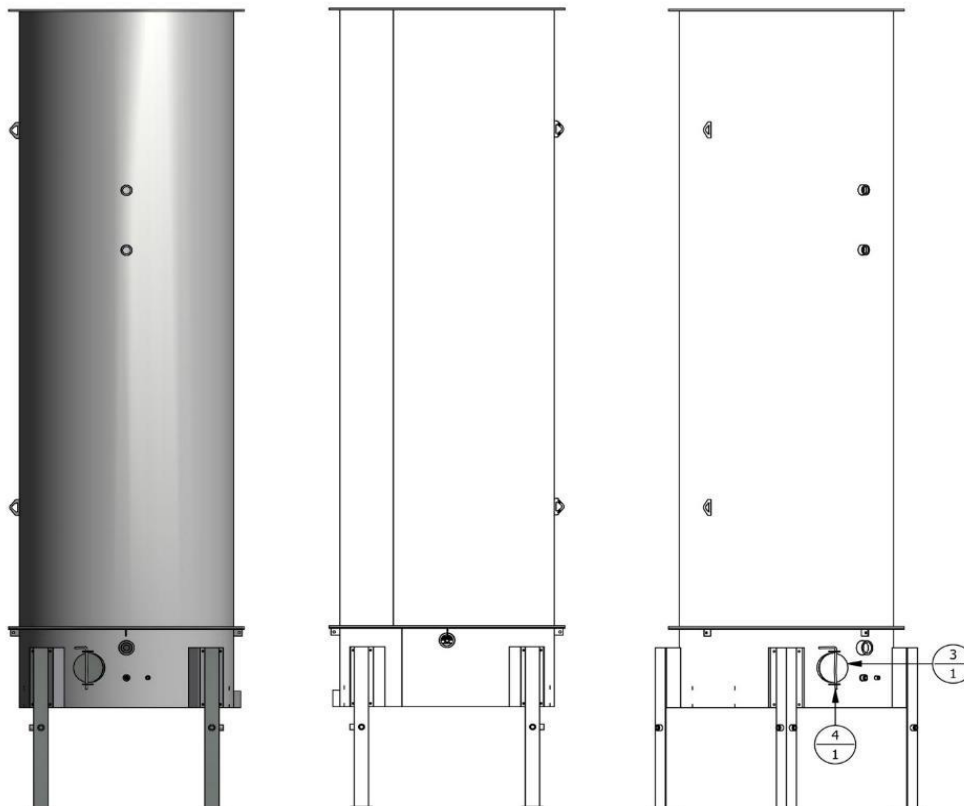
Combustor details

- | | |
|---------------|---|
| Combustor: | <ul style="list-style-type: none"> • Dimensions 60"D x 13' • Atmospheric MAWP • 6.1 MMBTU/HR |
| Plumbing: | <ul style="list-style-type: none"> • Stainless Steel Jets • Flamecell • 34"L x 41"W Burner |
| Concrete pad: | <ul style="list-style-type: none"> • 3" Wenco Flame Arrestor • 3" NPT Inlet Connection • 1/4" Fisher 67CR-206 Pilot Regulator |
| BMS p/n: | <ul style="list-style-type: none"> • Installed on a 6' x 10' skid, with (1) 24"x48" knockout drum, (1) 10.75"x36" blowcase, (1) 1" Kimray Direct acting, (1) 1" Kimray Reverse acting, (1) Kimray CUA Level Control, fully assembled and plumbed |
| p/n 148392 | <ul style="list-style-type: none"> • Paint color: Black • ARC™ PREMIER BMS Package includes: smart auto-ignition, CLS I, DIV II (pending), Modbus RTU over RS-485, Advanced Datalogging, Premier combustion Kit: Includes (2) 1/4" 0.55W ASCO Solenoid Valves, 1/4" 0-5 PSI Transducer, (1) Dual Process Type K Thermocouple w/ Thermowell, no solar package, shipped loose |

Item 2 Description	Quantity	Price Each
ECD - 60" Combustor 57.6 MCF/D Max w/ skid package with blowcase	1 to 4	\$27,760
	5+	\$25,817
ARC™ PREMIER BMS Package	1+	\$4,112

Terms/Delivery

Subject to Prior Sale / 7-8 weeks ARO, Ex Works Mfg Facility: Evans, CO, based on availability at time of quote.
 Availability will be confirmed after receipt of Purchase Order.
 Expediting 1-3 business days - 15% upcharge; 4-10 business days - 5% upcharge
 Drawing is for information only. Unit specific drawing available upon request.



EPA CERTIFIED

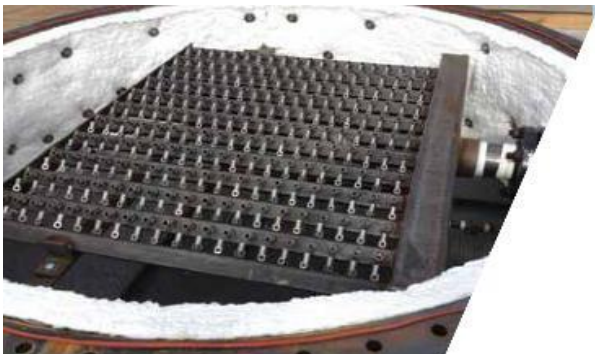
ENCLOSED COMBUSTORS



Cimarron's enclosed combustion units provide a clean, safe, and efficient solution for eliminating tank vapors and ensuring regulatory compliance. Their performance has been proven to exceed the US EPA's strict requirements with a greater than 99% destruction rate. Designed for both low and high volume applications, the enclosed flares are easy to install and require little ongoing maintenance. Ignition systems include automation capability and data logging features. Standard models have flame cells ranging from 24" to 60", with capacity of 2,000 to 75,000 SCFD. The larger high volume units contain four 24" flame cells and can accommodate up to 200,000 SCFD. ECDs typically operate at pressures of 1 to 12 oz/in².

DESIGN FEATURES AND OPTIONS

- Five Models Manufacturer Performance Tested as per NSPS OOOO §60.5413(d)
- Demonstrated VOC Destruction Efficiency >99%
- Eliminates the requirement for in-field testing to demonstrate continuous compliance.
- Solar powered BMS and data logging functions
- Cimarron actuator package for low flow and flameout shutdown
- Drip tank for free liquid removal
- Blowcase skids and modular package options available
- User friendly and easy to install



All five models were approved by the EPA in December 2014 as "Manufacturer Tested" under Quad O guidelines.





March 15, 2019

XTO Energy
3104 E Greene St.
Carlsbad, NM
88220

Attention: To Whom It May Concern

Subject: Compliance with 40 CFR 60.18 Flare Requirements and Destruction Removal Efficiency Confirmation

The Tornado Combustion Technologies Inc. (TCTI) designed two (2) separate dual air assisted flare systems for XTO Energy Midstream Operations Compressor Facilities designed with a maximum buildout design flowrate of 100 to 180 MMSCFD, as per XTO Energy/Select Engineering Flare Specification 1332-SP-P-013 (XTO Energy/Select Engineering Project No.: 1332) on February 20, 2018 (TCTI Design Reference No.: TOR0218 Rev. 0).

The first flare has a 30-inch outer diameter air tip, 22-inch outer diameter annular low pressure air assisted waste gas tip for continuous flaring operations, and 20-inch outer diameter high pressure waste gas tip for facility emergency relieving cases. The tip as previously described is mounted on a riser and guy wire supporting structure so that the overall flare height is 140-feet tall. To date TCTI has provided One (1) flare of this design to XTO Energy Midstream Operations Compressor Facilities, under the following job number:

- 14170 (16495).

This flare design is intended to operate such that:

- i) The maximum high pressure emergency flow rate does not exceed a maximum flow rate of 59,767,069 SCFD, and a maximum net heat release of 6,069,175,258.85 BTU/h; and,
- ii) The maximum low pressure intermittent flow rate does not exceed a maximum flow rate of 952,833 SCFD, a maximum continuous flowrate of 124,363 SCFD which will operate without visible emissions (i.e. excessive soot formation) and a maximum net heat release of 104,435,128.72 BTU/h. For more detailed information please refer to the enclosed design datasheets.

To meet the requirements of 40 CFR 60.18 and industry best practices Tornado has designed the flare to operate as follows:

- TCTI has been designed the flare so each riser of the dual flare system will operate independently. Thus the calculated 40 CFR 60.18 maximum exit velocity for the high pressure non-assisted flare is 391.39 ft/s, 377.63 ft/s and 400 ft/s, for the winter and summer heavy, and winter and summer rich and lean cases respectfully, and low pressure air assisted flare is 170.85 ft/s, 258.33 ft/s, 220.10 ft/s, 146.38 ft/s, 248.24 ft/s and 219.78 ft/s, for the winter and summer heavy, rich and lean cases respectfully, as per paragraphs (c)(3)(ii), (c)(4)(iii), (c)(5), and (f)(6). The actual exit velocities of the flare as determined by paragraph (f)(4) in 40 CFR 60.18, are 364.15 ft/s, 348.57 ft/s, 356.60 ft/s, 367.91 ft/s, 366.37 ft/s, and 372.10 ft/s, for the winter and summer heavy, rich and lean cases respectfully, and low pressure air assisted flare is 11.05 ft/s, 41.31 ft/s, 7.79 ft/s, 18.71 ft/s, 27.39 ft/s and 17.56 ft/s, for the winter and summer heavy, rich and lean cases respectfully. As can be seen the actual exit velocity of each low pressure air assisted flare is within the requirements of 40 CFR 60.18. The high pressure air assisted flare's exit velocity although greater than the requirements of 40 CFR

60.18, is exempt from compliance with the standard as per Section 40 CFR 60.11 paragraph (a), and 40 CFR 60.8 paragraph (c), as all cases presented to TCTI for the high pressure air assisted flare have been presented as emergency cases, that are not representative of the flare's performance;

- The calculated lower heating value of the waste gas for the high pressure non-assisted flare are 992.73 BTU/SCF, 1,233.19 BTU/SCF, 1,262.23 BTU/SCF, 979.52 BTU/SCF, 1,222.20 BTU/SCF, and 1,287.62 BTU/SCF, for the winter and summer heavy, rich and lean cases respectfully, and low pressure air assisted flare are 1,641.36 BTU/SCF, 2,650.44 BTU/SCF, 742.52 BTU/SCF, 1,926.09 BTU/SCF, 2,965.73 BTU/SCF, and 1,658.18 BTU/SCF, for the winter and summer heavy, rich and lean cases respectfully. The lower heating value of the provided waste gas composition was calculated as per paragraph (f)(3) of 40 CFR 60.18. This complies with paragraphs (c)(3)(ii) of 40 CFR 60.18 for both a non-assisted and an air assisted flare, as the heating value of the waste gas is greater than 200 BTU/SCF and 300 BTU/SCF, respectfully;
- Tornado has designed this flare to operate with a TSI #6 pilot and TPMR automatic relight and pilot monitoring system. If the flame failure contact is monitored by the client to the satisfaction of the local environmental authority having jurisdiction, then this complies with paragraph (f)(2) of 40 CFR 60.18;
- Tornado has designed the flare to modulate the air flow based upon the waste gas flow rate to the flare for the cases presented which are not considered startup, shutdown, or malfunction as per 40 CFR 60.8(c). By doing this in conjunction with proper flare tuning, the flare's air blower cannot introduce too much air into the jet exit stream thus lowering the destruction efficiency of the flare by quenching mechanisms.

The second flare has a 30-inch outer diameter air tip, 22.5-inch outer diameter annular low pressure air assisted waste gas tip for continuous flaring operations, and 21-inch outer diameter high pressure waste gas tip for facility emergency relieving cases. The tip as previously described is mounted on a riser and guy wire supporting structure so that the overall flare height is 145-feet tall. To date TCTI has provided eleven (11) flares of this design to XTO Energy Midstream Operations Compressor Facilities, under the following job numbers:

- 14274;
- 14275;
- 14276;
- 14277A;
- 14277B;
- 14278A;
- 14278B;
- 14287;
- 14318;
- 14319A;
- 14319B.

This flare design is intended to operate such that:

- i) The maximum high pressure emergency flow rate does not exceed a maximum flow rate of 70,000,000 SCFD, and a maximum net heat release of 7,108,300,193 BTU/h; and,
- ii) The maximum low pressure intermittent flow rate does not exceed a maximum flow rate of 952,833 SCFD, a maximum continuous flowrate of 124,363 SCFD which will operate without visible emissions (i.e. excessive soot formation) and a maximum net heat release of 104,435,128.72 BTU/h. For more detailed information please refer to the enclosed design datasheets.

Due to the volume of sales of this flare design to XTO Energy specifically TCTI has provided this flare with the following model designation moving forward:

- XTO0218R0-145FT.

Thus either the above provided TCTI job numbers or above model number can be used to relate back to this design and the intended operating parameters of the flare system design.

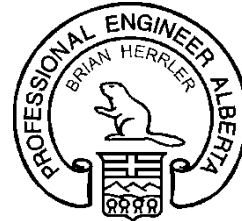
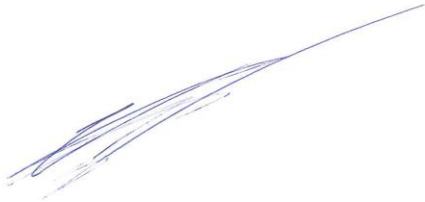
To meet the requirements of 40 CFR 60.18 and industry best practices Tornado has designed the flare to operate as follows:

- TCTI has been designed the flare so each riser of the dual flare system will operate independently. Thus the calculated 40 CFR 60.18 maximum exit velocity for the high pressure non-assisted flare is 391.39 ft/s, 377.63 ft/s and 400 ft/s, for the winter and summer heavy, and winter and summer rich and lean cases respectfully, and low pressure air assisted flare is 170.85 ft/s, 258.33 ft/s, 220.10 ft/s, 146.38 ft/s, 248.24 ft/s and 219.78 ft/s, for the winter and summer heavy, rich and lean cases respectfully, as per paragraphs (c)(3)(ii), (c)(4)(iii), (c)(5), and (f)(6). The actual exit velocities of the flare as determined by paragraph (f)(4) in 40 CFR 60.18, are 415.42 ft/s, 400.47 ft/s, 409.91 ft/s, 420.94 ft/s, 420.19 ft/s, and 426.12 ft/s, for the winter and summer heavy, rich and lean cases respectfully, and low pressure air assisted flare is 11.05 ft/s, 41.31 ft/s, 7.79 ft/s, 18.71 ft/s, 27.39 ft/s and 17.56 ft/s, for the winter and summer heavy, rich and lean cases respectfully. As can be seen the actual exit velocity of each low pressure air assisted flare is within the requirements of 40 CFR 60.18. The high pressure air assisted flare's exit velocity although greater than the requirements of 40 CFR 60.18, is exempt from compliance with the standard as per Section 40 CFR 60.11 paragraph (a), and 40 CFR 60.8 paragraph (c), as all cases presented to TCTI for the high pressure air assisted flare have been presented as emergency cases, that are not representative of the flare's performance;
- The calculated lower heating value of the waste gas for the high pressure non-assisted flare are 992.73 BTU/SCF, 1,233.19 BTU/SCF, 1,262.23 BTU/SCF, 979.52 BTU/SCF, 1,222.20 BTU/SCF, and 1,287.62 BTU/SCF, for the winter and summer heavy, rich and lean cases respectfully, and low pressure air assisted flare are 1,641.36 BTU/SCF, 2,650.44 BTU/SCF, 742.52 BTU/SCF, 1,926.09 BTU/SCF, 2,965.73 BTU/SCF, and 1,658.18 BTU/SCF, for the winter and summer heavy, rich and lean cases respectfully. The lower heating value of the provided waste gas composition was calculated as per paragraph (f)(3) of 40 CFR 60.18. This complies with paragraphs (c)(3)(ii) of 40 CFR 60.18 for both a non-assisted and an air assisted flare, as the heating value of the waste gas is greater than 200 BTU/SCF and 300 BTU/SCF, respectfully;
- Tornado has designed this flare to operate with a TSI #6 pilot and TPMR automatic relight and pilot monitoring system. If the flame failure contact is monitored by the client to the satisfaction of the local environmental authority having jurisdiction, then this complies with paragraph (f)(2) of 40 CFR 60.18;
- Tornado has designed the flare to modulate the air flow based upon the waste gas flow rate to the flare for the cases presented which are not considered startup, shutdown, or malfunction as per 40 CFR 60.8(c). By doing this in conjunction with proper flare tuning, the flare's air blower cannot introduce too much air into the jet exit stream thus lowering the destruction efficiency of the flare by quenching mechanisms.

With both flares being designed to operate as described above the Tornado Combustion Technologies Inc. flare system has been designed to operate in compliance with 40 CFR 60.18. As per EPA studies EPA-600/2-83-052, EPA-600/2-86-080, and EPA-600/2-85-106 meeting the criteria of 40 CFR 60.18 will attain a minimum Destruction Removal Efficiency (DRE) of 98% for hydrocarbon compounds.

XTO Energy has advised that the site under consideration does not need to meet the requirements of 40 CFR 60 Subpart OOOO and only the general requirements must be adhered.

Regards,



Permit Number: P10806
Date: 2019-03-15

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Cc:(4) Gene Kazmir, General Manager USA, Tornado Combustion Technologies Inc;
Cliff Kazmir, General Manager USA, Tornado Combustion Technologies Inc;
Bryce Thomas, Flare Manager, Tornado Combustion Technologies Inc;
Ian Burge, Combustion Engineering, Tornado Combustion Technologies Inc.

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

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

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

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

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

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

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

^a Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. Data are for all natural gas combustion sources. To convert from lb/10⁶ scf to kg/10⁶ m³, multiply by 16. To convert from lb/10⁶ scf to 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 CO₂. CO₂[lb/10⁶ scf] = (3.67) (CON) (C)(D), where CON = fractional conversion of fuel carbon to CO₂, C = carbon content of fuel by weight (0.76), and D = density of fuel, 4.2x10⁴ lb/10⁶ scf.

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

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

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

TABLE 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-Methylchloranthrene ^{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
205-82-3	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

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
74-98-6	Propane	1.6E+00	E
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/10⁶ scf to kg/10⁶ m³, multiply by 16. To convert from lb/10⁶ scf to lb/MMBtu, divide by 1,020. Emission Factors preceded 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

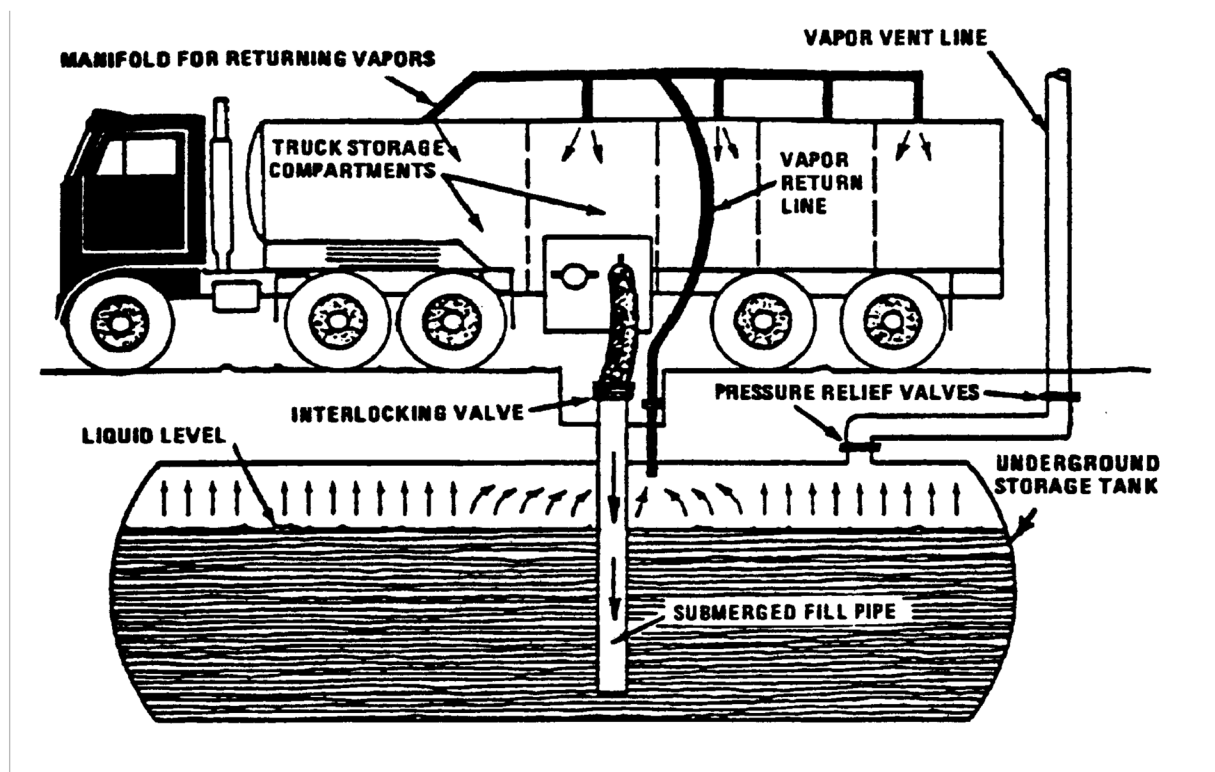


Figure 5.2-5. Tank truck unloading into a service station underground storage tank and practicing "vapor balance" form of emission control.

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

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

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

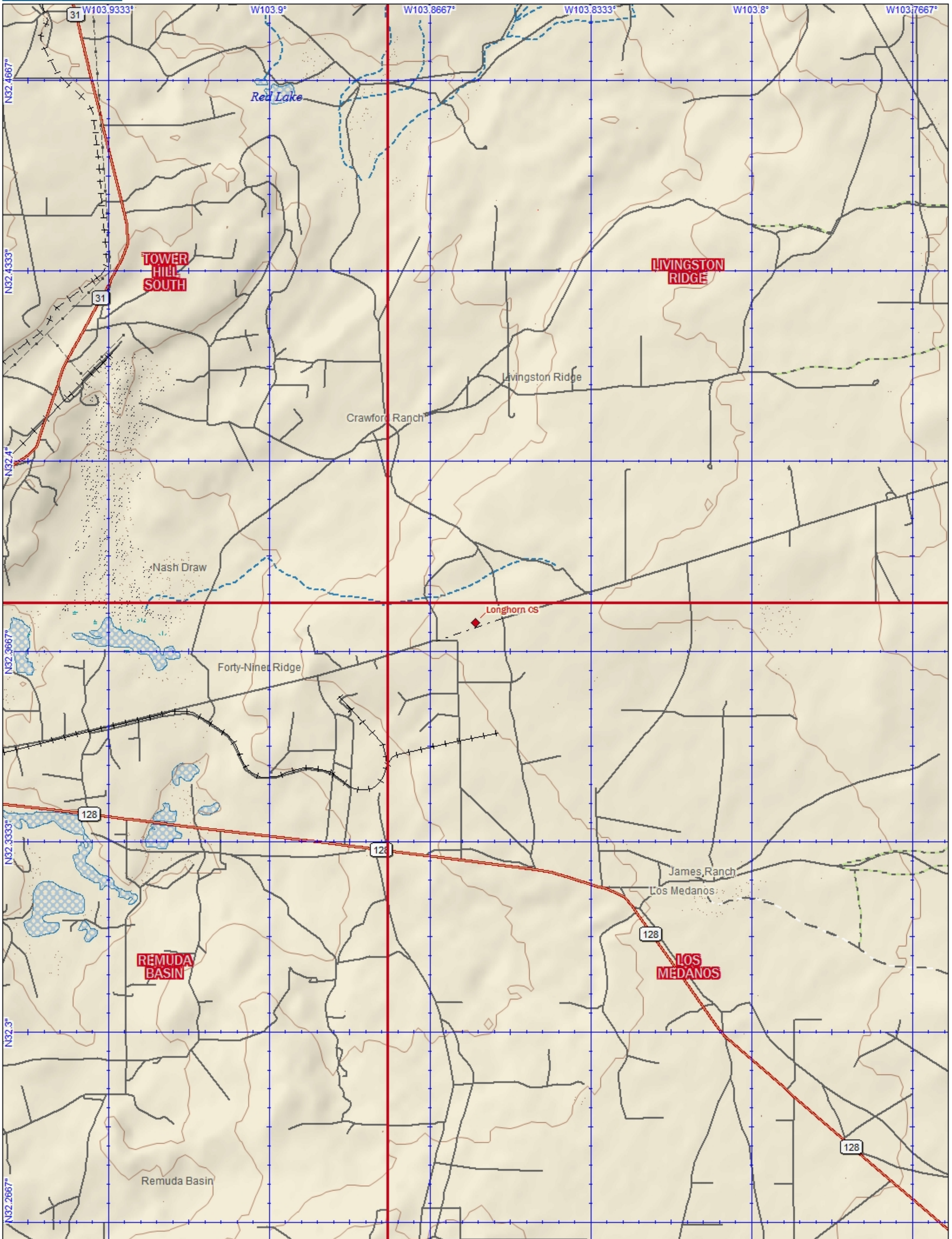
Section 8

Map(s)

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

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

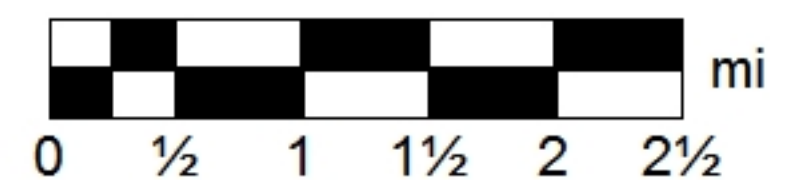
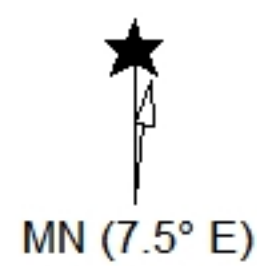
A site location map is provided.



Data use subject to license.

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Data Zoom 11-0

Longhorn CS

Aerial Image with 0.5 Mile Boundary and Access Roads

Legend

 Feature 1

Longhorn CS

Section 9

Proof of Public Notice

(for NSR applications submitting under 20.2.72 or 20.2.74 NMAC)

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

☐ **I have read the AQB “Guidelines for Public Notification for Air Quality Permit Applications”**

This document provides detailed instructions about public notice requirements for various permitting actions. It also provides public notice examples and certification forms. Material mistakes in the public notice will require a re-notice before issuance of the permit.

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

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

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

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

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

This application is not for a NSR application submitted under 20.2.72 or 20.2.74 NMAC.

Section 10

Written Description of the Routine Operations of the Facility

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

The Longhorn Compressor Station is a typical compressor station with natural gas-powered engines, dehys, flares, tanks and other ancillary equipment.

Field gas flows into two inlet slug catchers (110 MMscfd each). The site uses natural gas engines to compress the gas for sales, including (9) Caterpillar 3616 engines (ENG1-ENG9), three (3) Caterpillar 3516 engines (ENG10-ENG12), and one (1) Caterpillar 3306B engine (ENG13). All engines except the 3306B are equipped with oxidation catalysts to reduce CO, VOC, and formaldehyde emissions. Fuel gas is treated using a combination of heaters (HTR1-HTR3).

Gas is dehydrated using triethylene glycol dehydration units (DEHY1-DEHY3), each processing up to 80 MMscfd. The systems are equipped with flash tanks and condensers. Flash tank vapors are recycled in the dehydration system. The glycol still vent vapors are routed to condensers. Uncondensed vapors are controlled by a vapor combustor (VC1). Dehydrated gas is then transferred to a sales pipeline.

Liquids generated anywhere in the system are dumped to a low-pressure separator (LPS). Vapors from the LPS are routed to a vapor recovery unit (VRU). During VRU downtime, vapors are routed to FL1/FL2/FL3. From the LPS, oil at approximately 15 psig is dumped to four (4) condensate storage tanks (OT1-OT4), which are controlled by FL1/FL2/FL3. Water from the LPS flows to redundant skim tanks (SKTK1/SKTK2). The skim tanks are arranged as a redundant system in which one unit can be used if another is down for unforeseen circumstances. Water is then dumped to two (2) water tanks (WT1-WT2). Any residual condensate flows from the skim tanks into the condensate storage tanks. Vapors from the oil/water storage tanks and gun barrel separators are controlled by FL1/FL2/FL3. Condensate and water are trucked offsite.

The flare system (FL1/FL2/FL3) is also used to flare inlet or sales gas in the compressor station in the event of an emergency.

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):

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

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

☒ Yes ☐ No

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

☒ Yes ☐ No

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

☒ Yes ☐ No

C. Make a determination:

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

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

Section 12

Section 12.A

PSD Applicability Determination for All Sources

(Submitting under 20.2.72, 20.2.74 NMAC)

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

A. This facility is:

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

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

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

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

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

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

This application is not for a NSR application submitted under 20.2.72 or 20.2.74 NMAC.

Section 13

Determination of State & Federal Air Quality Regulations

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

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

Required Information for Specific Equipment:

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

Required Information for Regulations that Apply to the Entire Facility:

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

Regulatory Citations for Regulations That Do Not, but Could Apply:

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

Regulatory Citations for Emission Standards:

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

Federally Enforceable Conditions:

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

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

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

Table for Applicable STATE REGULATIONS:

<u>STATE REGU- LATIONS</u> CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION: (You may delete instructions or statements that do not apply in the justification column to shorten the document.)
20.2.1 NMAC	General Provisions	Yes	Facility	General Provisions apply to Notice of Intent, Construction, and Title V permit applications.
20.2.3 NMAC	Ambient Air Quality Standards NMAAQs	Yes	Facility	If subject, this would normally apply to the entire facility. 20.2.3 NMAC is a State Implementation Plan (SIP) approved regulation that limits the maximum allowable concentration of, Sulfur Compounds, Carbon Monoxide and Nitrogen Dioxide. Title V applications, see exemption at 20.2.3.9 NMAC The TSP NM ambient air quality standard was repealed by the EIB effective November 30, 2018.
20.2.7 NMAC	Excess Emissions	Yes	Facility	If subject, this would normally apply to the entire facility. If your entire facility or individual pieces of equipment are subject to emissions limits in a permit or numerical emissions standards in a federal or state regulation, this applies. This would not apply to Notices of Intent since these are not permits.
20.2.23 NMAC	Fugitive Dust Control	No	Facility	20.2.23.108 APPLICABILITY: A. This part shall apply to persons owning or operating the following fugitive dust sources in areas requiring a mitigation plan in accordance with 40 CFR Part 51.930: (1) disturbed surface areas or inactive disturbed surface areas, or a combination thereof, encompassing an area equal to or greater than one acre; (2) any commercial or industrial bulk material processing, handling, transport or storage operations. B. The following fugitive dust sources are exempt from this part: (1) agricultural facilities, as defined in this part; (2) roadways, as defined in this part; (3) operations issued permits pursuant to the state of New Mexico Air Quality Control Act, Mining Act or Surface Mining Act; and (4) lands used for state or federal military activities. [20.2.23.108 NMAC - N, 01/01/2019]
20.2.33 NMAC	Gas Burning Equipment - Nitrogen Dioxide	No	N/A	None of the equipment has a rating greater than 1 MMBtu/hr.
20.2.34 NMAC	Oil Burning Equipment: NO ₂	No	N/A	This facility has no oil burning equipment.
20.2.35 NMAC	Natural Gas Processing Plant – Sulfur	No	N/A	This facility is not a gas processing plant.
20.2.38 NMAC	Hydrocarbon Storage Facility	Yes	OT1- OT4	The site uses a flare to comply with 20.2.38 NMAC.
20.2.39 NMAC	Sulfur Recovery Plant - Sulfur	No	N/A	The facility does not operate a sulfur recovery plant.
20.2.61.109 NMAC	Smoke & Visible Emissions	Yes	ENG1- 13; FL1-3; HTR1- 3; RB1- 3; VC1	Engines and heaters are Stationary Combustion Equipment
20.2.70 NMAC	Operating Permits	Yes	Facility	The facility's potential to emit (PTE) is 100 tpy or more of any regulated air pollutant other than HAPs; and/or a HAPs PTE of 10 tpy or more for a single HAP and 25 tpy or more for combined HAP resulting in the facility's classification as being a major source.
20.2.71 NMAC	Operating Permit Fees	Yes	Facility	The facility is subject to 20.2.70 NMAC and includes numerical ton per year emission limits; therefore, this facility is subject to 20.2.71 NMAC.

<u>STATE REGU- LATIONS</u> CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION: (You may delete instructions or statements that do not apply in the justification column to shorten the document.)
20.2.72 NMAC	Construction Permits	Yes	Facility	This facility is currently authorized under NSR 8349, issued on January 16, 2020. This is not an application pursuant to 20.2.72 NMAC.
20.2.73 NMAC	NOI & Emissions Inventory Requirements	Yes	Facility	The site is subject to 20.2.72 NMAC.
20.2.74 NMAC	Permits – Prevention of Significant Deterioration (PSD)	No	N/A	The facility is not a major PSD site.
20.2.75 NMAC	Construction Permit Fees	No	N/A	This is not an application pursuant to 20.2.72, 20.2.73, 20.2.74, and/or 20.2.79 NMAC.
20.2.77 NMAC	New Source Performance	Yes	Units subject to 40 CFR 60	This is a stationary source which is subject to the requirements of 40 CFR Part 60, Subparts A, OOOOa, and JJJJ.
20.2.78 NMAC	Emission Standards for HAPS	No	N/A	No units are subject to the subparts found in 40 CFR 61.
20.2.79 NMAC	Permits – Nonattainment Areas	No	N/A	The facility is not located in a nonattainment area.
20.2.80 NMAC	Stack Heights	No	N/A	There are no stacks to which this regulation would apply.
20.2.82 NMAC	MACT Standards for source categories of HAPS		Units Subject to 40 CFR 63	This regulation applies to all sources emitting hazardous air pollutants, which are subject to the requirements of 40 CFR Part 63.

Table for Applicable FEDERAL REGULATIONS

<u>FEDERAL REGU- LATIONS</u> CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
40 CFR 50	NAAQS	Yes	Facility	Facility is subject to 20.2.72 NMAC.
NSPS 40 CFR 60, Subpart A	General Provisions	Yes	Units subject to 40 CFR 60	NSPS OOOOa – ENG1-ENG13; FUG NSPS JJJJ – ENG1-ENG13

<u>FEDERAL REGU- LATIONS CITATION</u>	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
NSPS 40 CFR60.40a, Subpart Da	Subpart Da, Performance Standards for Electric Utility Steam Generating Units	No	N/A	The facility does not operate any electric utility steam generating units.
NSPS 40 CFR60.40b Subpart Db	Electric Utility Steam Generating Units	No	N/A	The facility does not operate any electric utility steam generating units.
40 CFR 60.40c, Subpart Dc	Standards of Performance for Small Industrial- Commercial- Institutional Steam Generating Units	No	N/A	The facility does not operate any electric utility steam generating units.
NSPS 40 CFR 60, Subpart Ka	Standards of Performance for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984	No	N/A	The site does not contain storage tanks constructed prior to July 23, 1984.
NSPS 40 CFR 60, Subpart Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984	No	N/A	The hydrocarbons are stored in vessels with a design capacity less than 1,589.874 m ³ and are stored prior to custody transfer. §60.110b(d)(4)
NSPS 40 CFR 60.330 Subpart GG	Stationary Gas Turbines	No	N/A	The facility does not operate any stationary gas turbines.
NSPS 40 CFR 60, Subpart KKK	Leaks of VOC from Onshore Gas Plants	No	N/A	The facility is not a gas plant.

<u>FEDERAL REGU- LATIONS CITATION</u>	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
NSPS 40 CFR Part 60 Subpart LLL	Standards of Performance for Onshore Natural Gas Processing: SO ₂ Emissions	No	N/A	The facility does not operate a sweetening unit.
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	The site was constructed after 9/18/15. See NSPS OOOOa discussion below.
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	Yes	ENG1-ENG13; FUG	The storage tanks were constructed after the applicability date of the rule; however, XTO is requesting emissions be limited by permit to less than 6 tpy. The regulation is not applicable to the storage tanks per 60.5365a(e). The site uses low-bleed pneumatic controllers which are not applicable per 60.5365a(d)(1). The gun barrels are not storage tanks. The site will be subject to leak monitoring from fugitive components per 60.5365a(j) and will comply with 60.5397a. ENG1-ENG13 are reciprocating compressor engines and will comply with 60.5385a.
NSPS 40 CFR 60 Subpart IIII	Standards of performance for Stationary Compression Ignition Internal Combustion Engines	No	N/A	The facility does not operate any affected sources.
NSPS 40 CFR Part 60 Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	Yes	ENG1-ENG13	ENG1-ENG13 engines are non-emergency Spark Ignition engines. ENG1-ENG12 engines are manufactured after 7/1/2010 and have a maximum engine power greater than 500 HP. ENG1-ENG12 engines are subject to the limitations in Table 1 per 40 CFR 60.4233(e). ENG13 engine is manufactured after 1/1/2011 and has a maximum engine power greater than 100 HP, but less than 500 HP. ENG13 engine is subject to the limitations in Table 1 per 40 CFR 60.4233(e).
NSPS 40 CFR 60 Subpart TTTT	Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units	No	N/A	The facility does not operate any affected sources.

<u>FEDERAL REGU- LATIONS CITATION</u>	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
NSPS 40 CFR 60 Subpart UUUU	Emissions Guidelines for Greenhouse Gas Emissions and Compliance Times for Electric Utility Generating Units	No	N/A	The facility does not operate any affected sources.
NSPS 40 CFR 60, Subparts WWW, XXX, Cc, and Cf	Standards of performance for Municipal Solid Waste (MSW) Landfills	No	N/A	The facility does not operate any affected sources.
NESHAP 40 CFR 61 Subpart A	General Provisions	No	N/A	No units are subject to the subparts found in 40 CFR 61.
NESHAP 40 CFR 61 Subpart E	National Emission Standards for Mercury	No	N/A	The facility does not operate any affected sources.
NESHAP 40 CFR 61 Subpart V	National Emission Standards for Equipment Leaks (Fugitive Emission Sources)	No	N/A	The facility does not operate any affected sources.
MACT 40 CFR 63, Subpart A	General Provisions	Yes	Units Subject to 40 CFR 63	MACT HH – DEHY1-3 MACT ZZZZ – ENG1-ENG13
MACT 40 CFR 63.760 Subpart HH	Oil and Natural Gas Production Facilities	Yes	DEHY1- 3	The facility is not a major source of HAPs as defined in §63.761. The dehydrators process more than 3 mmscfd (85,000 standard cubic meters per day); however, since benzene emissions are less than 1 tpy (0.9 Mg/year), per §63.764(e)(1) the dehydrators are exempt from the requirements of §63.764(d) except for the recordkeeping requirements in §63.774(d)(1).
MACT 40 CFR 63 Subpart HHH	Natural Gas Transmission and Storage Facilities	No	N/A	The facility does not operate any affected sources.
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	The facility is not a major source of HAP as defined in §63.7575 “Major source for oil and natural gas production facilities”. Therefore, MACT 40 CFR 63 Subpart DDDDD does not apply.
MACT 40 CFR 63 Subpart UUUUU	National Emission Standards for Hazardous Air Pollutants Coal & Oil Fire Electric Utility Steam Generating Unit	No	N/A	The facility does not operate any affected sources.

<u>FEDERAL REGU- LATIONS CITATION</u>	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
MACT 40 CFR 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE MACT)	Yes	ENG1- ENG13	The site is a major source of HAP. ENG1-ENG12 engines are 4SLB RICE engines with an engine rating greater than 500 HP subject to the limitations in 63.6600(b)-Table 2a.2. ENG13 engine is a 4SRB RICE engine with an engine rating less than 500 HP which complies with NSPS JJJJ to comply with NESHAP ZZZZ per 60.6590(c)(4).
40 CFR 64	Compliance Assurance Monitoring	No	N/A	The facility is not subject to CAM.
40 CFR 68	Chemical Accident Prevention	No	N/A	The facility does not store any chemicals above threshold quantities.
Title IV – Acid Rain 40 CFR 72	Acid Rain	No	N/A	The facility does not have any units subject to the Acid Rain regulations.
Title IV – Acid Rain 40 CFR 73	Sulfur Dioxide Allowance Emissions	No	N/A	The facility does not have any units subject to the Acid Rain regulations.
Title IV-Acid Rain 40 CFR 75	Continuous Emissions Monitoring	No	N/A	The facility does not have any units subject to the Acid Rain regulations.
Title IV – Acid Rain 40 CFR 76	Acid Rain Nitrogen Oxides Emission Reduction Program	No	N/A	The facility does not have any units subject to the Acid Rain regulations.
Title VI – 40 CFR 82	Protection of Stratospheric Ozone	No	N/A	The facility does not service, maintain, or repair equipment containing refrigerants.

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.
-

Emissions during startups, shutdowns, maintenance and emergencies (ESDs) will be minimized through the application of industry standards and /or manufacturer recommended operating practices as described below. Trained technicians are responsible for the timely and effective implementation of these actions.

Startup procedures for the engines are normally completed in less than 15 minutes and shutdown procedures are normally completed in less than 5 minutes. During a cold startup, the units may emit at a higher rate than normal as the units warm to operating temperature; however, if the unit has been shut down for long enough that a warm up is required, the small excess emissions occurring during warmup will be more than offset by the lack of emissions during the shutdown period. Similarly, if the unit is restarted while warm, there should be no excess emissions as the unit is already at operating temperature.

Section 15

Alternative Operating Scenarios

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

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

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

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

XTO is not proposing any alternative operating scenarios.

Section 16

Air Dispersion Modeling

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

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

Check each box that applies:

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

An ambient air quality impact analysis including dispersion modeling was submitted with the construction permit application for NSR 8349. The dispersion modeling demonstrated compliance with the National Ambient Air Quality Standards and applicable PSD increments.

Section 17

Compliance Test History

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

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

Compliance Test History Table

Unit No.	Test Description	Test Date
ENG1	Initial compliance test in accordance with 40 CFR Part 60, Subpart JJJJ and 40 CFR Part 63, Subpart ZZZZ as required by NSR Permit 8349.	10/7/2020
ENG1	Quarterly compliance test in accordance with 40 CFR Part 60, Subpart JJJJ and 40 CFR Part 63, Subpart ZZZZ as required by NSR Permit 8349.	3/23/2021
ENG2	Initial compliance test in accordance with 40 CFR Part 60, Subpart JJJJ and 40 CFR Part 63, Subpart ZZZZ as required by NSR Permit 8349.	10/9/2020
ENG2	Quarterly compliance test in accordance with 40 CFR Part 60, Subpart JJJJ and 40 CFR Part 63, Subpart ZZZZ as required by NSR Permit 8349.	3/23/2021
ENG3	Initial compliance test in accordance with 40 CFR Part 60, Subpart JJJJ and 40 CFR Part 63, Subpart ZZZZ as required by NSR Permit 8349.	10/7/2020
ENG3	Quarterly compliance test in accordance with 40 CFR Part 60, Subpart JJJJ and 40 CFR Part 63, Subpart ZZZZ as required by NSR Permit 8349.	3/24/2021
ENG10	Initial compliance test in accordance with 40 CFR Part 60, Subpart JJJJ and 40 CFR Part 63, Subpart ZZZZ as required by NSR Permit 8349.	10/8/2020
ENG10	Quarterly compliance test in accordance with 40 CFR Part 60, Subpart JJJJ and 40 CFR Part 63, Subpart ZZZZ as required by NSR Permit 8349.	3/22/2021

Section 18

Addendum for Streamline Applications

Do not print this section unless this is a streamline application.

Streamline Applications do not require a complete application. Submit Sections 1-A, 1-B, 1-D, 1-F, 1-G, 2-A, 2-C thru L, Sections 3 thru 8, Section 13, Section 18, Section 22, and Section 23 (Certification). Other sections may be required at the discretion of the Department. 20.2.72.202 NMAC Exemptions do not apply to Streamline sources. 20.2.72.219 NMAC revisions and modifications do not apply to Streamline sources, thus 20.2.72.219 type actions require a complete new application submittal. Please do not print sections of a streamline application that are not required.

Not applicable

Section 19

Requirements for Title V Program

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

Who Must Use this Attachment:

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

To save paper and to standardize the application format, delete this sentence, and begin your submittal for this item here.

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

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

The Longhorn Compressor Station is not subject to 40 CFR, Part 64, Compliance Assurance Monitoring (CAM); therefore, a monitoring protocol is not required with this application.

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

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

XTO Energy Inc. believes that Longhorn Compressor Station is in compliance with each applicable requirement identified in Section 19.2. This belief was formed after reasonable inquiry. In the event that XTO Energy Inc. should discover new information affecting the compliance status of the facility, XTO Energy Inc. will make appropriate notification and/or take corrective action.

As required under 20.2.70.300.D(10)(a)(i) NMAC for first time Operating Permit applicants, compliance with the federal and New Mexico Ambient Air Quality Standards and the applicable PSD increments has been demonstrated with the modeling submitted with the application for a permit under 20.2.72 NMAC.

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

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

The Longhorn Compressor Station will continue to be in compliance with applicable requirements for which it is in compliance at the time of this permit application. In addition, the station will, in a timely manner or consistent with such schedule expressly required by the applicable requirement, comply with other applicable requirements as they come into effect during the permit term.

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

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

The submittal of compliance certifications during the five-year term of the operating permit will occur annually.

19.5 - Stratospheric Ozone and Climate Protection

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

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

The station does not produce, manufacture, transform, destroy, import, or export any stratospheric ozone-depleting substances (CFCs, HCFCs); does not maintain or service motor vehicle air conditioning units or refrigeration equipment; and does not sell, distribute, or offer for sale any product that may contain stratospheric ozone-depleting substances.

XTO Energy Inc. shall continue to maintain compliance with the conditions stipulated in 40 CFR 82, Subparts A-G of the Stratospheric Ozone Protection Program (Title VI of the Clean Air Act Amendments).

19.6 - Compliance Plan and Schedule

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

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

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

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

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

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

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

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

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

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

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

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

The Longhorn Compressor Station is in compliance with all applicable requirements; consequently, a compliance plan, a compliance schedule, and a schedule of certified progress reports is not required.

The Longhorn Compressor Station is not equipped with any acid rain sources; consequently, compliance with the acid rain provisions is not required as a part of this permit application.

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

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

The Longhorn Compressor Station is not subject to 40 CFR 68, Chemical Accident Prevention Provisions; consequently, a Risk Management Plan is not required.

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

Will the property on which the facility is proposed to be constructed or operated be closer than 80 km (50 miles) from other states, local pollution control programs, and Indian tribes and pueblos (20.2.70.402.A.2 and 20.2.70.7.B NMAC)?

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

No, the property on which the station is constructed and operated on is not closer than 80 km (50 miles) from other states, local pollution control programs and Indian tribes and pueblos.

19.9 - Responsible Official

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

The Responsible Official for the Bulldog Compressor Station is Richard Cannon, Production Manager - NM Delaware Basin.

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.

No other relevant information is provided.

Section 21

Addendum for Landfill Applications

Do not print this section unless this is a landfill application.

Landfill Applications are not required to complete Sections 1-C Input Capacity and Production Rate, 1-E Operating Schedule, 17 Compliance Test History, and 18 Streamline Applications. Section 12 – PSD Applicability is required only for Landfills with Gas Collection and Control Systems and/or landfills with other non-fugitive stationary sources of air emissions such as engines, turbines, boilers, heaters. All other Sections of the Universal Application Form are required.

EPA Background Information for MSW Landfill Air Quality Regulations:

<https://www3.epa.gov/airtoxics/landfill/landflpg.html>

NM Solid Waste Bureau Website: <https://www.env.nm.gov/swb/>

Not applicable.

Section 22: Certification

Company Name: XTO Energy Inc.

I, Richard Cannon, 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 1 day of SEPT., 2021, upon my oath or affirmation, before a notary of the State of

NEW MEXICO.

[Signature]
*Signature

Sept. 1, 2021
Date

Richard Cannon
Printed Name

Production Manager – NM Delaware Basin
Title

Scribed and sworn before me on this 1 day of September, 2021

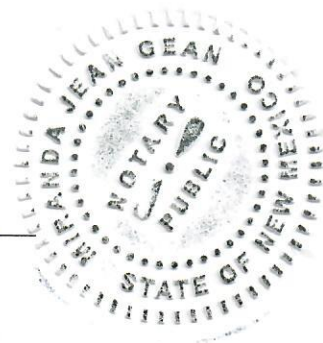
My authorization as a notary of the State of New Mexico expires on the

4 day of September, 2022.

[Signature]
Notary's Signature

9/1/21
Date

Miranda Jean Gean
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.