



May 31, 2022

UPS Tracking #1Z1AE0570200230642

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: **Initial Title V Operating Permit Application (Update)**  
**Spartan Compressor Station**  
**Agency Interest No. 38274**  
**XTO Energy Inc.**

Dear Ms. Olson,

XTO Energy Inc. is submitting this updated initial Title V Operating Permit application for the Maverick Compressor Station. The Maverick Compressor Station is currently authorized under NSR Permit No. 7681-M2. The electronic files will be provided via email or secure file transfer.

If you have any questions concerning this application, please contact me at 346-259-5873 or at [james.barron@exxonmobil.com](mailto:james.barron@exxonmobil.com).

Sincerely,

A handwritten signature in black ink that reads 'Brett Zogas'.

Brett Zogas on behalf of James Barron  
Environmental & Regulatory Advisor  
XTO Energy Inc.

cc: Joe Landry, Environmental Advisor—Air Quality, XTO Energy, Inc.  
Brett Zogas, Managing Consultant, Trinity Consultants, Inc.

Enclosures

**SPARTAN COMPRESSOR STATION**  
**Eddy County, NM**  
**Initial Title V Operating Permit Application (Update)**



**PREPARED BY:**  
**JAMES BARRON**  
**ENVIRONMENTAL & REGULATORY ADVISOR**  
**XTO ENERGY INC.**  
**5/24/2022**

**SPARTAN COMPRESSOR STATION**  
**Initial Title V Operating Permit Application (Update)**

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**Tab 1**

**UA1 Form - Company and Facility Information**

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

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

Use this application for: the initial application, modifications, technical revisions, and renewals. For technical revisions, complete Sections, 1-A, 1-B, 2-E, 3, 9 and any other sections that are relevant to the requested action; coordination with the Air Quality Bureau permit staff prior to submittal is encouraged to clarify submittal requirements and to determine if more or less than these sections of the application are needed. Use this application for streamline permits as well. See Section 1-1 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.: **XX** in the amount of \$500

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

This facility qualifies to receive assistance from the Small Business Environmental Assistance program (SBEAP) and qualifies for 50% of the normal application and permit fees. Enclosed is a check for 50% of the normal application fee which will be verified with the Small Business Certification Form for your company.

This facility qualifies to receive assistance from the Small Business Environmental Assistance Program (SBEAP) but does not qualify for 50% of the normal application and permit fees. To see if you qualify for SBEAP assistance and for the small business certification form go to [https://www.env.nm.gov/aqb/sbap/small\\_business\\_criteria.html](https://www.env.nm.gov/aqb/sbap/small_business_criteria.html) ).

**Citation:** Please provide the **low level citation** under which this application is being submitted: **20.2.70.200.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

<p><b>Section 1-A: Company Information</b></p>		AI # if known (see 1 <sup>st</sup> 3 to 5 #s of permit IDEA ID No.): 38274	Updating Permit/NOI #:
1	Facility Name: Spartan Compressor Station	Plant primary SIC Code (4 digits): 1311 Plant NAIC code (6 digits): 211120	
a	Facility Street Address (If no facility street address, provide directions from a prominent landmark): See 1-D.4.		
2	Plant Operator Company Name: XTO Energy Inc.	Phone/Fax: (346) 259-5873	
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 Operator Company Name: XTO Energy Inc.	Phone/Fax: (346) 259-5873
a	Plant Owner(s) Mailing Address(s): 22777 Springwoods Village Parkway, Spring, TX 77389	
4	Bill To (Company): XTO Energy Inc.	Phone/Fax: (346) 259-5873
a	Mailing Address: 22777 Springwoods Village Parkway, Spring, TX 77389	E-mail: james.barron@exxonmobil.com
5	<input checked="" type="checkbox"/> Preparer: Brett Zogas <input checked="" type="checkbox"/> Consultant: Trinity Consultants, Inc.	Phone/Fax: (512) 826-6435
a	Mailing Address: 1800 W Loop S., Ste. 1000, Houston, TX 77027	E-mail: brett.zogas@trinityconsultants.com
6	Plant Operator Contact: James Barron	Phone/Fax: (346) 259-5873
a	Mailing Address: 22777 Springwoods Village Parkway, Spring, TX 77389	E-mail: james.barron@exxonmobil.com
7	Air Permit Contact: James Barron	Title: Environmental Advisor & Regulatory Advisor
a	E-mail: james.barron@exxonmobil.com	Phone/Fax: (346) 259-5873
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? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.b If yes to question 1.a, is it currently operating in New Mexico? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2	If yes to question 1.a, was the existing facility subject to a Notice of Intent (NOI) (20.2.73 NMAC) before submittal of this application? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes to question 1.a, was the existing facility subject to a construction permit (20.2.72 NMAC) before submittal of this application? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3	Is the facility currently shut down? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, give month and year of shut down (MM/YY):
4	Was this facility constructed before 8/31/1972 and continuously operated since 1972? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5	If Yes to question 3, has this facility been modified (see 20.2.72.7.P NMAC) or the capacity increased since 8/31/1972? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
6	Does this facility have a Title V operating permit (20.2.70 NMAC)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, the permit No. is: P-
7	Has this facility been issued a No Permit Required (NPR)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, the NPR No. is:
8	Has this facility been issued a Notice of Intent (NOI)? <input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, the NOI No. is:
9	Does this facility have a construction permit (20.2.72/20.2.74 NMAC)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, the permit No. is: 7681-M2
10	Is this facility registered under a General permit (GCP-1, GCP-2, etc.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, the register No. is:

### 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: 76.5 barrels; 10 MMscf	Daily: 1,836 barrels; 240 MMscf	Annually: 670,115 barrels; 87.6 Bscf
b	Proposed	Hourly: 76.5 barrels; 10 MMscf	Daily: 1,836 barrels; 240 MMscf	Annually: 670,115 barrels; 87.6 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: 76.5 barrels; 10 MMscf	Daily: 1,836 barrels; 240 MMscf	Annually: 670,115 barrels; 87.6 Bscf
b	Proposed	Hourly: 76.5 barrels; 10 MMscf	Daily: 1,836 barrels; 240 MMscf	Annually: 670,115 barrels; 87.6 Bscf

**Section 1-D: Facility Location Information**

1	Section: 24	Range: 30E	Township: 24S	County: Eddy	Elevation (ft): 3434
2	UTM Zone: <input type="checkbox"/> 12 or <input checked="" type="checkbox"/> 13			Datum: <input type="checkbox"/> NAD 27 <input type="checkbox"/> NAD 83 <input checked="" type="checkbox"/> WGS 84	
a	UTM E (in meters, to nearest 10 meters): 609512			UTM N (in meters, to nearest 10 meters): 3563566	
b	<b>AND</b> Latitude (deg., min., sec.): 32° 12' 12"			Longitude (deg., min., sec.): -103° 50' 17"	
3	Name and zip code of nearest New Mexico town: Malaga - 88263				
4	Detailed Driving Instructions from nearest NM town: Drive N on US 285 for 5.4 mi. to R on Carter Rd./8th St. Go 1.2 mi. to R on NM-31. Go 6.5 mi. to R on NM-128. Go 12.8 mi. to R on Twin Wells Rd. Go 4.7 mi. to L into site.				
5	The facility is 13.5 miles E of Malaga				
6	Status of land at facility (check one): <input type="checkbox"/> Private <input type="checkbox"/> Indian/Pueblo <input checked="" type="checkbox"/> Federal BLM <input type="checkbox"/> Federal Forest Service <input type="checkbox"/> Other (specify)				
7	List all municipalities, Indian tribes, and counties within a ten (10) mile radius (20.2.72.203.B.2 NMAC) of the property on which the facility is proposed to be constructed or operated: Eddy County				
8	<b>20.2.72 NMAC applications only:</b> 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 <a href="http://www.env.nm.gov/aqb/modeling/class1areas.html">www.env.nm.gov/aqb/modeling/class1areas.html</a> )? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (20.2.72.206.A.7 NMAC) If yes, list all with corresponding distances in kilometers: Texas - 13				
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): 44.44				
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? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No A portable stationary source is not a mobile source, such as an automobile, but a source that can be installed permanently at one location or that can be re-installed at various locations, such as a hot mix asphalt plant that is moved to different job sites.				
14	Will this facility operate in conjunction with other air regulated parties on the same property? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, what is the name and permit number (if known) of the other facility?				

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

1	Facility <b>maximum</b> 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:		<input type="checkbox"/> AM <input type="checkbox"/> PM	End: <input type="checkbox"/> AM <input type="checkbox"/> PM
3	Month and year of anticipated start of construction: Already started			
4	Month and year of anticipated construction completion: Facility Completed Construction 12/2020			
5	Month and year of anticipated startup of new or modified facility: Facility Commenced Operation 12/2020			
6	Will this facility operate at this site for more than one year? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			

**Section 1-F: Other Facility Information**

1	Are there any current Notice of Violations (NOV), compliance orders, or any other compliance or enforcement issues related to this facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, specify:
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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? <input type="checkbox"/> Yes <input type="checkbox"/> 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? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
3	Does this facility require an "Air Toxics" permit under 20.2.72.400 NMAC & 20.2.72.502, Tables A and/or B? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
4	Will this facility be a source of federal Hazardous Air Pollutants (HAP)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
a	If Yes, what type of source? <input checked="" type="checkbox"/> Major ( <input checked="" type="checkbox"/> ≥10 tpy of any single HAP OR <input checked="" type="checkbox"/> ≥25 tpy of any combination of HAPS) OR <input type="checkbox"/> Minor ( <input type="checkbox"/> <10 tpy of any single HAP AND <input type="checkbox"/> <25 tpy of any combination of HAPS)	
5	Is any unit exempt under 20.2.72.202.B.3 NMAC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
a	If yes, include the name of company providing commercial electric power to the facility: _____ Commercial power is purchased from a commercial utility company, which specifically does not include power generated on site for the sole purpose of the user.	

**Section 1-G: Streamline Application**

(This section applies to 20.2.72.300 NMAC Streamline applications only)

1	<input type="checkbox"/> I have filled out Section 18, "Addendum for Streamline Applications." <input checked="" type="checkbox"/> N/A (This is not a Streamline application.)
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**Section 1-H: Current Title V Information - Required for all applications from TV Sources**

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

1	Responsible Official (R.O.) (20.2.70.300.D.2 NMAC): David Scott	Phone: (832) 625-8746
a	R.O. Title: General Manager Permian Delaware BU	R.O. e-mail: david.r.scott@exxonmobil.com
b	R. O. Address: 22777 Springwoods Village Parkway, Spring, TX 77389	
2	Alternate Responsible Official (20.2.70.300.D.2 NMAC): Rick Cannon	Phone: (575) 988-7138
a	A. R.O. Title: Production Manager, Delaware Basin BU	A. R.O. e-mail: rick.e.cannon@exxonmobil.com
b	A. R. O. Address: 3194 E Greene St., Carlsbad, NM 88220	
3	Company's Corporate or Partnership Relationship to any other Air Quality Permittee (List the names of any companies that have operating (20.2.70 NMAC) permits and with whom the applicant for this permit has a corporate or partnership relationship):	
4	Name of Parent Company ("Parent Company" means the primary name of the organization that owns the company to be permitted wholly or in part.): ExxonMobil	
a	Address of Parent Company: 22777 Springwoods 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.): XTO Energy, Inc.	
6	Telephone numbers & names of the owners' agents and site contacts familiar with plant operations: See Section 1-A.6 and 7	
7	Affected Programs to include Other States, local air pollution control programs (i.e. Bernalillo) and Indian tribes: Will the property on which the facility is proposed to be constructed or operated be closer than 80 km (50 miles) from other states, local pollution control programs, and Indian tribes and pueblos (20.2.70.402.A.2 and 20.2.70.7.B)? If yes, state which ones and provide the distances in kilometers: Texas (13.0 kilometers)	



## Section 1-I – Submittal Requirements

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

### Hard Copy Submittal Requirements:

- 1) One hard copy **original signed and notarized application package printed double sided ‘head-to-toe’ 2-hole punched** as we bind the document on top, not on the side; except Section 2 (landscape tables), which should be **head-to-head**. Please use **numbered tab separators** in the hard copy submittal(s) as this facilitates the review process. For NOI submittals only, hard copies of UA1, Tables 2A, 2D & 2F, Section 3 and the signed Certification Page are required. **Please include a copy of the check on a separate page.**
- 2) If the application is for a minor NSR, PSD, NNSR, or Title V application, include one working hard **copy** for Department use. This **copy** should be printed in book form, 3-hole punched, and **must be double sided**. Note that this is in addition to the head-to-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 James Barron

Email james.barron@exxonmobil.com

Phone number (346) 259-5873

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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<b>Section 18:</b>	<b>Addendum for Streamline Applications (streamline applications only)</b>
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<b>Section 22:</b>	<b>Certification Page</b>

**Tab 2**  
**UA2 Form - Application Tables**

**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 <sup>1</sup>	Source Description	Make	Model #	Serial #	Manufacturer's Rated Capacity <sup>3</sup> (Specify Units)	Requested Permitted Capacity <sup>3</sup> (Specify Units)	Date of Manufacture <sup>2</sup>	Controlled by Unit #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB) <sup>4</sup>	Replacing Unit No.
							Date of Construction/Reconstruction <sup>2</sup>	Emissions vented to Stack #				
ENG1	Natural Gas Compressor Engine	Caterpillar	G3616	ZZY00909	5000	5000	1/1/2019	ENG1	20200254	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	4SLB	N/A
							1/1/2019	CAT1				
ENG2	Natural Gas Compressor Engine	Caterpillar	G3616	ZZY00830	5000	5000	12/1/2019	ENG2	20200254	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	4SLB	N/A
							12/1/2019	CAT2				
ENG3	Natural Gas Compressor Engine	Caterpillar	G3616	ZZY00831	5000	5000	1/1/2019	ENG3	20200254	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	4SLB	N/A
							1/1/2019	CAT3				
ENG4	Natural Gas Compressor Engine	Caterpillar	G3616	ZZY00853	5000	5000	2/1/2019	ENG4	20200254	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	4SLB	N/A
							2/1/2019	CAT4				
ENG5	Natural Gas Compressor Engine	Caterpillar	G3616	ZZY00916	5000	5000	1/1/2019	ENG5	20200254	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	4SLB	N/A
							1/1/2019	CAT5				
ENG6	Natural Gas Compressor Engine	Caterpillar	G3616	ZZY00908	5000	5000	11/1/2018	ENG6	20200254	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	4SLB	N/A
							11/1/2018	CAT6				
ENG7	Natural Gas Compressor Engine	Caterpillar	G3616	TBD	5000	5000	TBD	ENG7	20200254	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	4SLB	N/A
							TBD	CAT7				
ENG8	Natural Gas Compressor Engine	Caterpillar	G3616	TBD	5000	5000	TBD	ENG8	20200254	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	4SLB	N/A
							TBD	CAT8				
ENG9	Natural Gas Compressor Engine	Caterpillar	G3616	TBD	5000	5000	TBD	ENG9	20200254	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	4SLB	N/A
							TBD	CAT9				
ENG11	Natural Gas Compressor Engine	Caterpillar	3516J TA	N6W01211	1380	1380	11/1/2018	ENG11	20200254	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	4SLB	N/A
							11/1/2018	CAT11				
ENG12	Natural Gas Compressor Engine	Caterpillar	3516J TA	N6W01043	1380	1380	10/1/2018	ENG12	20200254	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	4SLB	N/A
							10/1/2018	CAT12				
ENG10	Natural Gas Compressor Engine	Caterpillar	G3606TA	TBD	1775	1775	TBD	ENG10	20200254	<input type="checkbox"/> Existing (unchanged) <input checked="" type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	4SLB	N/A
							TBD	CAT10				
ENG13	Natural Gas Compressor Engine	Caterpillar	G3306TA	TBD	203	203	TBD	ENG13	20200254	<input type="checkbox"/> Existing (unchanged) <input checked="" type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	4SRB	N/A
							TBD	CAT13				
HTR1	Fuel Line Heater	TBD	TBD	11831	0.75 MMBtu/hr	0.75 MMBtu/hr	2019	N/A	31000228	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							2019	HTR1				
RB1	Glycol Regenerator Reboiler	TBD	TBD	18-8806D-4	2.0 MMBtu/hr	2.0 MMBtu/hr	2018	N/A	31000404	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							2018	RB1				
RB2	Glycol Regenerator Reboiler	TBD	TBD	19-8825C-6	2.0 MMBtu/hr	2.0 MMBtu/hr	2019	N/A	31000404	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							2019	RB2				
RB3	Glycol Regenerator Reboiler	TBD	TBD	TBD	2.0 MMBtu/hr	2.0 MMBtu/hr	TBD	N/A	31000404	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							TBD	RB3				
HTR2	Fuel Line Heater	N/A	N/A	N/A	0.75 MMBtu/hr	0.75 MMBtu/hr	TBD	N/A	31000228	<input type="checkbox"/> Existing (unchanged) <input checked="" type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							N/A	HTR2				
HTR3	Fuel Line Heater	N/A	N/A	N/A	1.5 MMBtu/hr	1.5 MMBtu/hr	TBD	N/A	31000228	<input type="checkbox"/> Existing (unchanged) <input checked="" type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							N/A	HTR3				

Unit Number <sup>1</sup>	Source Description	Make	Model #	Serial #	Manufacturer's Rated Capacity <sup>3</sup> (Specify Units)	Requested Permitted Capacity <sup>3</sup> (Specify Units)	Date of Manufacture <sup>2</sup>	Controlled by Unit #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB) <sup>4</sup>	Replacing Unit No.
							Date of Construction/Reconstruction <sup>2</sup>	Emissions vented to Stack #				
FL1	Flare 1	Tornado	TBD	14718/17059	70 MMscf/d	70 MMscf/d	2019	N/A	31000205	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							2019	FL1				
FL2	Flare 2	Tornado	TBD	14740/17094	70 MMscf/d	70 MMscf/d	2019	N/A	31000205	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							2019	FL2				
FL3	Flare 3	Tornado	TBD	TBD	70 MMscf/d	70 MMscf/d	TBD	N/A	31000205	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							TBD	FL3				
SKT1	Skim Tank	Palmer	TK-5051	ST1942066	1000 bbl	1000 bbl	2019	FL1-FL3	40400315	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							2019	FL1-FL3				
SKT2	Skim Tank (Backup)	TBD	TBD	TBD	1000 bbl	1000 bbl	TBD	FL1-FL3	40400315	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							TBD	FL1-FL3				
OT1	Condensate Tank	Palmer	TK-5053	ST1942070	500 bbl	500 bbl	2019	FL1-FL3	40400311	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							2019	FL1-FL3				
OT2	Condensate Tank	Palmer	TK-5054	ST19422071	500 bbl	500 bbl	2019	FL1-FL3	40400311	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							2019	FL1-FL3				
OT3	Condensate Tank	Palmer	TK-5063	ST1942068	500 bbl	500 bbl	2019	FL1-FL3	40400311	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							2019	FL1-FL3				
OT4	Condensate Tank	Palmer	TK-5064	ST1942069	500 bbl	500 bbl	2019	FL1-FL3	40400311	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							2019	FL1-FL3				
WT1	Produced Water Tank	Palmer	TK-5052	ST1942067	500 bbl	500 bbl	2019	FL1-FL3	40400315	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							2019	FL1-FL3				
WT2	Produced Water Tank	Palmer	TK-5062	ST19422072	500 bbl	500 bbl	2019	FL1-FL3	40400315	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							2019	FL1-FL3				
VRU1	Low Pressure Separator VRU #1	TBD	NA	NA	125 HP	125 HP	2019	FL1-FL2	N/A	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							2019	FL1-FL3				
VRU2	Low Pressure Separator VRU Backup	TBD	NA	NA	125 HP	125 HP	2019	FL1-FL2	N/A	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							2019	FL1-FL3				
DEHY1	TEG Dehydrator with Condenser	TBD	TBD	CLB19-128	80 MMscfd	80 MMscfd	2019	COND1	31000227	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							2019	FL1-FL3				
DEHY2	TEG Dehydrator with Condenser	TBD	TBD	CLB19-126	80 MMscfd	80 MMscfd	TBD	COND2	31000227	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							TBD	FL1-FL3				
DEHY3	TEG Dehydrator with Condenser	TBD	TBD	TBD	80 MMscfd	80 MMscfd	TBD	COND3	31000227	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							TBD	FL1-FL3				
LPS	Low Pressure Separator	TBD	TBD	19-007	N/A	N/A	2019	FL1-FL3	N/A	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							2019	FL1-FL3				
LOAD	Condensate Truck Loading	N/A	N/A	N/A	1836 bbl/d	1836 bbl/d	N/A	N/A	40400250	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							N/A	N/A				
LOAD2	Water Truck Loading	N/A	N/A	N/A	521 bbl/d	521 bbl/d	N/A	N/A	40400250	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input checked="" type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							N/A	N/A				
FUG	Fugitive Emissions	N/A	N/A	N/A	N/A	N/A	N/A	N/A	31088811	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							N/A	N/A				
SSM	SSM Activities	N/A	N/A	N/A	N/A	N/A	N/A	N/A	31088811	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input checked="" type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							N/A	N/A				
Malfunction	Malfunction Emissions	N/A	N/A	N/A	N/A	N/A	N/A	N/A	31088811	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input checked="" type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							N/A	N/A				

<sup>1</sup> 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.

<sup>2</sup> Specify dates required to determine regulatory applicability.

<sup>3</sup> 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.

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

**Table 2-B: Insignificant Activities<sup>1</sup> (20.2.70 NMAC) OR Exempted Equipment (20.2.72 NMAC)**

All 20.2.70 NMAC (Title V) applications must list all Insignificant Activities in this table. All 20.2.72 NMAC applications must list Exempted Equipment in this table. If equipment listed on this table is exempt under 20.2.72.202.B.5, include emissions calculations and emissions totals for 202.B.5 "similar functions" units, operations, and activities in Section 6, Calculations. Equipment and activities exempted under 20.2.72.202 NMAC may not necessarily be Insignificant under 20.2.70 NMAC (and vice versa). Unit & stack numbering must be consistent throughout the application package. Per Exemptions Policy 02-012.00 (see [http://www.env.nm.gov/aqb/permit/aqb\\_pol.html](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 <sup>2</sup>	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 <sup>2</sup>	
ROAD	Haul Road Emissions	N/A	N/A	N/A	20.2.72.202.B.5	N/A	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			N/A	N/A	20.2.72.202.B.5	N/A	
							<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
							<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
							<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
							<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
							<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
							<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
							<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
							<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
							<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
							<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
							<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
							<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced

<sup>1</sup> 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.

<sup>2</sup> 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.

Control Equipment Unit No.	Control Equipment Description	Date Installed	Controlled Pollutant(s)	Controlling Emissions for Unit Number(s) <sup>1</sup>	Efficiency (% Control by Weight)	Method used to Estimate Efficiency
FL1	Flare 1	2020	VOC, HAP	Facility Inlet, OT1-OT4, WT1-WT2, SKTK1/SKTK2, LPS, DEHY1-3	98	Engineering Est.
FL2	Flare 2	2020	VOC, HAP	Facility Inlet, OT1-OT4, WT1-WT2, SKTK1/SKTK2, LPS, DEHY1-3	98	Engineering Est.
FL3	Flare 3	TBD	VOC, HAP	Facility Inlet, OT1-OT4, WT1-WT2, SKTK1/SKTK2, LPS, DEHY1-3	98	Engineering Est.
VRU1	Low Pressure Separator VRU #1	2019	VOC, HAPs	LPS	98	Engineering Est.
VRU2	Low Pressure Separator VRU Backup	2019	VOC, HAPs	LPS	98	Engineering Est.
COND1-COND3	BTEX Condenser	2019	VOC, HAP	DEHY1-DEHY3	98	Engineering Est.
CAT1-CAT6, CAT11-12	Engine Catalysts	2019	CO, VOC, HAP	ENG1-6, ENG11-12	CO-87, VOC-65, HAP-74	Engineering Est.
CAT7-CAT9	Engine Catalysts	TBD	CO, VOC, HAP	ENG7-9	CO-90, VOC-48, HAP-90	Engineering Est.

<sup>1</sup> 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 <sub>x</sub>		CO		VOC		SO <sub>x</sub>		PM <sup>1</sup>		PM <sub>10</sub> <sup>1</sup>		PM <sub>2.5</sub> <sup>1</sup>		H <sub>2</sub> 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	38.25	167.53	11.23	49.17	0.48	2.09	0.38	1.65	0.38	1.65	0.38	1.65	-	-	-	-
ENG2	4.13	18.11	38.25	167.53	11.23	49.17	0.48	2.09	0.38	1.65	0.38	1.65	0.38	1.65	-	-	-	-
ENG3	4.13	18.11	38.25	167.53	11.23	49.17	0.48	2.09	0.38	1.65	0.38	1.65	0.38	1.65	-	-	-	-
ENG4	4.13	18.11	38.25	167.53	11.23	49.17	0.48	2.09	0.38	1.65	0.38	1.65	0.38	1.65	-	-	-	-
ENG5	4.13	18.11	38.25	167.53	11.23	49.17	0.48	2.09	0.38	1.65	0.38	1.65	0.38	1.65	-	-	-	-
ENG6	4.13	18.11	38.25	167.53	11.23	49.17	0.48	2.09	0.38	1.65	0.38	1.65	0.38	1.65	-	-	-	-
ENG7	4.13	18.11	29.21	127.94	3.84	16.80	0.48	2.10	0.38	1.65	0.38	1.65	0.38	1.65	-	-	-	-
ENG8	4.13	18.11	29.21	127.94	3.84	16.80	0.48	2.10	0.38	1.65	0.38	1.65	0.38	1.65	-	-	-	-
ENG9	4.13	18.11	29.21	127.94	3.84	16.80	0.48	2.10	0.38	1.65	0.38	1.65	0.38	1.65	-	-	-	-
ENG11	1.90	8.33	7.91	34.65	4.35	19.06	0.14	0.61	0.11	0.48	0.11	0.48	0.11	0.48	-	-	-	-
ENG12	1.90	8.33	7.91	34.65	4.35	19.06	0.14	0.61	0.11	0.48	0.11	0.48	0.11	0.48	-	-	-	-
HTR1	0.10	0.44	0.08	0.37	0.01	0.02	0.01	0.05	0.01	0.03	0.01	0.03	0.01	0.03	-	-	-	-
RB1	0.27	1.18	0.23	0.99	0.01	0.06	0.03	0.13	0.02	0.09	0.02	0.09	0.02	0.09	-	-	-	-
RB2	0.27	1.18	0.23	0.99	0.01	0.06	0.03	0.13	0.02	0.09	0.02	0.09	0.02	0.09	-	-	-	-
RB3	0.27	1.18	0.23	0.99	0.01	0.06	0.03	0.13	0.02	0.09	0.02	0.09	0.02	0.09	-	-	-	-
FL1-FL3 Pilot	1.42	6.20	2.83	12.39	1.93	8.47	0.02	0.07	0.07	0.31	0.07	0.31	0.07	0.31	-	-	-	-
FL1-FL3 Norm	Emissions are not routed to flare in uncontrolled scenario.																	
FL1-FL3 SSM	Emissions are not routed to flare in uncontrolled scenario.																	
SKT1	-	-	-	-	8.53	29.29	-	-	-	-	-	-	-	-	-	-	-	-
SKT2	-	-	-	-	8.53	29.29	-	-	-	-	-	-	-	-	-	-	-	-
OT1	-	-	-	-	147.27	290.80	-	-	-	-	-	-	-	-	-	-	-	-
OT2	-	-	-	-	147.27	290.80	-	-	-	-	-	-	-	-	-	-	-	-
OT3	-	-	-	-	147.27	290.80	-	-	-	-	-	-	-	-	-	-	-	-
OT4	-	-	-	-	147.27	290.80	-	-	-	-	-	-	-	-	-	-	-	-
WT1	-	-	-	-	0.15	0.66	-	-	-	-	-	-	-	-	-	-	-	-
WT2	-	-	-	-	0.15	0.66	-	-	-	-	-	-	-	-	-	-	-	-
DEHY1	-	-	-	-	65.21	130.90	-	-	-	-	-	-	-	-	-	-	-	-
DEHY2	-	-	-	-	65.21	130.90	-	-	-	-	-	-	-	-	-	-	-	-
DEHY3	-	-	-	-	65.21	130.90	-	-	-	-	-	-	-	-	-	-	-	-
LPS	-	-	-	-	706.29	357.88	-	-	-	-	-	-	-	-	-	-	-	-
LOAD	-	-	-	-	63.91	10.14	-	-	-	-	-	-	-	-	-	-	-	-
LOAD2	-	-	-	-	0.46	0.09	-	-	-	-	-	-	-	-	-	-	-	-
FUG	-	-	-	-	5.06	22.16	-	-	-	-	-	-	-	-	-	-	-	-
SSM	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	-	-
ROAD	-	-	-	-	-	-	-	-	0.15	0.03	0.15	0.03	0.15	0.03	-	-	-	-
MALFUNCTION	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	-	-
<b>Totals</b>	<b>43.33</b>	<b>189.78</b>	<b>336.54</b>	<b>1474.05</b>	<b>1667.30</b>	<b>2398.29</b>	<b>4.70</b>	<b>20.56</b>	<b>-</b>	<b>-</b>	<b>3.75</b>	<b>16.42</b>	<b>3.75</b>	<b>16.42</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

<sup>1</sup> **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<sup>4</sup>).

Unit No.	NO <sub>x</sub>		CO		VOC		SO <sub>x</sub>		PM <sup>1</sup>		PM <sub>10</sub> <sup>1</sup>		PM <sub>2.5</sub> <sup>1</sup>		H <sub>2</sub> 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	4.97	21.78	3.93	17.21	0.48	2.09	0.38	1.65	0.38	1.65	0.38	1.65	-	-	-	-
ENG2	4.13	18.11	4.97	21.78	3.93	17.21	0.48	2.09	0.38	1.65	0.38	1.65	0.38	1.65	-	-	-	-
ENG3	4.13	18.11	4.97	21.78	3.93	17.21	0.48	2.09	0.38	1.65	0.38	1.65	0.38	1.65	-	-	-	-
ENG4	4.13	18.11	4.97	21.78	3.93	17.21	0.48	2.09	0.38	1.65	0.38	1.65	0.38	1.65	-	-	-	-
ENG5	4.13	18.11	4.97	21.78	3.93	17.21	0.48	2.09	0.38	1.65	0.38	1.65	0.38	1.65	-	-	-	-
ENG6	4.13	18.11	4.97	21.78	3.93	17.21	0.48	2.09	0.38	1.65	0.38	1.65	0.38	1.65	-	-	-	-
ENG7	4.13	18.11	2.92	12.79	2.00	8.74	0.48	2.10	0.38	1.65	0.38	1.65	0.38	1.65	-	-	-	-
ENG8	4.13	18.11	2.92	12.79	2.00	8.74	0.48	2.10	0.38	1.65	0.38	1.65	0.38	1.65	-	-	-	-
ENG9	4.13	18.11	2.92	12.79	2.00	8.74	0.48	2.10	0.38	1.65	0.38	1.65	0.38	1.65	-	-	-	-
ENG11	1.90	8.33	1.03	4.50	1.43	6.25	0.14	0.61	0.11	0.48	0.11	0.48	0.11	0.48	-	-	-	-
ENG12	1.90	8.33	1.03	4.50	1.43	6.25	0.14	0.61	0.11	0.48	0.11	0.48	0.11	0.48	-	-	-	-
HTR1	0.10	0.44	0.08	0.37	0.01	0.02	0.01	0.05	0.01	0.03	0.01	0.03	0.01	0.03	-	-	-	-
RB1	0.27	1.18	0.23	0.99	0.01	0.06	0.03	0.13	0.02	0.09	0.02	0.09	0.02	0.09	-	-	-	-
RB2	0.27	1.18	0.23	0.99	0.01	0.06	0.03	0.13	0.02	0.09	0.02	0.09	0.02	0.09	-	-	-	-
RB3	0.27	1.18	0.23	0.99	0.01	0.06	0.03	0.13	0.02	0.09	0.02	0.09	0.02	0.09	-	-	-	-
FL1-FL3 Pilot	1.42	6.20	2.83	12.39	1.93	8.47	0.02	0.07	0.07	0.31	0.07	0.31	0.07	0.31	-	-	-	-
FL1-FL3 Norm	2.44	9.69	4.87	19.35	16.32	33.41	0.26	1.09	0.05	0.22	0.05	0.22	0.05	0.22	-	-	-	-
SKT1	Emissions Represented at FL1-FL3																	
SKT2	Emissions Represented at FL1-FL3																	
OT1	Emissions Represented at FL1-FL3																	
OT2	Emissions Represented at FL1-FL3																	
OT3	Emissions Represented at FL1-FL3																	
OT4	Emissions Represented at FL1-FL3																	
WT1	Emissions Represented at FL1-FL3																	
WT2	Emissions Represented at FL1-FL3																	
DEHY1	Emissions Represented at FL1-FL3																	
DEHY2	Emissions Represented at FL1-FL3																	
DEHY3	Emissions Represented at FL1-FL3																	
LPS	Emissions Represented at FL1-FL3																	
LOAD	-	-	-	-	63.91	10.14	-	-	-	-	-	-	-	-	-	-	-	-
LOAD2	-	-	-	-	0.46	0.09	-	-	-	-	-	-	-	-	-	-	-	-
FUG	-	-	-	-	5.06	22.16	-	-	-	-	-	-	-	-	-	-	-	-
ROAD	-	-	-	-	-	-	-	-	0.60	0.11	0.15	0.03	0.15	0.03	-	-	-	-
MALFUNCTION	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	-	-
<b>Totals</b>	<b>45.77</b>	<b>199.48</b>	<b>49.12</b>	<b>213.15</b>	<b>120.14</b>	<b>226.44</b>	<b>4.95</b>	<b>21.65</b>	<b>4.40</b>	<b>16.75</b>	<b>3.95</b>	<b>16.67</b>	<b>3.95</b>	<b>16.67</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

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

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

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

All applications for facilities that have emissions during routine or predictable startup, shutdown or scheduled maintenance (SSM)<sup>1</sup>, 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](https://www.env.nm.gov/aqb/permit/aqb_pol.html)) for more detailed instructions. Numbers shall be expressed to at least 2 decimal points (e.g. 0.41, 1.41, or 1.41E-4).

Unit No.	NO <sub>x</sub>		CO		VOC		SO <sub>x</sub>		PM <sup>1</sup>		PM <sub>10</sub> <sup>1</sup>		PM <sub>2.5</sub> <sup>1</sup>		H <sub>2</sub> 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
SSM	-	-	-	-	-	10.00												
FL1-FL3 SSM	478.28	14.34	954.82	28.62	858.52	29.57	5.08	0.19	22.33	0.65	22.33	0.65	22.33	0.65	-	-	-	-
DEHY1 SSM	0.19	0.03	0.39	0.06	19.56	1.34	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-
DEHY2 SSM	0.19	0.03	0.39	0.06	19.56	1.34	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-
DEHY3 SSM	0.19	0.03	0.39	0.06	19.56	1.34	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-
<b>Totals</b>	478.86	14.43	955.99	28.80	917.21	43.60	5.32	0.22	22.34	0.65	22.34	0.65	22.34	0.65				

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

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

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

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

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

Stack No.	Serving Unit Number(s) from Table 2-A	NO <sub>x</sub>		CO		VOC		SO <sub>x</sub>		PM		PM <sub>10</sub>		PM <sub>2.5</sub>		<input type="checkbox"/> H <sub>2</sub> S or <input type="checkbox"/> 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
<b>Totals:</b>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		

**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)			
ENG1	ENG1	V	No	32	722	523.58	Unknown	Unknown	83.04	2.83
ENG2	ENG2	V	No	32	722	523.58	Unknown	Unknown	83.04	2.83
ENG3	ENG3	V	No	32	722	523.58	Unknown	Unknown	83.04	2.83
ENG4	ENG4	V	No	32	722	523.58	Unknown	Unknown	83.04	2.83
ENG5	ENG5	V	No	32	722	523.58	Unknown	Unknown	83.04	2.83
ENG6	ENG6	V	No	32	722	523.58	Unknown	Unknown	83.04	2.83
ENG7	ENG7	V	No	32	809	520.70	Unknown	Unknown	82.59	2.83
ENG8	ENG8	V	No	32	809	520.70	Unknown	Unknown	82.59	2.83
ENG9	ENG9	V	No	32	809	520.70	Unknown	Unknown	82.59	2.83
ENG11	ENG11	V	No	20	848	120.53	Unknown	Unknown	153.47	1.00
ENG12	ENG12	V	No	20	848	120.53	Unknown	Unknown	153.47	1.00
HTR1	HTR1	V	No	15	1000	5.75	Unknown	Unknown	7.32	1.00
RB1	RB1	V	No	15	1000	15.32	Unknown	Unknown	8.67	1.50
RB2	RB2	V	No	15	1000	15.32	Unknown	Unknown	8.67	1.50
RB3	RB3	V	No	15	1000	15.32	Unknown	Unknown	8.67	1.50
FL1	FL1	V	No	145	1832	4686.97	Unknown	Unknown	65.60	2.21
FL2	FL2	V	No	145	1832	4686.97	Unknown	Unknown	65.60	2.21
FL3	FL3	V	No	145	1832	4686.97	Unknown	Unknown	65.60	2.21

**Table 2-1: Stack Exit and Fugitive Emission Rates for HAPs and TAPs**

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

Stack No.	Unit No.(s)	Total HAPs		Formaldehyde ☑ HAP or ☐ TAP		n-Hexane ☑ HAP or ☐ TAP		Benzene ☑ HAP or ☐ TAP		Acetaldehyde ☑ 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	0.63	2.74	0.5	2.3	-	-	-	-	0.1	0.5								
ENG2	ENG2	0.63	2.74	0.5	2.3	-	-	-	-	0.1	0.5								
ENG3	ENG3	0.63	2.74	0.5	2.3	-	-	-	-	0.1	0.5								
ENG4	ENG4	0.63	2.74	0.5	2.3	-	-	-	-	0.1	0.5								
ENG5	ENG5	0.63	2.74	0.5	2.3	-	-	-	-	0.1	0.5								
ENG6	ENG6	0.63	2.74	0.5	2.3	-	-	-	-	0.1	0.5								
ENG7	ENG7	0.32	1.39	0.2	0.7	-	-	-	-	0.2	0.7								
ENG8	ENG8	0.32	1.39	0.2	0.7	-	-	-	-	0.2	0.7								
ENG9	ENG9	0.32	1.39	0.2	0.7	-	-	-	-	0.2	0.7								
ENG11	ENG11	0.31	1.35	0.3	1.2	-	-	-	-	0.0	0.1								
ENG12	ENG12	0.31	1.35	0.3	1.2	-	-	-	-	0.0	0.1								
HTR1	HTR1	1.9E-03	0.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
RB1	RB1	0.01	0.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
RB1	RB2	0.01	0.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
RB1	RB3	0.01	0.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
FL1-FL3 Pilot	FL1-FL3 Pilot	0.03	0.12	-	-	0.027	0.116	0.001	0.005	-	-								
FL1-FL3 Norm	FL1-FL3 Norm	1.69	2.17	-	-	0.66	1.30	0.42	0.44	-	-								
FL1-FL3 SSM	FL1-FL3 SSM	32.05	1.15	-	-	28.65	1.01	1.18	0.05	-	-								
FL1-FL3	DEHY1	0.39	0.31	-	-	0.08	0.09	0.13	0.12	-	-								
FL1-FL3	DEHY2	0.39	0.31	-	-	0.08	0.09	0.13	0.12	-	-								
FL1-FL3	DEHY3	0.39	0.31	-	-	0.08	0.09	0.13	0.12	-	-								
RB1	DEHY1 SSM	5.83	0.16	-	-	1.25	0.05	1.91	0.06	-	-								
RB2	DEHY2 SSM	5.83	0.16	-	-	1.25	0.05	1.91	0.06	-	-								
RB3	DEHY3 SSM	5.83	0.16	-	-	1.25	0.05	1.91	0.06	-	-								

Stack No.	Unit No.(s)	Total HAPs		Formaldehyde <input checked="" type="checkbox"/> HAP or <input type="checkbox"/> TAP		n-Hexane <input checked="" type="checkbox"/> HAP or <input type="checkbox"/> TAP		Benzene <input checked="" type="checkbox"/> HAP or <input type="checkbox"/> TAP		Acetaldehyde <input checked="" type="checkbox"/> HAP or <input type="checkbox"/> TAP		Provide Pollutant Name Here <input type="checkbox"/> HAP or <input type="checkbox"/> TAP		Provide Pollutant Name Here <input type="checkbox"/> HAP or <input type="checkbox"/> TAP		Provide Pollutant Name Here <input type="checkbox"/> HAP or <input type="checkbox"/> TAP		Provide Pollutant Name Here <input type="checkbox"/> HAP or <input type="checkbox"/> 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
FL1-FL3	SKT1	Emissions Represented at FL1-FL3																	
FL1-FL3	SKT2	Emissions Represented at FL1-FL3																	
FL1-FL3	OT1	Emissions Represented at FL1-FL3																	
FL1-FL3	OT2	Emissions Represented at FL1-FL3																	
FL1-FL3	OT3	Emissions Represented at FL1-FL3																	
FL1-FL3	OT4	Emissions Represented at FL1-FL3																	
FL1-FL3	WT1	Emissions Represented at FL1-FL3																	
FL1-FL3	WT2	Emissions Represented at FL1-FL3																	
FL1-FL3	LPS	Emissions Represented at FL1-FL3																	
LOAD	LOAD	2.9	0.5	-	-	-	-	-	-	-	-								
LOAD2	LOAD2	1.5E-04	2.8E-05	-	-	-	-	-	-	-	-								
FUG	FUG	0.40	1.76	-	-	0.11	0.48	0.04	0.18	-	-								
SSM	SSM	-	-	-	-	-	-	-	-	-	-								
ROAD	ROAD	-	-	-	-	-	-	-	-	-	-								
<b>Totals:</b>		61.0	30.5	4.1	18.0	33.4	3.4	7.8	1.2	1.2	5.3								

**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 (btu/scf)	Hourly Usage (scf)	Annual Usage (mmscf)	% Sulfur	% Ash
ENG1	Natural Gas	Field Gas	1018	36745.0	321.89	Negligible	0
ENG2	Natural Gas	Field Gas	1018	36745.0	321.89	Negligible	0
ENG3	Natural Gas	Field Gas	1018	36745.0	321.89	Negligible	0
ENG4	Natural Gas	Field Gas	1018	36745.0	321.89	Negligible	0
ENG5	Natural Gas	Field Gas	1018	36745.0	321.89	Negligible	0
ENG6	Natural Gas	Field Gas	1018	36745.0	321.89	Negligible	0
ENG7	Natural Gas	Residue Gas	1018	36838.3	322.70	Negligible	0
ENG8	Natural Gas	Residue Gas	1018	36838.3	322.70	Negligible	0
ENG9	Natural Gas	Residue Gas	1018	36838.3	322.70	Negligible	0
ENG11	Natural Gas	Field Gas	1018	10793.7	94.55	Negligible	0
ENG12	Natural Gas	Field Gas	1018	10793.7	94.55	Negligible	0
HTR1	Natural Gas	Field Gas	1018	669.8	5.87	Negligible	0
RB1	Natural Gas	Field Gas	1018	1786.1	15.65	Negligible	0
RB2	Natural Gas	Field Gas	1018	1786.1	15.65	Negligible	0
RB3	Natural Gas	Field Gas	1018	1786.1	15.65	Negligible	0
FL1	Natural Gas	Field Gas	1018	3055.6	26.77	Negligible	0
FL2	Natural Gas	Field Gas	1018	3055.6	26.77	Negligible	0
FL3	Natural Gas	Field Gas	1018	3055.6	26.77	Negligible	0

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

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

Tank No.	SCC Code	Material Name	Composition	Liquid Density (lb/gal)	Vapor Molecular Weight (lb/lb*mol)	Average Storage Conditions		Max Storage Conditions	
						Temperature (°F)	True Vapor Pressure (psia)	Temperature (°F)	True Vapor Pressure (psia)
SKT1	40400315	Produced Water	Produced Water	8.2	51	76.86	11.27	86.16	12.88
SKT2	40400315	Produced Water	Produced Water	8.2	51	76.86	11.27	86.16	12.88
OT1	40400311	Condensate	Condensate	6.6	55	75.36	11.20	84.54	12.83
OT2	40400311	Condensate	Condensate	6.6	55	75.36	11.20	84.54	12.83
OT3	40400311	Condensate	Condensate	6.6	55	75.36	11.20	84.54	12.83
OT4	40400311	Condensate	Condensate	6.6	55	75.36	11.20	84.54	12.83
WT1	40400315	Produced Water	Produced Water	8.2	44	76.09	12.52	85.27	13.97
WT2	40400315	Produced Water	Produced Water	8.2	44	76.09	12.52	85.27	13.97



**Table 2-L: Tank Data**

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

Tank No.	Date Installed	Materials Stored	Seal Type (refer to Table 2-LR below)	Roof Type (refer to Table 2-LR below)	Capacity		Diameter (M)	Vapor Space (M)	Color (from Table VI-C)		Paint Condition (from Table VI-C)	Annual Throughput (gal/yr)	Turn-overs (per year)
					(bbl)	(M <sup>3</sup> )			Roof	Shell			
SKT1	Sep-20	Produced Water	N/A	FX	1000 bbl	159	4.75	9.1	Tan	Tan	Good	4,138,590	99
SKT2	TBD	Produced Water	N/A	FX	1000 bbl	159	4.75	9.1	Tan	Tan	Good	4,138,590	99
OT1	Sep-20	Condensate	N/A	FX	500 bbl	79.5	3.66	4.9	Tan	Tan	Good	7,036,208	335
OT2	Sep-20	Condensate	N/A	FX	500 bbl	79.5	3.66	4.9	Tan	Tan	Good	7,036,208	335
OT3	Sep-20	Condensate	N/A	FX	500 bbl	79.5	3.66	4.9	Tan	Tan	Good	7,036,208	335
OT4	Sep-20	Condensate	N/A	FX	500 bbl	79.5	3.66	4.9	Tan	Tan	Good	7,036,208	335
WT1	Sep-20	Produced Water	N/A	FX	500 bbl	79.5	3.66	4.9	Tan	Tan	Good	3,994,504	190
WT2	Sep-20	Produced Water	N/A	FX	500 bbl	79.5	3.66	4.9	Tan	Tan	Good	3,994,504	190

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

Note: 1.00 bbl = 0.159 M<sup>3</sup> = 42.0 gal

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

Material Processed				Material Produced			
Description	Chemical Composition	Phase (Gas, Liquid, or Solid)	Quantity (specify units)	Description	Chemical Composition	Phase	Quantity (specify units)
Mixed Hydrocarbons	Oil (BOPD)	Liquid	1836	Mixed Hydrocarbons	Oil (BOPD)	Liquid	1836
	Produced Water (BWPD)	Liquid	521		Produced Water (BWPD)	Liquid	521
	Natural Gas (MMSCFD)	Gas	240		Natural Gas (MMSCFD)	Gas	240

**Table 2-N: CEM Equipment**

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

Stack No.	Pollutant(s)	Manufacturer	Model No.	Serial No.	Sample Frequency	Averaging Time	Range	Sensitivity	Accuracy
N/A									

**Table 2-O: Parametric Emissions Measurement Equipment**

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

Unit No.	Parameter/Pollutant Measured	Location of Measurement	Unit of Measure	Acceptable Range	Frequency of Maintenance	Nature of Maintenance	Method of Recording	Averaging Time
N/A								

**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 CO<sub>2</sub>e emissions are less than 75,000 tons per year.

Unit No.	GWPs <sup>1</sup>	CO <sub>2</sub> ton/yr	N <sub>2</sub> O ton/yr	CH <sub>4</sub> ton/yr	SF <sub>6</sub> ton/yr	PFC/HFC ton/yr <sup>2</sup>										Total GHG Mass Basis ton/yr <sup>4</sup>	Total CO <sub>2</sub> e ton/yr <sup>5</sup>
		1	298	25	22,800	footnote 3											
ENG1	mass GHG	23802.25	0.04	0.36												23802.6	
	CO <sub>2</sub> e	23802.249	10.765362	9.0313437													23822.0
ENG2	mass GHG	23802.25	0.04	0.36												23802.6	
	CO <sub>2</sub> e	23802.25	10.77	9.03													23822.0
ENG3	mass GHG	23802.25	0.04	0.36												23802.6	
	CO <sub>2</sub> e	23802.249	10.765362	9.0313437													5000000.0
ENG4	mass GHG	23802.25	0.04	0.36												23802.6	
	CO <sub>2</sub> e	23802.25	10.77	9.03													23822.0
ENG5	mass GHG	23802.25	0.04	0.36												23802.6	
	CO <sub>2</sub> e	23802.249	10.765362	9.0313437													23822.0
ENG6	mass GHG	23802.25	0.04	0.36												23802.6	
	CO <sub>2</sub> e	23802.25	10.77	9.03													23822.0
ENG7	mass GHG	21581.35	0.04	0.36												21581.7	
	CO <sub>2</sub> e	21581.349	10.765362	9.0313437													21601.1
ENG8	mass GHG	21581.35	0.04	0.36												21581.7	
	CO <sub>2</sub> e	21581.35	10.77	9.03													21601.1
ENG9	mass GHG	21581.35	0.04	0.36												21581.7	
	CO <sub>2</sub> e	21581.349	10.765362	9.0313437													21601.1
ENG11	mass GHG	7062.46	0.01	0.11												7062.6	
	CO <sub>2</sub> e	7062.46	3.16	2.65													7068.3
ENG12	mass GHG	7062.46	0.01	0.11												7062.6	
	CO <sub>2</sub> e	7062.4603	3.1622793	2.6529189													7068.3
HTR1	mass GHG	566.96	0.00	0.39												567.3	
	CO <sub>2</sub> e	566.96	0.22	9.74													576.9
RB1	mass GHG	1511.89	0.00	1.04												1512.9	
	CO <sub>2</sub> e	1511.8853	0.5755123	25.966972													1538.4
RB2	mass GHG	1511.89	0.00	1.04												1512.9	
	CO <sub>2</sub> e	1511.89	0.58	25.97													1538.4
RB3	mass GHG	1511.89	0.00	1.04												1512.9	
	CO <sub>2</sub> e	1511.8853	0.5755123	25.966972													1538.4
FL1	mass GHG	11497.84	0.01	20.52												11518.4	
	CO <sub>2</sub> e	11497.84	4.39	513.04													12015.3
FL2	mass GHG	11497.84	0.01	20.52												11518.4	
	CO <sub>2</sub> e	11497.842	4.3919171	513.04086													12015.3
FL3	mass GHG	11497.84	0.01	20.52												11518.4	
	CO <sub>2</sub> e	11497.84	4.39	513.04													12015.3
Total	mass GHG	261,279	0	69												261,348	
	CO <sub>2</sub> e	261,279	118	1,713													263,110

<sup>1</sup> 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.

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

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

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

<sup>5</sup> CO<sub>2</sub>e means Carbon Dioxide Equivalent and is calculated by multiplying the TPY mass emissions of the green house gas by its GWP.

<sup>6</sup> For Heaters/Boilers, CO<sub>2</sub> CH<sub>4</sub>, N<sub>2</sub>O emissions calculated according to §98.233(z)(1) and (2).

**Tab 3**  
**Section 3 - Application Summary**

# 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](http://www.env.nm.gov/aqb/permit/app_form.html)) for more detailed instructions on SSM emissions.

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XTO Energy Inc. (XTO) is submitting this updated initial Title V Operating permit application to the New Mexico Environmental Department (NMED) for the Spartan Compressor Station. This application is submitted under section 20.2.70.200.A of the New Mexico Administrative Code (NMAC).

The Spartan Compressor Station 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 7681-M2, issued on February 11, 2022. XTO is submitting this updated application to reflect the current issuance of NSR Permit 7681-M2.

Routine SSM combustion emissions are included with the regular emissions of the facility. SSM emissions from equipment maintenance are routed to either the low pressure or high-pressure flare header (FL1/FL2/FL3). SSM-related VOC emissions (tank landings, cleanings, pigging, compressor blowdowns, equipment blowdowns, etc.) are included at a rate of 10 tons per year per NMAQB guidance. Further detailed calculations are included in the application.

**Tab 4**  
**Section 4 - Process Flow Sheet**



# Section 4

## Process Flow Sheet

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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.

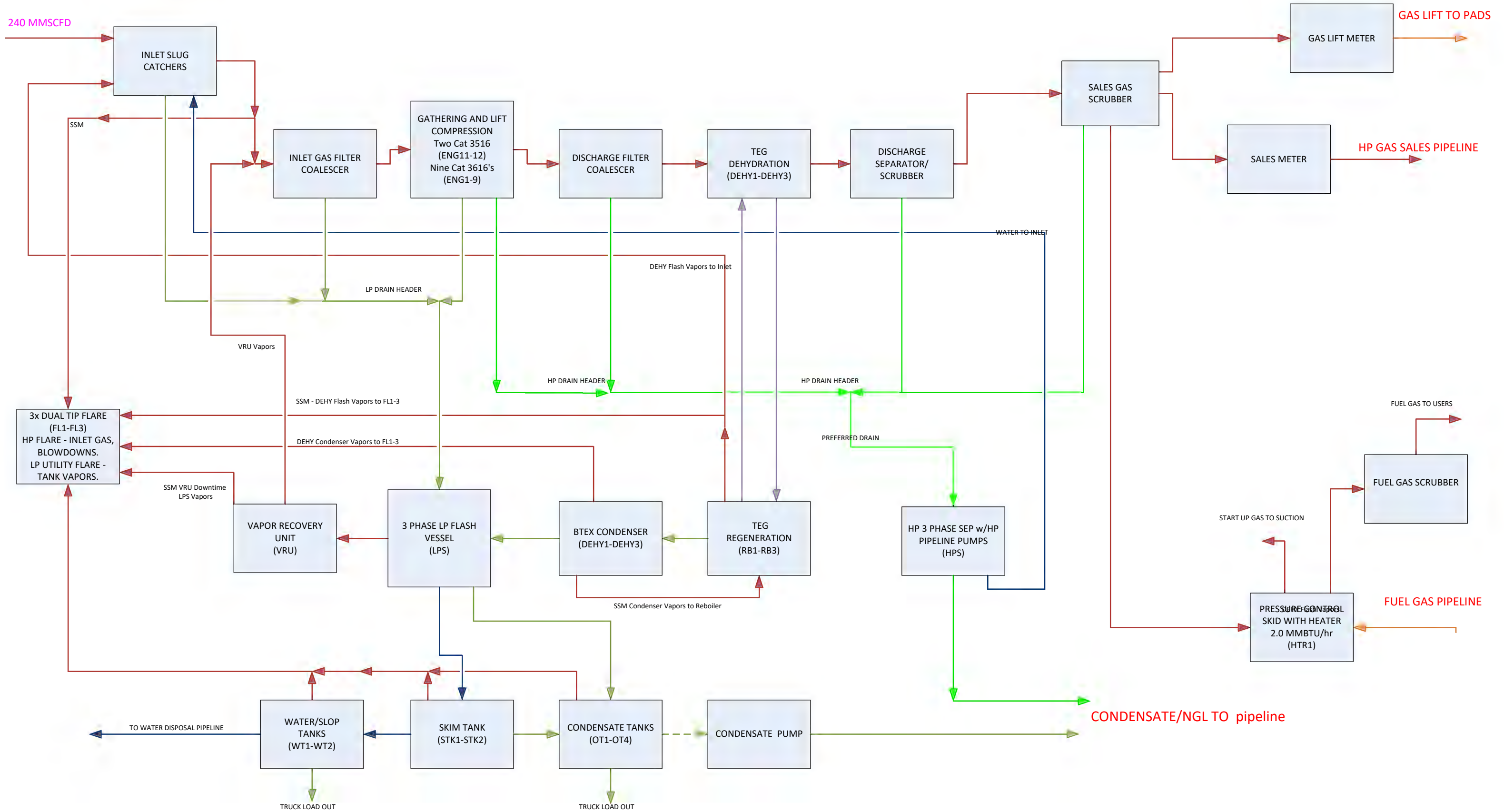
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A process flow diagram is included with this application.

Permitted compressor dump configuration

- Cat 3616 - 1<sup>st</sup> through 3<sup>rd</sup> stage scrubber dumps to LPS
- Cat 3616 - 4<sup>th</sup> stage and discharge scrubber dumps to HPS
- Cat 3516 - 1<sup>st</sup> and 2nd stage scrubber dumps to LPS
- Cat 3516 - 3<sup>rd</sup> and discharge scrubber dumps to HPS

# SPARTAN COMPRESSOR STATION



**Tab 5**  
**Section 5 - Plot Plan Drawn To Scale**

# Section 5

## Plot Plan Drawn To Scale

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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.

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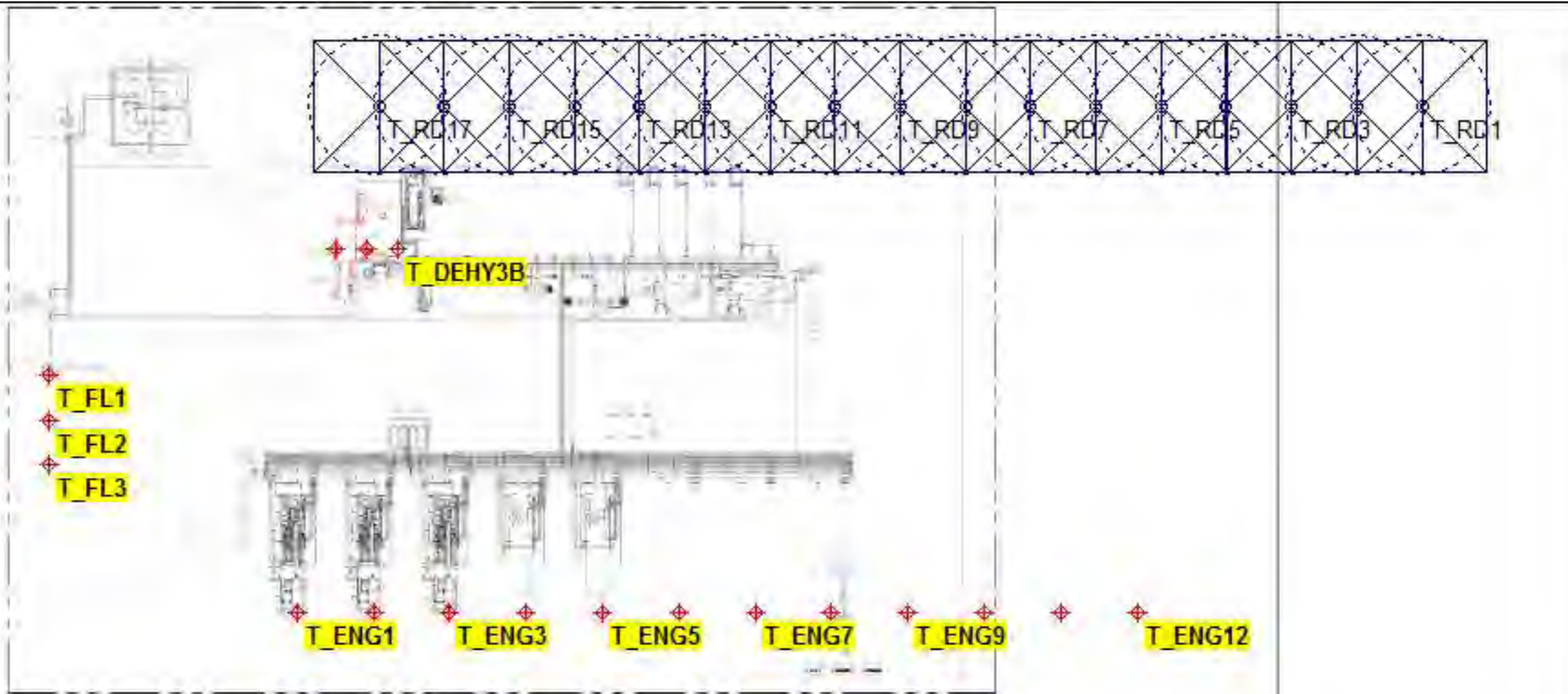
A plot plan is included with this application.

UTM North [m]

3554000 3554020 3554040 3554060 3554080 3554100 3554120 3554140

602980 603000 603020 603040 603060 603080 603100 603120 603140 603160 603180 603200 603220 603240 603260 603280 603300

UTM East [m]



**Tab 6**  
**Section 6 - All Calculations**

# Section 6

## All Calculations

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

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

**SSM Calculations:** It is the applicant's responsibility to provide an estimate of SSM emissions or to provide justification for not doing so. In this Section, provide emissions calculations for Startup, Shutdown, and Routine Maintenance (SSM) emissions listed in the Section 2 SSM and/or Section 22 GHG Tables and the rationale for why the others are reported as zero (or left blank in the SSM/GHG Tables). Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications ([http://www.env.nm.gov/aqb/permit/app\\_form.html](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.

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### **Caterpillar 3616TA (ENG-1 to ENG-9) and 3516TA (ENG-11 to ENG-12)**

Emission factors for nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), formaldehyde, and volatile organic compounds (VOC) are based on manufacturer's data. Emissions of particulate matter (PM/PM<sub>10</sub> and PM<sub>2.5</sub>) were calculated using AP-42 Table 3.2-3 factors. PM<sub>10</sub> and PM<sub>2.5</sub> emissions are set equal to PM emissions. SO<sub>2</sub> emissions are based on the units' fuel consumption and a 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.

### **Line Heater (HTR1) and Glycol Regenerator Heaters (RB1 to RB3)**

Emission of NO<sub>x</sub>, CO, VOC, HAP, and PM/PM<sub>10</sub>/PM<sub>2.5</sub> are based on AP-42, Chapter 1, Tables 1.4-1, 1.4-2, and 1.4-3 emission factors. PM<sub>10</sub> and PM<sub>2.5</sub> emissions are set equal to PM emissions. SO<sub>2</sub> 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).

### **SSM/Emergency Flares (FL1 – FL3)**

The facility will use three (3) dual-tip flares. NO<sub>x</sub> and CO emissions are based on factors from the Texas Commission on Environmental Quality (TCEQ) publication RG-360A/11. VOC emissions were calculated using a material balance and the manufacturer's guaranteed destruction efficiency (98%). Since gas can be routed to any or all of the flares, they are illustrated as one combine emission point. The flares have a control efficiency of 98%, with manufacturer documentation provided in Section 7 of the application. SSM activities routed to the flares could include process vessel purging and maintenance blowdowns for process equipment, high pressure gas flaring, and low pressure separator gas during VRU downtime. Tank vapors and 2% of the low pressure separator gas not collected by the VRU are continuously routed to the low pressure side of the flare.

### **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. For up to 438 hours, flash vapors are routed to the flares (FL1 - FL3). Each dehydrator is equipped with a condenser. Condensed liquids are routed to the skim tank and any remaining gas is burned at the flares (FL1 - FL3). The emissions being released at FL1-FL3 from the dehydration process are represented as a separate emission point (DEHY1-DEHY3). For up to 300 hours in a year, flash and condenser vapors can be routed to the reboiler (RB1 - RB3) during SSM. Emissions are represented as (DEHY1 SSM - DEHY3 SSM).

### **Storage Tanks (SKT1-SKT2, OT1-OT4, WT1-WT2)**

Flashing, working and breathing emissions from the skim tank, oil tanks, and water tanks were calculated using BR&E ProMax simulation software. Emissions from the tanks are controlled using FL1-FL3. The simulation reports are included in Section 7.

### **Truck Loading (LOAD)**

Uncontrolled emissions from oil loading of trucks were calculated using Equation 1 of AP-42 Section 5.2. Maximum condensate loading rates are calculated using 1836 BOPD and 75,000 BOPY. Relevant portions of AP-42 Section 5.2 are included in Section 7. Oil truck loading will be uncontrolled.

### **Water Truck Loading (LOAD2)**

Uncontrolled emissions from water loading of trucks were calculated using Equation 1 of AP-42 Section 5.2. Maximum loading rates are calculated using 521 BWPD 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.

### **Piping Component Fugitive Emissions (FUG)**

Facility fugitive emissions were calculated using TCEQ's "Air Permit Technical Guidance for Chemical Sources – Fugitive Guidance" document, and conservatively assumed component counts. Reduction efficiencies were obtained from EPA's Protocol for Equipment Leak Emission Estimates (EPA-453/R-95-017). Relevant portions of the TCEQ document are included in Section 7.



**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.

**Haul Road Fugitive Emissions**

Fugitive haul road emissions were calculated using Equations 1a and 2 of AP-42 Section 13.2.2. Relevant portions of AP-42 Section 13.2.2 are included in Section 7.

**Malfunction Emissions (MALFUNCTION)**

Malfunction emissions not routed to the flare system were assumed equal to the flat 10 tpy of VOC per State guidance. Specific malfunction emissions include any sudden and unavoidable failure of air pollution control equipment or process equipment beyond the control of the owner or operator.

XTO ENERGY, INC.

SPARTAN COMPRESSOR STATION

FACILITY EMISSIONS SUMMARY

EMISSIONS SUMMARY TABLE

EMISSION SOURCE DESCRIPTION	FACILITY IDENTIFICATION NUMBER	STACK NUMBER	NOx		CO		VOC (INCLUDES HAPs)		SO <sub>2</sub>		PM <sub>10 &amp; 2.5</sub>		HAPs		CO <sub>2e</sub>
			lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	TPY
Caterpillar G3616 Natural Gas Compressor Engine	ENG1	ENG1	4.13	18.11	4.97	21.78	3.93	17.21	0.48	2.09	0.38	1.65	0.63	2.74	23822
Caterpillar G3616 Natural Gas Compressor Engine	ENG2	ENG2	4.13	18.11	4.97	21.78	3.93	17.21	0.48	2.09	0.38	1.65	0.63	2.74	23822
Caterpillar G3616 Natural Gas Compressor Engine	ENG3	ENG3	4.13	18.11	4.97	21.78	3.93	17.21	0.48	2.09	0.38	1.65	0.63	2.74	23822
Caterpillar G3616 Natural Gas Compressor Engine	ENG4	ENG4	4.13	18.11	4.97	21.78	3.93	17.21	0.48	2.09	0.38	1.65	0.63	2.74	23822
Caterpillar G3616 Natural Gas Compressor Engine	ENG5	ENG5	4.13	18.11	4.97	21.78	3.93	17.21	0.48	2.09	0.38	1.65	0.63	2.74	23822
Caterpillar G3616 Natural Gas Compressor Engine	ENG6	ENG6	4.13	18.11	4.97	21.78	3.93	17.21	0.48	2.09	0.38	1.65	0.63	2.74	23822
Caterpillar G3616 Natural Gas Compressor Engine	ENG7	ENG7	4.13	18.11	2.92	12.79	2.00	8.74	0.48	2.10	0.38	1.65	0.32	1.39	21601
Caterpillar G3616 Natural Gas Compressor Engine	ENG8	ENG8	4.13	18.11	2.92	12.79	2.00	8.74	0.48	2.10	0.38	1.65	0.32	1.39	21601
Caterpillar G3616 Natural Gas Compressor Engine	ENG9	ENG9	4.13	18.11	2.92	12.79	2.00	8.74	0.48	2.10	0.38	1.65	0.32	1.39	21601
Caterpillar 3516j TA Natural Gas Compressor Engine	ENG11	ENG11	1.90	8.33	1.03	4.50	1.43	6.25	0.14	0.61	0.11	0.48	0.31	1.35	7068
Caterpillar 3516j TA Natural Gas Compressor Engine	ENG12	ENG12	1.90	8.33	1.03	4.50	1.43	6.25	0.14	0.61	0.11	0.48	0.31	1.35	7068
Fuel Line Heater (2.0 MMBtu/hr)	HTR1	HTR1	0.10	0.44	0.08	0.37	0.01	0.02	0.01	0.05	0.01	0.03	0.002	0.01	577
Glycol Regenerator Reboiler (2.0 MMBtu/hr)	RB1	RB1	0.27	1.18	0.23	0.99	0.01	0.06	0.03	0.13	0.02	0.09	0.005	0.02	1538
Glycol Regenerator Reboiler (2.0 MMBtu/hr)	RB2	RB1	0.27	1.18	0.23	0.99	0.01	0.06	0.03	0.13	0.02	0.09	0.005	0.02	1538
Glycol Regenerator Reboiler (2.0 MMBtu/hr)	RB3	RB1	0.27	1.18	0.23	0.99	0.01	0.06	0.03	0.13	0.02	0.09	0.005	0.02	1538
Total Flare Pilot/Purge Emissions	FL1-FL3 Pilot	FL1-FL3 Pilot	1.42	6.20	2.83	12.39	1.93	8.47	0.02	0.07	0.07	0.31	0.03	0.12	8118
Total Flare Normal Operations	FL1-FL3 Norm	FL1-FL3 Norm	2.44	9.69	4.87	19.35	16.32	33.41	0.26	1.09	0.05	0.22	1.69	2.17	9849
Total Flare SSM	FL1-FL3 SSM	FL1-FL3 SSM	478.28	14.34	954.82	28.62	858.52	29.57	5.08	0.19	22.33	0.65	32.05	1.15	19537
TEG Dehydrator with Condenser	DEHY1	FL1-FL3	Emissions Represented at FL1-FL3												
TEG Dehydrator with Condenser	DEHY2	FL1-FL3	Emissions Represented at FL1-FL3												
TEG Dehydrator with Condenser	DEHY3	FL1-FL3	Emissions Represented at FL1-FL3												
TEG Dehydrator with Condenser SSM	DEHY1 SSM	RB1	0.19	0.03	0.39	0.06	19.56	1.34	0.08	0.01	0.00	0.00	5.83	0.16	13
TEG Dehydrator with Condenser SSM	DEHY2 SSM	RB2	0.19	0.03	0.39	0.06	19.56	1.34	0.08	0.01	0.00	0.00	5.83	0.16	13
TEG Dehydrator with Condenser SSM	DEHY3 SSM	RB3	0.19	0.03	0.39	0.06	19.56	1.34	0.08	0.01	0.00	0.00	5.83	0.16	13
Skim Tank	SKT1	FL1-FL3	Emissions Represented at FL1-FL3												
Skim Tank (Backup)	SKT2	FL1-FL3	Emissions Represented at FL1-FL3												
Condensate Tank	OT1	FL1-FL3	Emissions Represented at FL1-FL3												

XTO ENERGY, INC.

SPARTAN COMPRESSOR STATION

FACILITY EMISSIONS SUMMARY

EMISSIONS SUMMARY TABLE

EMISSION SOURCE DESCRIPTION	FACILITY IDENTIFICATION NUMBER	STACK NUMBER	NOx		CO		VOC (INCLUDES HAPs)		SO <sub>2</sub>		PM <sub>10 &amp; 2.5</sub>		HAPs		CO <sub>2e</sub>
			lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	TPY
Condensate Tank	OT2	FL1-FL3	Emissions Represented at FL1-FL3												
Condensate Tank	OT3	FL1-FL3	Emissions Represented at FL1-FL3												
Condensate Tank	OT4	FL1-FL3	Emissions Represented at FL1-FL3												
Produced Water Tank	WT1	FL1-FL3	Emissions Represented at FL1-FL3												
Produced Water Tank	WT2	FL1-FL3	Emissions Represented at FL1-FL3												
Low Pressure Separator	LPS	FL1-FL3	Emissions Represented at FL1-FL3												
Condensate Truck Loading	LOAD	N/A	-	-	-	-	63.91	10.14	-	-	-	-	2.85	0.45	-
Water Truck Loading	LOAD2	N/A	-	-	-	-	0.46	0.09	-	-	-	-	0.00	0.00	-
Fugitive Emissions	FUG	N/A	-	-	-	-	5.06	22.16	-	-	-	-	0.40	1.76	-
SSM Activities	SSM	N/A	-	-	-	-	-	10.00	-	-	-	-	-	-	-
ROAD EMISSIONS	ROAD	ROAD	-	-	-	-	-	-	-	-	0.15	0.03	-	-	-
Malfunction Emissions	MALFUNCTION	MALFUNCTION	-	-	-	-	-	10.00	-	-	-	-	-	-	-

TOTAL FACILITY WIDE EMISSIONS	NOx		CO		VOC (INCLUDES HAPs)		SO <sub>2</sub>		PM <sub>10 &amp; 2.5</sub>		HAPs		CO <sub>2e</sub>
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	TPY
	524.63	213.90	1005.11	241.95	1037.35	270.04	10.28	21.87	26.29	17.32	59.85	29.53	264,607

**XTO ENERGY, INC.**  
**SPARTAN COMPRESSOR STATION**  
**Methodology for Burner Calculations**

**Burner Emission Calculations**

**AP 42 Emission Factors: Tables 1.4-1, 1.4-2, & 1.4-3**

$$\text{Emission Rate}_x (\text{lb/hr}) = \text{Burner Rating (MMBTU/hr)} * \text{EF}_x (\text{lb/MMSCF}) / 1020 (\text{Btu/scf}) * \text{Heating Value of Fuel Gas (BTU/SCF)} / 1020 (\text{Btu/scf}) + 25\%$$

$$\text{Annual Emission Rate}_x (\text{TPY}) = \text{Emission Rate (lb/hr)} * 8760 (\text{hour/year}) / 2000 (\text{lb/ton})$$

**Mass Balance - SO<sub>2</sub> & H<sub>2</sub>S Calculations**

$$\text{H}_2\text{S Mass Flow Rate (lb/hr)} = P * V / 10.73 / T * \text{MW}_{\text{GAS}} * \text{H}_2\text{S}_{\text{WEIGHT \%}} * (1 - \text{DRE})$$

P = Pressure (psia), V = Fuel Consumed in a hour (ft<sup>3</sup>/hr), 10.73 = Ideal Gas Constant, T = Temperature (°R)

$$\text{Uncontrolled H}_2\text{S Mass Flow Rate (lb/hr)} = P * V / 10.73 / T * \text{MW}_{\text{GAS}} * \text{H}_2\text{S}_{\text{WEIGHT \%}}$$

$$\text{SO}_2 \text{ Emission Rate (lb/hr)} = \text{Uncontrolled H}_2\text{S Mass Rate (lb/hr)} * \text{SO}_2 \text{ Conversion Efficiency} * (\text{MW of SO}_2 (\text{lb/lb-mol}) / \text{MW of H}_2\text{S (lb/lb-mol)})$$

$$\text{Annual Emission Rate (TPY)} = \text{Emission Rate (lb/hr)} * 8760 (\text{hour/year}) / 2000 (\text{lb/ton})$$

MW<sub>GAS</sub> = Molecular Weight of the Gas, H<sub>2</sub>S<sub>WEIGHT%</sub> = Weight Percent of the H<sub>2</sub>S in the Fuel Gas, DRE = Burner Combustion Efficiency of H<sub>2</sub>S

**XTO ENERGY INC.**  
**SPARTAN COMPRESSOR STATION**  
**Methodology for Engine Calculations**

**Engine Emission Calculations**

**Manufacturer's Data or NSPS Subpart JJJJ Limit Calculations**

$$\text{Emission Rate}_x (\text{lb/hr}) = \text{Emission Factor}_x (\text{g/hp-hr}) * \text{Rated hp} / 453.6 (\text{g/lb})$$

$$\text{Annual Emission Rate}_x (\text{TPY}) = \text{Emission Rate} (\text{lb/hr}) * 8760 (\text{hour/year}) / 2000 (\text{lb/ton})$$

**AP 42 Emission Factors**

$$\text{Emission Rate}_x (\text{lb/hr}) = \text{Fuel Consumption} (\text{MMBTU/hp-hr}) * \text{EF}_x (\text{lb/MMBTU}) * \text{Rated hp}$$

$$\text{Annual Emission Rate}_x (\text{TPY}) = \text{Emission Rate}_x (\text{lb/hr}) * 8760 (\text{hour/year}) / 2000 (\text{lb/ton})$$

**XTO ENERGY INC.**  
**SPARTAN COMPRESSOR STATION**  
**Methodology for Flare Calculations**

**Flare Calculations**

**VOC Flare Calculations - Uses the Ideal Gas Law for Mixtures**

The mass flow rate of VOCs to the flare were modeled using Promax. The mass rate was then reduced by the destruction efficiency of the flare (98%).

**NOx & CO Calculations - TCEQ Emission Factors Used**

$$\text{NOx (lb/day)} = \text{Heating Value (BTU/ft}^3) * \text{EF (lb/MMBTU)} * \text{V (ft}^3/\text{Day)} / 10^6 \text{ (BTU/MMBTU)}$$

$$\text{CO (lb/day)} = \text{Heating Value (BTU/ft}^3) * \text{EF (lb/MMBTU)} * \text{V (ft}^3/\text{Day)} / 10^6 \text{ (BTU/MMBTU)}$$

COEF = 0.5496 or 0.2755, NOxEF = 0.138, EF = Emission Factor, V = Volume of Gas in a Day

**SO<sub>2</sub> & H<sub>2</sub>S Calculations - Mass Balance**

$$\text{H}_2\text{S Mass Flow Rate (lb/hr)} = \text{P} * \text{V} / 10.73 / \text{T} * \text{MW}_{\text{GAS}} * \text{H}_2\text{S}_{\text{WEIGHT}} \% * (1 - \text{DRE})$$

P = Pressure (psia), V = Fuel Consumed in a hour (ft<sup>3</sup>/hr), 10.73 = Ideal Gas Constant, T = Temperature (°R)

$$\text{Uncontrolled H}_2\text{S Mass Flow Rate (lb/hr)} = \text{P} * \text{V} / 10.73 / \text{T} * \text{MW}_{\text{GAS}} * \text{H}_2\text{S}_{\text{WEIGHT}} \%$$

$$\text{SO}_2 \text{ Emission Rate (lb/hr)} = \text{Uncontrolled H}_2\text{S Mass Rate (lb/hr)} * \text{SO}_2 \text{ Conversion Efficiency} * (\text{MW of SO}_2 \text{ (lb/lb-mol)} / \text{MW of H}_2\text{S (lb/lb-mol)})$$

$$\text{Annual Emission Rate (TPY)} = \text{Emission Rate (lb/hr)} * 8760 \text{ (hour/year)} / 2000 \text{ (lb/ton)}$$

MW<sub>GAS</sub> = Molecular Weight of the Gas, H<sub>2</sub>S<sub>WEIGHT</sub>% = Weight Percent of the H<sub>2</sub>S in Gas Stream, DRE = Flare Destruction Efficiency of H<sub>2</sub>S

**XTO ENERGY, INC.**  
**SPARTAN COMPRESSOR STATION**  
**COMPRESSOR ENGINES**

**Uncontrolled Emissions Calculations**

Source ID	Unit Description	Gas Type	Annual Hours	Rated HP	MMBtu/hp-hr <sup>1</sup> (HHV)	Manufacturer's Data				AP-42 Factors			lb/hr <sup>5,6</sup>						tpy <sup>5,6</sup>							
						g/hp-hr <sup>2</sup>				lb/MMBtu <sup>3,4</sup>			NOx	CO	VOC	HCHO	SO <sub>2</sub>	PM <sub>10 &amp; 2.5</sub>	Acetaldehyde	NOx	CO	VOC	HCHO	SO <sub>2</sub>	PM <sub>10 &amp; 2.5</sub>	Acetaldehyde
						NOx	CO	VOC	HCHO	SO <sub>2</sub>	PM <sub>10 &amp; 2.5</sub>	Acetaldehyde														
ENG1	Caterpillar G3616 Natural Gas Compressor Engine	Field Gas	8760	5000	0.007481	0.30	3.47	0.99	0.18	0.01276	0.01006	0.00836	4.13	38.25	11.23	1.98	0.48	0.38	0.31	18.11	167.53	49.17	8.69	2.09	1.65	1.37
ENG2	Caterpillar G3616 Natural Gas Compressor Engine	Field Gas	8760	5000	0.007481	0.30	3.47	0.99	0.18	0.01276	0.01006	0.00836	4.13	38.25	11.23	1.98	0.48	0.38	0.31	18.11	167.53	49.17	8.69	2.09	1.65	1.37
ENG3	Caterpillar G3616 Natural Gas Compressor Engine	Field Gas	8760	5000	0.007481	0.30	3.47	0.99	0.18	0.01276	0.01006	0.00836	4.13	38.25	11.23	1.98	0.48	0.38	0.31	18.11	167.53	49.17	8.69	2.09	1.65	1.37
ENG4	Caterpillar G3616 Natural Gas Compressor Engine	Field Gas	8760	5000	0.007481	0.30	3.47	0.99	0.18	0.01276	0.01006	0.00836	4.13	38.25	11.23	1.98	0.48	0.38	0.31	18.11	167.53	49.17	8.69	2.09	1.65	1.37
ENG5	Caterpillar G3616 Natural Gas Compressor Engine	Field Gas	8760	5000	0.007481	0.30	3.47	0.99	0.18	0.01276	0.01006	0.00836	4.13	38.25	11.23	1.98	0.48	0.38	0.31	18.11	167.53	49.17	8.69	2.09	1.65	1.37
ENG6	Caterpillar G3616 Natural Gas Compressor Engine	Field Gas	8760	5000	0.007481	0.30	3.47	0.99	0.18	0.01276	0.01006	0.00836	4.13	38.25	11.23	1.98	0.48	0.38	0.31	18.11	167.53	49.17	8.69	2.09	1.65	1.37
ENG7	Caterpillar G3616 Natural Gas Compressor Engine	Residue Gas	8760	5000	0.0075	0.30	2.65	0.25	0.14	0.01276	0.01006	0.00836	4.13	29.21	3.84	1.54	0.48	0.38	0.31	18.11	127.94	16.80	6.76	2.10	1.65	1.37
ENG8	Caterpillar G3616 Natural Gas Compressor Engine	Residue Gas	8760	5000	0.0075	0.30	2.65	0.25	0.14	0.01276	0.01006	0.00836	4.13	29.21	3.84	1.54	0.48	0.38	0.31	18.11	127.94	16.80	6.76	2.10	1.65	1.37
ENG9	Caterpillar G3616 Natural Gas Compressor Engine	Residue Gas	8760	5000	0.0075	0.30	2.65	0.25	0.14	0.01276	0.01006	0.00836	4.13	29.21	3.84	1.54	0.48	0.38	0.31	18.11	127.94	16.80	6.76	2.10	1.65	1.37
ENG11	Caterpillar 3516j TA Natural Gas Compressor Engine	Field Gas	8760	1380	0.007962	0.50	2.60	1.05	0.35	0.01276	0.01006	0.00836	1.90	7.91	4.35	1.06	0.14	0.11	0.09	8.33	34.65	19.06	4.66	0.61	0.48	0.40
ENG12	Caterpillar 3516j TA Natural Gas Compressor Engine	Field Gas	8760	1380	0.007962	0.50	2.60	1.05	0.35	0.01276	0.01006	0.00836	1.90	7.91	4.35	1.06	0.14	0.11	0.09	8.33	34.65	19.06	4.66	0.61	0.48	0.40

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

<sup>2</sup>The VOC emission factor (g/hp-hr) includes HCHO. Emission factors based on Gas Engine Rating Pro Report @ 100% Load.

<sup>3</sup>SO<sub>2</sub> Emissions were calculated using 5 grains H<sub>2</sub>S per 100 scf fuel gas.

<sup>4</sup>PM Emission Factor = 7.71E-05 lb/MMBTU + 7.71E-05 lb/MMBTU + 9.91E-03 lb/MMBTU = 0.01006 lb/MMBTU

<sup>5</sup>25% safety factor was added to NOx on all engines. 25% safety factor was added to VOC on 3516. VOC lb/hr rates include acetaldehyde emissions.

<sup>6</sup>25% safety factor was added to VOC pollutants for compressor engines running on residue gas.

Total Emissions Per Pollutant (TPY)	NOx	CO	VOC	HCHO	SO <sub>2</sub>	PM <sub>10 &amp; 2.5</sub>	Acetaldehyde
		179.60	1458.32	383.53	81.75	20.06	15.81

**XTO ENERGY, INC.**  
**SPARTAN COMPRESSOR STATION**  
**COMPRESSOR ENGINES**

**Controlled Emissions Calculations**

Source ID	Unit Description	Gas Type	Annual Hours	Rated HP	MMBtu/hp-hr <sup>1</sup> (HHV)	Control Efficiency (%)			Manufacturer's Data (w/ control) g/hp-hr <sup>2</sup>				AP-42 Factors lb/MMBtu <sup>3,4</sup>			lb/hr <sup>5,6</sup>							tpy <sup>5,6</sup>						
						CO	VOC	HCOH	NOx	CO	VOC <sup>2</sup>	HCHO	SO <sub>2</sub>	PM <sub>10 &amp; 2.5</sub>	Acetaldehyde	NOx	CO	VOC	HCHO	SO <sub>2</sub>	PM <sub>10 &amp; 2.5</sub>	Acetaldehyde	NOx	CO	VOC	HCHO	SO <sub>2</sub>	PM <sub>10 &amp; 2.5</sub>	Acetaldehyde
ENG1	Caterpillar G3616 Natural Gas Compressor Engine	Field Gas	8760	5000	0.007481	87.0	65.0	74.0	0.30	0.45	0.35	0.05	0.0128	0.01006	0.00836	4.13	4.97	3.93	0.52	0.48	0.38	0.11	18.11	21.78	17.21	2.26	2.09	1.65	0.48
ENG2	Caterpillar G3616 Natural Gas Compressor Engine	Field Gas	8760	5000	0.007481	87.0	65.0	74.0	0.30	0.45	0.35	0.05	0.0128	0.01006	0.00836	4.13	4.97	3.93	0.52	0.48	0.38	0.11	18.11	21.78	17.21	2.26	2.09	1.65	0.48
ENG3	Caterpillar G3616 Natural Gas Compressor Engine	Field Gas	8760	5000	0.007481	87.0	65.0	74.0	0.30	0.45	0.35	0.05	0.0128	0.01006	0.00836	4.13	4.97	3.93	0.52	0.48	0.38	0.11	18.11	21.78	17.21	2.26	2.09	1.65	0.48
ENG4	Caterpillar G3616 Natural Gas Compressor Engine	Field Gas	8760	5000	0.007481	87.0	65.0	74.0	0.30	0.45	0.35	0.05	0.0128	0.01006	0.00836	4.13	4.97	3.93	0.52	0.48	0.38	0.11	18.11	21.78	17.21	2.26	2.09	1.65	0.48
ENG5	Caterpillar G3616 Natural Gas Compressor Engine	Field Gas	8760	5000	0.007481	87.0	65.0	74.0	0.30	0.45	0.35	0.05	0.0128	0.01006	0.00836	4.13	4.97	3.93	0.52	0.48	0.38	0.11	18.11	21.78	17.21	2.26	2.09	1.65	0.48
ENG6	Caterpillar G3616 Natural Gas Compressor Engine	Field Gas	8760	5000	0.007481	87.0	65.0	74.0	0.30	0.45	0.35	0.05	0.0128	0.01006	0.00836	4.13	4.97	3.93	0.52	0.48	0.38	0.11	18.11	21.78	17.21	2.26	2.09	1.65	0.48
ENG7	Caterpillar G3616 Natural Gas Compressor Engine	Residue Gas	8760	5000	0.0075	90.0	48.0	90.0	0.30	0.27	0.13	0.01	0.0128	0.01006	0.00836	4.13	2.92	2.00	0.15	0.48	0.38	0.16	18.11	12.79	8.74	0.68	2.10	1.65	0.71
ENG8	Caterpillar G3616 Natural Gas Compressor Engine	Residue Gas	8760	5000	0.0075	90.0	48.0	90.0	0.30	0.27	0.13	0.01	0.0128	0.01006	0.00836	4.13	2.92	2.00	0.15	0.48	0.38	0.16	18.11	12.79	8.74	0.68	2.10	1.65	0.71
ENG9	Caterpillar G3616 Natural Gas Compressor Engine	Residue Gas	8760	5000	0.0075	90.0	48.0	90.0	0.30	0.27	0.13	0.01	0.0128	0.01006	0.00836	4.13	2.92	2.00	0.15	0.48	0.38	0.16	18.11	12.79	8.74	0.68	2.10	1.65	0.71
ENG11	Caterpillar 3516j TA Natural Gas Compressor Engine	Field Gas	8760	1380	0.007962	87.0	65.0	74.0	0.50	0.34	0.37	0.09	0.0128	0.01006	0.00836	1.90	1.03	1.43	0.28	0.14	0.11	0.03	8.33	4.50	6.25	1.21	0.61	0.48	0.14
ENG12	Caterpillar 3516j TA Natural Gas Compressor Engine	Field Gas	8760	1380	0.007962	87.0	65.0	74.0	0.50	0.34	0.37	0.09	0.0128	0.01006	0.00836	1.90	1.03	1.43	0.28	0.14	0.11	0.03	8.33	4.50	6.25	1.21	0.61	0.48	0.14

<sup>1</sup>HHV is conservatively based on the Fuel Consumption Rate @ 75% Load from the Gas Engine Rating Pro Report

<sup>2</sup>The VOC emission factor (g/hp-hr) includes HCHO. Emission factors based on Gas Engine Rating Pro Report.

<sup>3</sup>SO<sub>2</sub> Emissions were calculated using 5 grains H<sub>2</sub>S per 100 scf fuel gas.

<sup>4</sup>PM Emission Factor = 7.71E-05 lb/MMBTU + 7.71E-05 lb/MMBTU + 9.91E-03 lb/MMBTU = 0.01006 lb/MMBTU

<sup>5</sup>25% safety factor was added to NO<sub>x</sub> on all engines. 25% safety factor was added to VOC on 3516. VOC lb/hr rates include acetaldehyde emissions.

<sup>6</sup>25% safety factor was added to VOC pollutants for compressor engines running on residue gas.

Total Emissions Per Pollutant (TPY)	NOx	CO	VOC	HCHO	SO <sub>2</sub>	PM <sub>10 &amp; 2.5</sub>	Acetaldehyde
		179.60	178.07	141.97	18.01	20.06	15.81



**XTO ENERGY, INC.**  
**SPARTAN COMPRESSOR STATION**  
**HEATERS - BURNER CALCULATIONS & EXHAUST STACK FLOW & FUEL CONSUMPTION RATES**

**CRITERIA & REGULATED POLLUTANTS EMISSIONS**

Source ID	Promax Fuel Gas Stream	Fuel Gas HHV (BTU/SCF)	Operating Hours	Burner Rating (MMBTU/Hr)	AP-42 Factors <sup>1</sup> lb/MMBtu					lb/hr <sup>2</sup>					tpy <sup>2</sup>				
					NOx	CO	VOC	SO <sub>2</sub>	PM <sub>10 &amp; 2.5</sub>	NOx	CO	VOC	SO <sub>2</sub>	PM <sub>10 &amp; 2.5</sub>	NOx	CO	VOC	SO <sub>2</sub>	PM <sub>10 &amp; 2.5</sub>
					HTR1	3. Fuel Gas	1,120	8,760	0.75	0.10	0.08	0.01	0.01	0.01	0.10	0.08	0.01	0.01	0.01
RB1	3. Fuel Gas	1,120	8,760	2.00	0.10	0.08	0.01	0.01	0.01	0.27	0.23	0.01	0.03	0.02	1.18	0.99	0.06	0.13	0.09
RB2	3. Fuel Gas	1,120	8,760	2.00	0.10	0.08	0.01	0.01	0.01	0.27	0.23	0.01	0.03	0.02	1.18	0.99	0.06	0.13	0.09
RB3	3. Fuel Gas	1,120	8,760	2.00	0.10	0.08	0.01	0.01	0.01	0.27	0.23	0.01	0.03	0.02	1.18	0.99	0.06	0.13	0.09

<sup>1</sup>Source: Emission factors from AP-42, Chapter 1, Tables 1.4-1, 1.4-2 and 1.4-3, converted from lb/MMscf to lb/MMbtu by dividing by 1,020 Btu/scf (per AP-42, Chapter 1 guidance).

SO<sub>2</sub> Emissions were calculated using 5 grains H<sub>2</sub>S per 100 scf fuel gas.

<sup>2</sup>Burners - 25% Safety Factor

<b>Total (tpy)</b>	NOx	CO	VOC	SO <sub>2</sub>	PM <sub>10 &amp; 2.5</sub>
	3.98	3.34	0.22	0.44	0.30

**XTO ENERGY, INC.**  
**SPARTAN COMPRESSOR STATION**  
**HEATERS - BURNER CALCULATIONS & EXHAUST STACK FLOW & FUEL CONSUMPTION RATES**

**HAZARDOUS AIR POLLUTANTS (HAP) EMISSIONS**

Source ID	Promax Stream	Fuel Gas (BTU/SCF)	Operating Hours	Burner Rating (MMBTU/Hr)	AP-42 Factors <sup>1</sup> lb/MMBtu					lb/hr <sup>2</sup>					tpy <sup>2</sup>				
					Benzene	Toluene	N-Hexane	HCHO	Dichloro benzene	Benzene	Toluene	N-Hexane	HCHO	Dichloro benzene	Benzene	Toluene	N-Hexane	HCHO	Dichloro benzene
HTR1	3. Fuel Gas	1,120	8760	0.75	2.1E-06	3.3E-06	1.8E-03	7.4E-05	1.2E-06	<0.001	<0.001	0.00	<0.001	<0.001	<0.001	<0.001	0.01	<0.001	<0.001
RB1	3. Fuel Gas	1,120	8760	2.00	2.1E-06	3.3E-06	1.8E-03	7.4E-05	1.2E-06	<0.001	<0.001	0.00	<0.001	<0.001	<0.001	<0.001	0.02	<0.001	<0.001
RB2	3. Fuel Gas	1,120	8760	2.00	2.1E-06	3.3E-06	1.8E-03	7.4E-05	1.2E-06	<0.001	<0.001	0.00	<0.001	<0.001	<0.001	<0.001	0.02	<0.001	<0.001
RB3	3. Fuel Gas	1,120	8760	2.00	2.1E-06	3.3E-06	1.8E-03	7.4E-05	1.2E-06	<0.001	<0.001	0.00	<0.001	<0.001	<0.001	<0.001	0.02	<0.001	<0.001

<sup>1</sup>Source: Emission factors from AP-42, Chapter 1, Tables 1.4-1, 1.4-2 and 1.4-3, converted from lb/MMscf to lb/MMbtu by dividing by 1,020 Btu/scf (per AP-42, Chapter 1 guidance). SO2 Emissions were calculated using 5 grains H2S per 100 scf fuel gas.

<sup>2</sup>Burners - 25% Safety Factor

Total Individual HAPS (tpy)	Benzene	Toluene	N-Hexane	HCHO	Dichloro benzene
		0.00	0.00	0.07	0.00

<b>Total Combined HAPS (tpy)</b>	<b>0.07</b>
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**XTO ENERGY, INC.**  
**SPARTAN COMPRESSOR STATION**  
**HEATERS - BURNER CALCULATIONS & EXHAUST STACK FLOW & FUEL CONSUMPTION RATES**

**Exhaust Stack and Fuel Consumption Data**

Source	HTR1	RB1	RB2	RB3		
Burner Rating (btu/hr)	750000	2000000	2000000	2000000		
Gross Heating Value (btu/scf)	1119.8	1119.8	1119.8	1119.8		
3" eclipse air mixer: (Air/Gas Ratio) <sup>1</sup>	5/1	5/1	5/1	5/1		
Stack Temperature (°F)	1000	1000	1000	1000		
Stack Diameter (ft)	1	1.5	1.5	1.5		
Stack Height (ft)	15	15	15	15		
Fuel Consumption (scf/hr)	670	1786	1786	1786		
Fuel Consumption (scf/day)	16075	42866	42866	42866		
Fuel Consumption (mmscf/year)	6	16	16	16		
Air Injection Rate (scf/hr)	6698	17861	17861	17861		
Total exhaust flow rate @ STP (scf/hr)	7368	19647	19647	19647		
Total exhaust flow rate @ STP (scf/sec)	2	5	5	5		
Total exhaust flow rate @ 1000 °F (acf/hr)	20686	55163	55163	55163		
Total exhaust flow rate @ 1000 °F (acf/sec)	5.75	15	15	15		
Exhaust Stack Exit Velocity @ STP (ft/sec)	2.61	3	3	3		
Exhaust Stack Exit Velocity @ 1000 °F (ft/sec)	7.32	9	9	9		
Total CH4 (ton/yr) <sup>2</sup>	0.39	1.04	1.04	1.04		
Total N2O (ton/yr) <sup>2</sup>	0.001	0.002	0.002	0.002		
Total CO2 (ton/yr) <sup>2</sup>	567	1512	1512	1512		
Total CO2e (ton/yr) <sup>2</sup>	576.91	1538	1538	1538		

Promax Stream Name	3. Fuel Gas
Component	Mass Frac
Triethylene Glycol	0.00
Water	0.00
Hydrogen Sulfide	0.00
Carbon Dioxide	0.00
Nitrogen	0.01
Methane	0.63
Ethane	0.17
Propane	0.10
Isobutane	0.02
n-Butane	0.04
Isopentane	0.01
n-Pentane	0.01
i-C6	0.01
i-C7	0.00
Octane	0.00
Nonane	0.00
Benzene	0.00
Toluene	0.00
Ethylbenzene	0.00
o-Xylene	0.00
n-Hexane	0.00
2,2,4-Trimethylpentane	0.00
Decanes Plus	0.00
Decanes Plus Sat	0.00

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

<sup>2</sup> GHG emissions source is 40 CFR § 98.233 (n), 40 CFR § 98.233(v) for CH4 and CO2 mass emissions, 40 CFR § 98.233(z) for N2O mass emissions,

**XTO ENERGY, INC.**  
**SPARTAN COMPRESSOR STATION**  
**STORAGE TANK EMISSIONS SUMMARY**

**VOC EMISSIONS SUMMARY**

Unit Number	Source Description	Material Type (Oil/Produced Water)	Number of Tanks in Category	Controlled by Unit #	Control Efficiency (%)	Promax Stream Liquid Material	Material Throughput (bbls/day)	Uncontrolled Working & Breathing Losses				Uncontrolled Flash Losses				Uncontrolled Total Emissions		Controlled Total Emissions	
								Promax Stream (Hrly)	Promax Stream (Annual)	Lb/hr	TPY	Promax Stream (Hrly)	Promax Stream (Annual)	Lb/hr	TPY	Lb/hr	TPY	Lb/hr	TPY
SKT1	Skim Tank	Produced Water	2	FL1-FL3	98	14. Skim Tank Inlet	269.97	8. Skim Tank W&B	8. Skim Tank W&B	5.01	21.96	26. Skim Flashing Losses Hrly	6. Skim Tank Flash Gas	3.51	7.33	8.53	29.29	0.17	0.59
SKT2	Skim Tank (Backup)	Produced Water	2	FL1-FL3	98	14. Skim Tank Inlet	269.97	8. Skim Tank W&B	8. Skim Tank W&B	5.01	21.96	26. Skim Flashing Losses Hrly	6. Skim Tank Flash Gas	3.51	7.33	8.53	29.29	0.17	0.59
OT1	Condensate Tank	Condensate	4	FL1-FL3	98	11. Condensate Sales Liquid	458.98	10. Condensate Tank W&B	10. Condensate Tank W&B	9.53	41.76	22. Condensate Flash Losses Hrly	7. Condensate Tank Flash Gas	137.73	249.05	147.27	290.80	2.95	5.82
OT2	Condensate Tank	Condensate	4	FL1-FL3	98	11. Condensate Sales Liquid	458.98	10. Condensate Tank W&B	10. Condensate Tank W&B	9.53	41.76	22. Condensate Flash Losses Hrly	7. Condensate Tank Flash Gas	137.73	249.05	147.27	290.80	2.95	5.82
OT3	Condensate Tank	Condensate	4	FL1-FL3	98	11. Condensate Sales Liquid	458.98	10. Condensate Tank W&B	10. Condensate Tank W&B	9.53	41.76	22. Condensate Flash Losses Hrly	7. Condensate Tank Flash Gas	137.73	249.05	147.27	290.80	2.95	5.82
OT4	Condensate Tank	Condensate	4	FL1-FL3	98	11. Condensate Sales Liquid	458.98	10. Condensate Tank W&B	10. Condensate Tank W&B	9.53	41.76	22. Condensate Flash Losses Hrly	7. Condensate Tank Flash Gas	137.73	249.05	147.27	290.80	2.95	5.82
WT1	Produced Water Tank	Produced Water	2	FL1-FL3	98	12. Produced Water Liquid	260.57	9. Water Tank W&B	9. Water Tank W&B	0.13	0.55	27. WT Flashing Losses Hrly	5. Water Tank Flash Gas	0.02	0.11	0.15	0.66	0.00	0.01
WT2	Produced Water Tank	Produced Water	2	FL1-FL3	98	12. Produced Water Liquid	260.57	9. Water Tank W&B	9. Water Tank W&B	0.13	0.55	27. WT Flashing Losses Hrly	5. Water Tank Flash Gas	0.02	0.11	0.15	0.66	0.00	0.01
<b>Storage Tank Emissions</b>										48.41	212.05			557.99	1011.07	606.41	1223.12	12.13	24.46

**XTO ENERGY, INC.**  
**SPARTAN COMPRESSOR STATION**  
**OIL TRUCK LOADING LOSSES - UNCONTROLLED**

**Truck Loading Losses Calculations**

<b>Promax Stream Production</b>	11. Condensate Sales Liquid	
<b>Promax Stream Emissions</b>	28. Condensate Loading Emissions	
<b>Controlled/Uncontrolled</b>	UNCONTROLLED	
<b>Operating Schedule<sup>c</sup></b>	<b>41</b>	<b>Day / Year</b>
<b>Condensate Production</b>	<b>1836</b>	<b>bbls / Day</b>

**Promax Report Results**

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

Saturation Factor (S) =	0.6
Average True Vapor Pressure of liquid loaded (P) <sup>a</sup> =	11.20
Max True Vapor Pressure of liquid loaded (P) <sup>a</sup> =	12.83
Average Temperature of bulk liquid loaded in Rankin (T) <sup>a</sup> =	535.03
Max Temperature of bulk liquid loaded in Rankin (T) <sup>a</sup> =	544.21
Molecular Weight (M) <sup>a</sup> =	49.58
Control Efficiency * Collection Efficiency (EFF)=	0
Hydrocarbon Content (%wt) <sup>a</sup> =	99.92
VOC Content (wt%) <sup>a</sup> =	82.88
HAP Content (wt%) <sup>a</sup> =	3.70
Average Uncontrolled LL (lb Total HC / bbl Throughput) <sup>b</sup> =	0.3258
Average Uncontrolled LL (lb VOC / bbl Throughput) <sup>b</sup> =	0.2703
Max Uncontrolled LL (lb Total HC / bbl Throughput) <sup>b</sup> =	0.3669
Max Uncontrolled LL (lb VOC / bbl Throughput) <sup>b</sup> =	0.3043
Estimated Throughput (bbls/Year) =	75000
Truck Loading Rate (bbls/hour) =	210
Estimated # of Loads (Approximately 1 hr/Load) =	357

<b>Total Hydrocarbon Emissions</b>	lb/hr	TPY
	77.05	12.22
<b>Total VOC Emissions</b>	lb/hr	TPY
	63.91	10.14
<b>Total HAP Emissions</b>	lb/hr	TPY
	2.85	0.45

**XTO ENERGY, INC.**  
**SPARTAN COMPRESSOR STATION**  
**OIL TRUCK LOADING LOSSES - UNCONTROLLED**

Component	Total Speciated Vapors Emitted During Loading		
	Mass Percentage <sup>d</sup>	lb/hr <sup>d</sup>	ton / yr
Triethylene Glycol	0.00	0.00	0.00
Water	0.00	0.00	0.00
Hydrogen Sulfide	0.00	0.00	0.00
Carbon Dioxide	0.07	0.06	0.01
Nitrogen	0.00	0.00	0.00
Methane	0.53	0.41	0.06
Ethane	16.51	12.73	2.02
Propane	28.02	21.61	3.43
Isobutane	7.98	6.15	0.98
n-Butane	17.59	13.57	2.15
Isopentane	5.98	4.61	0.73
n-Pentane	6.87	5.30	0.84
i-C6	6.91	5.33	0.85
i-C7	4.74	3.66	0.58
Octane	0.92	0.71	0.11
Nonane	0.15	0.12	0.02
Benzene	0.14	0.11	0.02
Toluene	0.22	0.17	0.03
Ethylbenzene	0.01	0.01	0.00
o-Xylene	0.07	0.05	0.01
n-Hexane	3.27	2.52	0.40
2,2,4-Trimethylpentane	0.00	0.00	0.00
Decanes Plus	0.01	0.01	0.00
Decanes Plus Sat	0.00	0.00	0.00
<b>Total HC</b>	<b>99.92</b>	<b>77.05</b>	<b>12.22</b>
<b>Total VOC</b>	<b>82.88</b>	<b>63.91</b>	<b>10.14</b>
<b>Total HAP</b>	<b>3.70</b>	<b>2.85</b>	<b>0.45</b>
Heating Value (Btu/scf)	2581.20	2581.20	2581.20
Molecular Weight (lb/lbmol)	49.58	49.58	49.58
SO2 Emissions (lb/hr)	N/A	N/A	N/A
Operating Hours (hr/yr)	N/A	N/A	980
Mass Flow	N/A	77.05 lb/hr	12.22 ton/yr
Volumetric Flow (scf/hr)	N/A	589.78	93.53
Heat Release (MMBtu/hr)	N/A	1.52	0.24

**Footnotes:**

- <sup>a</sup> Values were obtained from Promax.
- <sup>b</sup> Loading emissions include total hydrocarbons as calculated using AP-42, Section 5.2.
- <sup>c</sup> Condensate tanks are only trucked out when transfer to pipeline is unavailable.
- <sup>d</sup> The component speciation was obtained from Promax Stream " and multiplied by the total hydrocarbon emissions. (VOC = 0.00 lb/hr \* 0.00 wt% VOC = 0.01 lb/hr)
- <sup>e</sup> Loading emissions are uncontrolled.

**XTO ENERGY, INC.**  
**SPARTAN COMPRESSOR STATION**  
**WATER TRUCK LOADING LOSSES - UNCONTROLLED**

**Truck Loading Losses Calculations**

<b>Promax Stream Production</b>	12. Produced Water Liquid	
<b>Promax Stream Emissions</b>	24. Water Truck Loading	
<b>Controlled/Uncontrolled</b>	UNCONTROLLED	
<b>Operating Schedule</b>	<b>365</b>	<b>Day / Year</b>
<b>Condensate Production</b>	<b>521</b>	<b>bbls / Day</b>

**Promax Report Results**

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

Saturation Factor (S) =	0.6
Average True Vapor Pressure of liquid loaded (P) <sup>a</sup> =	0.66
Max True Vapor Pressure of liquid loaded (P) <sup>a</sup> =	0.88
Average Temperature of bulk liquid loaded in Rankin (T) <sup>a</sup> =	1007.34
Max Temperature of bulk liquid loaded in Rankin (T) <sup>a</sup> =	556.85
Molecular Weight (M) <sup>a</sup> =	18.15
Control Efficiency * Collection Efficiency (EFF)=	0
Hydrocarbon Content (%wt) <sup>a</sup> =	1.41
VOC Content (wt%) <sup>a</sup> =	0.34
HAP Content (wt%) <sup>a</sup> =	0.01
Average Uncontrolled LL (lb Total HC / bbl Throughput) <sup>b</sup> =	0.0038
Average Uncontrolled LL (lb VOC / bbl Throughput) <sup>b</sup> =	0.0009
Max Uncontrolled LL (lb Total HC / bbl Throughput) <sup>b</sup> =	0.0090
Max Uncontrolled LL (lb VOC / bbl Throughput) <sup>b</sup> =	0.0022
Estimated Throughput (bbls/Year) =	190214
Truck Loading Rate (bbls/hour) =	210
Estimated # of Loads (Approximately 1 hr/Load) =	906

<b>Total Hydrocarbon Emissions</b>	lb/hr	TPY
	1.89	0.36
<b>Total VOC Emissions</b>	lb/hr	TPY
	0.46	0.09
<b>Total HAP Emissions</b>	lb/hr	TPY
	0.00	0.00

**XTO ENERGY, INC.**  
**SPARTAN COMPRESSOR STATION**  
**WATER TRUCK LOADING LOSSES - UNCONTROLLED**

Component	Total Speciated Vapors Emitted During Loading		
	Mass Percentage <sup>d</sup>	lb/hr <sup>d</sup>	ton / yr
Triethylene Glycol	0.00	0.00	0.00
Water	98.18	1.86	0.35
Hydrogen Sulfide	0.01	0.00	0.00
Carbon Dioxide	0.41	0.01	0.00
Nitrogen	0.00	0.00	0.00
Methane	0.22	0.30	0.06
Ethane	0.84	1.13	0.21
Propane	0.26	0.35	0.07
Isobutane	0.02	0.03	0.00
n-Butane	0.04	0.06	0.01
Isopentane	0.00	0.01	0.00
n-Pentane	0.00	0.00	0.00
i-C6	0.00	0.00	0.00
i-C7	0.00	0.00	0.00
Octane	0.00	0.00	0.00
Nonane	0.00	0.00	0.00
Benzene	0.01	0.01	0.00
Toluene	0.00	0.00	0.00
Ethylbenzene	0.00	0.00	0.00
o-Xylene	0.00	0.00	0.00
n-Hexane	0.00	0.00	0.00
2,2,4-Trimethylpentane	0.00	0.00	0.00
Decanes Plus	0.00	0.00	0.00
Decanes Plus Sat	0.00	0.00	0.00
Total HC	1.41	1.89	0.36
Total VOC	0.34	0.46	0.09
Total HAP	0.01	0.01	0.00
Heating Value (Btu/scf)	13.79	13.79	13.79
Molecular Weight (lb/lbmol)	18.15	18.15	18.15
SO2 Emissions (lb/hr)	N/A	N/A	N/A
Operating Hours (hr/yr)	N/A	N/A	8760
Mass Flow	N/A	1.89 lb/hr	0.36 ton/yr
Volumetric Flow (scf/hr)	N/A	39.57	7.47
Heat Release (MMBtu/hr)	N/A	0.00	0.00

**Footnotes:**

<sup>a</sup> Values were obtained from Promax.

<sup>b</sup> Loading emissions include total hydrocarbons as calculated using AP-42, Section 5.2.

<sup>d</sup> The component speciation was obtained from Promax Stream "1" and multiplied by the total hydrocarbon emissions. (VOC = 0.00 lb/hr \* 0.00 wt% VOC = 0.00 lb/hr)

<sup>e</sup> Loading emissions are uncontrolled.



XTO ENERGY INC.  
SPARTAN COMPRESSOR STATION  
FLARE 1-3 EMISSION SUMMARY

Flare Emissions Summary Table

Stream Source	Stream Source	NOx		CO		Total VOC (Includes Total HAPs)		SO <sub>2</sub>		PM <sub>10 &amp; 2.5</sub>		Total HAPs		CO <sub>2e</sub>	n-Hexane		Benzene	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	TPY	lb/hr	TPY	lb/hr	TPY
FL1-FL3 Pilot	FL1 Pilot/Purge	0.47	2.07	0.94	4.13	0.64	2.82	0.01	0.02	0.02	0.10	0.01	0.04	2705.87	0.01	0.04	0.00	0.00
	FL2 Pilot / Purge	0.47	2.07	0.94	4.13	0.64	2.82	0.01	0.02	0.02	0.10	0.01	0.04	2705.87	0.01	0.04	0.00	0.00
	FL3 Pilot / Purge	0.47	2.07	0.94	4.13	0.64	2.82	0.01	0.02	0.02	0.10	0.01	0.04	2705.87	0.01	0.04	0.00	0.00
FL1-FL3 Norm	PW Tank Vapors (WT1-2)	0.00	0.00	0.00	0.01	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.01	8.43	0.00	0.00	0.00	0.00
	Skim Tank Vapors (SKT1-2)	0.05	0.21	0.10	0.42	0.34	1.17	0.00	0.01	0.00	0.00	0.02	0.07	239.34	0.02	0.05	0.00	0.00
	Oil Tank Vapors (OT1-4)	1.74	6.67	3.48	13.32	11.78	23.26	0.01	0.06	0.03	0.15	0.49	1.11	7810.86	0.39	0.93	0.04	0.06
	Low Pressure Separator Vapors Normal Operation	0.06	0.25	0.12	0.49	0.28	1.09	0.00	0.00	0.00	0.01	0.01	0.05	332.41	0.01	0.04	0.00	0.00
	Dehy 1-3 Condenser Vapors	0.58	2.56	1.17	5.11	3.91	7.85	0.24	1.01	0.01	0.06	1.17	0.93	1457.82	0.25	0.28	0.38	0.37
FL1-FL3 SSM	Low Pressure Separator Vapors VRU Downtime	3.12	1.37	6.24	2.73	13.85	6.07	0.06	0.02	0.10	0.04	0.61	0.27	1846.72	0.50	0.22	0.03	0.02
	HP Flare Blowdowns	0.16	0.08	0.32	0.16	0.33	0.16	0.00	0.00	0.01	0.00	0.02	0.01	112.11	0.01	0.01	0.00	0.00
	Flash Tank Vapors	1.48	0.32	2.95	0.65	4.83	1.06	0.14	0.03	0.06	0.01	0.22	0.05	454.03	0.16	0.04	0.03	0.01
	HP Flare Inlet Gas Flaring	473.51	12.57	945.31	25.09	839.51	22.28	4.89	0.13	22.17	0.59	31.20	0.83	17124.32	27.97	0.74	1.12	0.03
<b>Total</b>	<b>Total Emissions</b>	<b>482.14</b>	<b>30.24</b>	<b>962.52</b>	<b>60.36</b>	<b>876.77</b>	<b>71.44</b>	<b>5.35</b>	<b>1.34</b>	<b>22.45</b>	<b>1.17</b>	<b>33.77</b>	<b>3.45</b>	<b>37503.64</b>	<b>29.34</b>	<b>2.42</b>	<b>1.61</b>	<b>0.50</b>
FL1-FL3 Pilot	<b>Total Flare Pilot/Purge Emissions</b>	<b>1.42</b>	<b>6.20</b>	<b>2.83</b>	<b>12.39</b>	<b>1.93</b>	<b>8.47</b>	<b>0.02</b>	<b>0.07</b>	<b>0.07</b>	<b>0.31</b>	<b>0.03</b>	<b>0.12</b>	<b>8117.60</b>	<b>0.03</b>	<b>0.12</b>	<b>0.00</b>	<b>0.00</b>
FL1-FL3 Norm	<b>Total Flare Normal Operations</b>	<b>2.44</b>	<b>9.69</b>	<b>4.87</b>	<b>19.35</b>	<b>16.32</b>	<b>33.41</b>	<b>0.26</b>	<b>1.09</b>	<b>0.05</b>	<b>0.22</b>	<b>1.69</b>	<b>2.17</b>	<b>9848.86</b>	<b>0.66</b>	<b>1.30</b>	<b>0.42</b>	<b>0.44</b>
FL1-FL3 SSM	<b>Total Flare SSM</b>	<b>478.28</b>	<b>14.34</b>	<b>954.82</b>	<b>28.62</b>	<b>858.52</b>	<b>29.57</b>	<b>5.08</b>	<b>0.19</b>	<b>22.33</b>	<b>0.65</b>	<b>32.05</b>	<b>1.15</b>	<b>19537.19</b>	<b>28.65</b>	<b>1.01</b>	<b>1.18</b>	<b>0.05</b>
<b>Total</b>	<b>Total Emissions</b>	<b>482.14</b>	<b>30.24</b>	<b>962.52</b>	<b>60.36</b>	<b>876.77</b>	<b>71.44</b>	<b>5.35</b>	<b>1.34</b>	<b>22.45</b>	<b>1.17</b>	<b>33.77</b>	<b>3.45</b>	<b>37503.64</b>	<b>29.34</b>	<b>2.42</b>	<b>1.61</b>	<b>0.50</b>
FL1-FL3 HP	High Pressure Gas Flaring (No Pilot)	473.67	12.65	945.63	25.25	839.84	22.44	4.89	0.13	22.17	0.59	31.22	0.84	17236.44	27.98	0.75	1.12	0.03
FL1-FL3 LP	Low Pressure Gas Flaring (No Pilot)	5.57	11.06	11.11	22.08	30.17	39.47	0.31	1.11	0.15	0.26	2.30	2.44	11695.58	1.17	1.52	0.46	0.46

**XTO ENERGY INC.**  
**SPARTAN COMPRESSOR STATION**  
**FLARE 1-3 HOURLY EMISSIONS WINTER SEASON - NORMAL OPERATIONS**

FLARE 1-3 HOURLY - NORMAL OPERATIONS

Stream	Uncaptured Maximum Hourly Emission Rates and Composition to Flare <sup>a,b</sup>													Total Vapors to Flare (Uncontrolled Max Hourly)	Destruction Efficiency	Total Flare Exhaust (controlled)	Criteria Pollutant Emissions from Flare <sup>c</sup>					
	SSM				HP Flare		Oil Tank Vapors (OTI-4)		Skim Tank Vapors (SKTI-2)		PW Tank Vapors (WTI-2)		Low Pres Sep <sup>d</sup>				Flash	W&B	Flash	W&B	Flash	W&B
Promax Stream Name	17. HPF Blowdowns <sup>e</sup>	Low Pres Sep <sup>d</sup> Flash (VRU Off)	Dehy Flash Tank Vapors	Inlet Gas Flaring <sup>f</sup>	HP Flare Pilot/Purge <sup>g</sup>	LP Flare Pilot/Purge <sup>g</sup>	22. Condensate Flash Losses Hly	10. Condensate Tank W&B	26. Skim Flashing Losses Hly	8. Skim Tank W&B	27. WT Flashing Losses Hly	9. Water Tank W&B	1. LP Separator Gas	(lb/hr)	(%)	(lb/hr)						
Triethylene Glycol	0.00	0.00	0.03	1.30	0.00	0.00	0.00	0.00	0.00	0.00	2.78052E-12	0.00	0.00	1.33	98%	0.03	NO <sub>x</sub>	481.55	0.138	lb/MMBtu		
Water	0.00	11.70	2.26	5.99	0.01	0.01	0.00	0.00	0.19	0.21	0.00	0.20	0.23	20.40	0%	20.40	CO	961.36	0.2755	lb/MMBtu		
Hydrogen Sulfide	0.00	0.03	0.07	2.60	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	2.72	98%	0.05	SO <sub>2</sub>	5.11	--	--		
Carbon Dioxide	0.17	2.54	7.05	515.88	0.90	0.75	0.12	0.04	0.02	0.02	0.00	0.01	0.05	527.54	0%	527.54	PM <sub>10</sub>	22.43	7.60	lb/MMscf		
Nitrogen	0.45	1.12	0.78	1399.05	2.48	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.02	1465.97	0%	1465.97	PM <sub>2.5</sub>	22.43	7.60	lb/MMscf		
Methane	30.99	216.91	175.12	96248.93	169.52	141.27	1.31	0.36	0.23	0.03	0.00	0.01	4.34	96989.03	98%	1939.78	N <sub>2</sub> O	0.77	0.00022	lb/MMBtu		
Ethane	8.48	214.18	108.16	26195.25	44.60	37.16	43.65	7.56	0.69	0.32	0.01	0.05	4.28	26664.38	98%	533.29	H <sub>2</sub> S	0.05	--	--		
Propane	5.64	243.07	91.07	17204.13	27.28	22.74	149.07	12.69	1.57	1.86	0.01	0.06	4.86	17764.05	98%	355.28						
Isobutane	1.30	66.09	19.49	3892.07	5.53	4.61	49.88	3.67	0.62	1.09	0.00	0.01	1.32	4045.68	98%	80.91						
n-Butane	2.71	141.47	51.31	7955.75	10.49	8.74	157.24	8.13	1.48	2.47	0.01	0.04	2.83	8342.68	98%	166.85						
Isopentane	0.99	48.84	15.90	2753.16	2.92	2.43	52.04	2.78	0.61	0.92	0.00	0.01	0.98	2881.60	98%	57.63						
n-Pentane	1.18	56.70	21.44	3181.79	3.06	2.55	61.94	3.20	0.74	1.08	0.00	0.01	1.13	3334.83	98%	66.70						
i-C6	1.32	54.99	17.48	3034.61	1.93	1.61	25.04	3.23	0.78	1.06	0.00	0.01	1.10	3143.16	98%	62.86						
i-C7	1.32	40.02	12.28	2071.09	0.69	0.58	27.40	2.21	0.60	0.76	0.00	0.00	0.80	2157.76	98%	43.16						
Octane	0.60	8.71	1.47	296.80	0.03	0.03	5.07	0.43	0.14	0.16	0.00	0.00	0.17	313.62	98%	6.27						
Nonane	0.28	1.74	0.10	26.00	0.00	0.00	0.56	0.07	0.03	0.03	0.00	0.00	0.03	28.85	98%	0.58						
Benzene	0.03	1.72	1.26	56.05	0.03	0.03	1.90	0.07	0.02	0.03	0.00	0.03	0.03	61.21	98%	1.22						
Toluene	0.09	2.72	1.60	86.40	0.02	0.02	1.57	0.10	0.04	0.05	0.00	0.05	0.05	92.71	98%	1.85						
Ethylbenzene	0.01	0.08	0.02	1.88	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	2.04	98%	0.04						
o-Xylene	0.07	0.89	0.22	17.27	0.00	0.00	0.31	0.03	0.01	0.02	0.00	0.02	0.02	18.86	98%	0.38						
n-Hexane	0.67	25.23	8.02	1398.42	0.72	0.60	17.78	1.52	0.37	0.49	0.00	0.00	0.50	1454.33	98%	29.09						
2,2,4-Trimethylpentane	0.00	0.00	0.00	0.00	0.00	0.00	1.09	0.00	0.00	0.00	0.00	0.00	0.00	1.09	98%	0.02						
Decanes Plus	0.13	0.15	0.00	0.22	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.52	98%	0.01						
Decanes Plus Sat	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98%	0.00						
<b>Total</b>	<b>56.43</b>	<b>1138.91</b>	<b>535.16</b>	<b>166344.24</b>	<b>270.23</b>	<b>225.19</b>	<b>596.01</b>	<b>46.09</b>	<b>8.14</b>	<b>10.61</b>	<b>0.06</b>	<b>0.53</b>	<b>22.78</b>	<b>169254.37</b>	<b>--</b>	<b>5299.92</b>						
<b>Total VOC</b>	<b>16.34</b>	<b>692.44</b>	<b>241.68</b>	<b>41975.64</b>	<b>52.72</b>	<b>43.93</b>	<b>550.93</b>	<b>38.13</b>	<b>7.02</b>	<b>10.03</b>	<b>0.04</b>	<b>0.25</b>	<b>13.85</b>	<b>43629.15</b>	<b>--</b>	<b>872.58</b>						
<b>Total HAP</b>	<b>0.87</b>	<b>30.65</b>	<b>11.12</b>	<b>1560.02</b>	<b>0.78</b>	<b>0.65</b>	<b>22.69</b>	<b>1.73</b>	<b>0.45</b>	<b>0.59</b>	<b>0.00</b>	<b>0.10</b>	<b>0.61</b>	<b>1630.25</b>	<b>--</b>	<b>32.60</b>						
Heating Value (Btu/scf)	1,219.09	1,784.74	1,479.67	1,176.43	1,119.76	1,119.76	2826.67	2574.72	2573.03	2904.15	2215.44	892.10	1784.74	1182.24								
Molecular Weight (lb/lbmol)	22.50	34.08	28.02	21.64	20.51	20.51	54.51	49.45	50.89	57.55	43.66	29.53	34.08	--								
Operating Hours (hr/yr)	1,000	876	438	53	8760	8760	8760	8760	8760	8760	8760	8760	7884	--								
Mass Flow (lb/hr)	56.43	1,138.91	535.16	166,344.24	270.23	225.19	596.01	46.09	8.14	10.61	0.06	0.53	22.78	169,254.37								
Volumetric Flow (scf/hr)	952	12,682	7,247	2,916,667	5,000	4,167	4,149	353.66	60.71	69.98	0.49	6.81	253.65	295,1608.99								
Heat Release (MMBtu/hr)	1.16	22.63	10.72	3,431.28	5.60	4.67	11.73	0.91	0.16	0.20	0.00	0.01	0.45	3489.50								

Combustion Emissions from Flare														
	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Total NO <sub>x</sub>	0.16	3.12	1.48	473.51	0.77	0.64	1.62	0.13	0.02	0.03	0.00	0.00	0.06	481.55
Total CO	0.32	6.24	2.95	945.31	1.54	1.29	3.23	0.25	0.04	0.06	0.00	0.00	0.12	961.36
Total SO <sub>2</sub>	0.00	0.08	0.14	4.89	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	5.11
Total PM <sub>10</sub>	0.01	0.10	0.06	22.17	0.04	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	22.43
Total PM <sub>2.5</sub>	0.01	0.10	0.06	22.17	0.04	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	22.43
Total VOC after comb.	0.33	13.85	4.83	839.51	1.05	0.88	11.02	0.76	0.14	0.20	0.00	0.01	0.28	872.86
Total HAP after comb.	0.02	0.61	0.22	31.20	0.02	0.01	0.45	0.03	0.01	0.01	0.00	0.00	0.01	32.60
Total n-Hexane after comb.	0.01	0.50	0.16	27.97	0.01	0.01	0.36	0.03	0.01	0.01	0.00	0.00	0.01	29.09
Total Benzene after comb.	0.00	0.03	0.03	1.12	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	1.22
Total CH <sub>4</sub>	0.44	2.04	2.01	1428.70	2.66	2.21	0.01	0.00	0.00	0.00	0.00	0.00	0.04	1438.11
Total N <sub>2</sub> O	0.000	0.01	0.01	1.67	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	1.70
Total CO <sub>2</sub>	219.49	4323.32	2084.01	623268.42	951.76	793.13	1849.68	147.39	26.68	32.64	0.19	1.75	86.47	633,784.92
Total CO <sub>2e</sub>	230.62	4577.72	2135.76	659482.85	1018.95	849.13	1851.58	147.58	26.74	32.67	0.19	1.75	87.55	670,243.09

**Footnotes:**  
<sup>a</sup> Uncontrolled stream properties determined via ProMax.  
<sup>b</sup> Tank emissions determined in ProMax are calculated at the maximum daily liquid surface temperature.  
<sup>c</sup> Pilot fuel gas emissions are conservatively calculated based on observed flowrates  
<sup>d</sup> Controlled Emissions Were Calculated by the Following: Uncontrolled Emissions \* (1 - VRU Efficiency) \* (1 - Flare Destruction Efficiency)  
<sup>e</sup> Flare CO and NO<sub>x</sub> emission factors from TCEQ Air Permit Technical Guidance for Chemical Sources. PM and PM<sub>2.5</sub> emission factors from AP-42, Table 1.4-1 and 1.4-2, July 1998. SO<sub>2</sub> emissions assume 100% conversion of H<sub>2</sub>S to SO<sub>2</sub>.  
<sup>f</sup> Blowdowns are estimated to be @ 952 SCF per blowdown. XTO conservatively estimates 1000 blowdowns per year and 1 blowdown per hour  
<sup>g</sup> XTO conservatively estimates 155 MMBscf of inlet gas flaring per year @ 2.92 MMBscf/hr max rate  
<sup>h</sup> GHG emissions source is 40 CFR § 98.233 (n), 40 CFR § 98.233(v) for CH<sub>4</sub> and CO<sub>2</sub> mass emissions, 40 CFR § 98.233(a) for N<sub>2</sub>O mass emissions.

**XTO ENERGY INC.**  
**SPARTAN COMPRESSOR STATION**  
**FLARE 1-3 ANNUAL EMISSIONS WINTER SEASON - NORMAL OPERATIONS**

FLARE ANNUAL - NORMAL OPERATIONS

Stream	SSM										Oil Tank Vapors (OTI-4)				Skim Tank Vapors (SKTI-2)		PW Tank Vapors (PWTI-2)		Low Pres Sep <sup>2</sup> Flash (VRU On) 98% Col Eff	Total Vapors to Flare (uncontrolled)	Destruction Efficiency	Total Flare Exhaust (controlled)
	HP Flare Blowdowns <sup>1</sup>	Low Pres Sep <sup>2</sup> Flash (VRU Off)	Flash Tank Vapors	Inlet Gas Flaring <sup>3</sup>	HP Flare Pilot/Purge <sup>4</sup>	LP Flare Pilot/Purge <sup>4</sup>	Flash	W&B	Flash	W&B	Flash	W&B	Flash	W&B	Flash	W&B						
Promax Stream Name	17. HPF Blowdowns	1. LP Separator Gas	29. Dehy Flash Tank Vapors	19. Inlet Flaring	15. HPF Pilot/Purge Gas	16. LPF Pilot/Purge Gas	7. Condensate Tank Flash Gas	10. Condensate Tank W&B	6. Skim Tank Flash Gas	8. Skim Tank W&B	5. Water Tank Flash Gas	9. Water Tank W&B	1. LP Separator Gas	(ton/yr)	(%)	(ton/yr)						
Component	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(%)	(ton/yr)						
Triethylene Glycol	0.00	0.00	0.01	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	98%	0.00					
Water	0.00	5.12	0.50	0.15	0.04	0.04	6.83	0.00	0.28	0.94	0.01	0.88	0.92	15.70	0%	15.70						
Hydrogen Sulfide	0.00	0.01	0.02	0.07	0.02	0.02	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.17	98%	0.00						
Carbon Dioxide	0.08	1.11	1.54	13.69	3.93	3.28	1.23	0.16	0.04	0.09	0.00	0.06	0.20	25.42	0%	25.42						
Nitrogen	0.23	0.49	0.17	37.13	10.86	9.05	0.07	0.00	0.00	0.00	0.00	0.09	58.10	0%	58.10							
Methane	15.50	95.01	38.35	2554.24	742.51	618.76	46.62	1.58	0.91	0.13	0.01	0.06	17.10	4130.78	98%	82.62						
Ethane	4.24	93.81	23.69	695.17	195.33	162.78	171.73	33.10	2.35	1.40	0.04	0.22	16.89	1400.73	98%	28.01						
Propane	2.82	106.46	19.94	456.56	119.50	99.58	307.77	55.56	4.28	8.15	0.07	0.28	19.16	1200.16	98%	24.00						
Isobutane	0.65	28.95	4.27	103.29	24.22	20.19	96.53	16.05	1.41	4.76	0.02	0.06	5.21	305.61	98%	6.11						
n-Butane	1.36	61.96	11.24	211.13	45.96	38.30	213.28	35.60	3.17	10.83	0.05	0.19	11.15	644.22	98%	12.88						
Isopentane	0.50	21.39	3.48	73.06	12.79	10.66	76.31	12.19	1.16	4.03	0.02	0.05	3.85	219.49	98%	4.39						
n-Pentane	0.59	24.84	4.70	84.44	13.40	11.17	88.95	14.03	1.36	4.73	0.01	0.02	4.47	252.70	98%	5.05						
i-C6	0.66	24.09	3.83	80.53	8.44	7.03	86.68	14.13	1.33	4.66	0.02	0.03	4.34	235.77	98%	4.72						
i-C7	0.66	17.53	2.69	54.96	3.02	2.52	62.46	9.69	0.96	3.34	0.01	0.01	3.15	161.02	98%	3.22						
Octane	0.30	3.82	0.32	7.88	0.15	0.13	13.31	1.87	0.21	0.70	0.00	0.00	0.69	1.87	98%	0.59						
Nonane	0.14	0.76	0.02	0.69	0.00	0.00	2.62	0.31	0.04	0.14	0.00	0.00	0.14	4.87	98%	0.10						
Benzene	0.02	0.75	0.28	1.49	0.11	0.11	2.71	0.29	0.04	0.14	0.00	0.14	0.14	6.24	98%	0.12						
Toluene	0.05	1.19	0.35	2.29	0.09	0.08	4.23	0.45	0.07	0.23	0.00	0.22	0.21	9.46	98%	0.19						
Ethylbenzene	0.00	0.03	0.01	0.05	0.00	0.00	0.12	0.01	0.00	0.01	0.00	0.01	0.01	0.25	98%	0.00						
o-Xylene	0.04	0.39	0.05	0.46	0.01	0.01	1.36	0.13	0.02	0.07	0.00	0.07	0.07	2.67	98%	0.05						
n-Hexane	0.33	11.05	1.76	37.11	3.17	2.64	39.64	6.68	0.61	2.13	0.01	0.01	1.99	107.11	98%	2.14						
2,2,4-Trimethylpentane	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98%	0.00						
Decanes Plus	0.07	0.06	0.00	0.01	0.00	0.00	0.22	0.02	0.00	0.01	0.00	0.00	0.01	0.41	98%	0.01						
Decanes Plus Sat	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98%	0.00						
<b>Total</b>	<b>28.22</b>	<b>498.84</b>	<b>117.20</b>	<b>4414.42</b>	<b>1183.60</b>	<b>986.34</b>	<b>1222.70</b>	<b>201.86</b>	<b>18.23</b>	<b>46.48</b>	<b>0.29</b>	<b>2.32</b>	<b>89.79</b>	<b>8810.30</b>	--	<b>273.43</b>						
Total VOC	8.17	303.29	52.93	1113.94	230.90	192.42	996.19	167.02	14.65	43.93	0.22	1.10	54.59	3179.36	--	63.59						
Total HAP	0.43	13.42	2.44	41.40	3.40	2.84	48.06	7.56	0.74	2.57	0.01	0.44	2.42	125.73	--	2.51						
Heating Value (Btu/cf)	1219.09	1784.74	1479.67	1176.43	1119.76	1119.76	2441.75	2574.72	2351.20	2904.15	2186.58	892.10	1784.74	1368.99								
Molecular Weight (lb/lbmol)	22.50	34.08	28.02	21.64	20.51	20.51	47.12	49.45	45.86	57.55	43.27	29.53	34.08	--								
Operating Hours (hr/yr)	1000	876	438	53	8760	8760	8760	8760	8760	8760	8760	8760	8760	7884	--							
Mass Flow (ton/yr)	28.22	498.84	117.20	4414.42	1183.60	986.34	1222.70	201.86	18.23	46.48	0.29	2.32	89.79	8810.30								
Volumetric Flow (MMscf/yr)	0.95	11.11	3.17	154.80	43.80	36.50	36.34	3.10	0.53	1.61	0.00	0.06	2.00	292.99								
Heat Release (MMBtu/yr)	1160.05	19828.06	4697.05	182116.56	49045.42	40871.18	88744.79	7976.71	1250.33	1780.25	9.33	53.24	3569.05	401102.03								

Criteria Pollutant Emissions from Flare *			
Component	Emission Rate	Emission Factor	Emission Factor Units
	(ton/yr)		
NO <sub>x</sub>	27.68	0.138	lb/MMBtu
CO	55.25	0.2755	lb/MMBtu
SO <sub>x</sub>	0.32	--	--
PM <sub>10</sub>	1.11	7.60	lb/MMscf
PM <sub>2.5</sub>	1.11	7.60	lb/MMscf
N <sub>2</sub> O	0.04	0.00022	lb/MMBtu
H <sub>2</sub> S	0.00	--	--

LPS Vapor Controls / Flare DRE	
LPS VRU Collection Efficiency (Normal Operations)	98.0%
LPS VRU Downtime (MSS Operations)	10.0%
Flare Destruction Efficiency C4+	98%
Flare Destruction Efficiency C3	98%
H2S molecular weight	34.08
SO2 molecular weight	64.06
Molar Volume (scf/lbmol)	379.484
Flare Operating Hours	8760

Combustion Emissions from Flare													
	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)
Total NO <sub>x</sub>	0.08	1.37	0.32	12.57	3.38	2.82	6.12	0.55	0.09	0.12	0.00	0.00	0.25
Total CO	0.16	2.73	0.65	25.09	6.76	5.63	12.22	1.10	0.17	0.25	0.00	0.01	0.49
Total SO <sub>2</sub>	0.00	0.02	0.03	0.13	0.04	0.03	0.05	0.01	0.00	0.00	0.00	0.00	0.32
Total PM <sub>10</sub>	0.00	0.04	0.01	0.59	0.17	0.14	0.14	0.01	0.00	0.00	0.00	0.00	0.01
Total PM <sub>2.5</sub>	0.00	0.04	0.01	0.59	0.17	0.14	0.14	0.01	0.00	0.00	0.00	0.00	0.01
Total VOC after comb.	0.16	6.07	1.06	22.28	4.62	3.85	19.92	3.34	0.29	0.88	0.00	0.02	1.09
Total HAP after comb.	0.01	0.27	0.05	0.83	0.07	0.06	0.96	0.15	0.01	0.05	0.00	0.01	0.05
Total n-Hexane after comb.	0.01	0.22	0.04	0.74	0.06	0.05	0.79	0.13	0.01	0.04	0.00	0.00	0.04
Total Benzene after comb.	0.00	0.02	0.01	0.03	0.00	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.12
Total CH <sub>4</sub>	0.22	0.90	0.44	37.91	11.63	9.69	0.59	0.01	0.01	0.00	0.00	0.00	0.16
Total N <sub>2</sub> O	0.000	0.00	0.00	0.02	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.04
Total CO <sub>2</sub>	106.54	1823.68	442.88	16170.48	4135.40	3446.17	7176.29	616.46	103.96	134.98	0.81	7.60	328.26
Total CO <sub>2e</sub>	112.11	1846.72	454.03	17124.32	4427.78	3689.82	7193.87	616.98	104.28	135.06	0.81	7.62	332.41

**Footnotes:**  
<sup>1</sup> Uncontrolled stream properties determined via ProMax.  
<sup>2</sup> Tank emissions determined in ProMax are calculated at the maximum daily liquid surface temperature.  
<sup>3</sup> Pilot fuel gas emissions are conservatively calculated based on observed flowrates  
<sup>4</sup> Controlled Emissions Were Calculated by the Following: Uncontrolled Emissions \* (1 - VRU Efficiency) \* (1 - Flare Destruction Efficiency)  
<sup>5</sup> Flare CO and NOx emission factors from ICDQ 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.  
<sup>6</sup> Blowdowns are estimated to be @ 952 SCF per blowdown. XTO conservatively estimates 1000 blowdowns per year and 1 blowdown per hour  
<sup>7</sup> XTO conservatively estimates 155 MMscf of inlet gas flaring per year @ 2.92 MMscf/hr max rate  
<sup>8</sup> GHG emissions source is 40 CFR § 98.233 (n), 40 CFR § 98.233(v) for CH4 and CO2 mass emissions, 40 CFR § 98.233(z) for N2O mass emissions.

**XTO ENERGY INC.**  
**SPARTAN COMPRESSOR STATION**  
**DEHYDRATOR 1-3 VAPORS ROUTED TO LOW PRESSURE FLARE - NORMAL OPERATIONS**

VOC/HAP Emissions for Dehydration Units (DEHY1 - DEHY3) - Routed to FL1 - FL3

Uncontrolled Maximum Hourly Emission Rates and Composition to Combustion Device(s) <sup>a</sup>							
Stream	DEHY1-3 Still Column Emissions		Total Vapors to Combustion Device(s) (Uncontrolled)		Destruction Efficiency (%)	Total Combustion Device(s) Exhaust (controlled)	
	Promax Stream Name	25. DEHY1-3 Max Hourly (lb/hr)	13. BTX Cond Vapors to Combustion (ton/yr)	(lb/hr)		(ton/yr)	(lb/hr)
Component							
Triethylene Glycol	0.00	3.72E-08	0.00	0.00	98%	0.00	0.00
Water	10.60	5.92	10.60	5.92	0%	10.60	5.92
Hydrogen Sulfide	0.13	0.54	0.13	0.54	98%	0.00	0.01
Carbon Dioxide	2.64	11.44	2.64	11.44	0%	2.64	11.44
Nitrogen	0.01	0.04	0.01	0.04	0%	0.01	0.04
Methane	7.98	34.88	7.98	34.88	98%	0.16	0.70
Ethane	16.39	70.32	16.39	70.32	98%	0.33	1.41
Propane	25.83	105.25	25.83	105.25	98%	0.52	2.11
Isobutane	7.36	26.69	7.36	26.69	98%	0.15	0.53
n-Butane	27.59	91.76	27.59	91.76	98%	0.55	1.84
Isopentane	12.66	31.56	12.66	31.56	98%	0.25	0.63
n-Pentane	19.83	43.45	19.83	43.45	98%	0.40	0.87
i-C6	23.80	33.51	23.80	33.51	98%	0.48	0.67
i-C7	18.29	13.22	18.29	13.22	98%	0.37	0.26
Octane	1.87	0.68	1.87	0.68	98%	0.04	0.01
Nonane	0.11	0.03	0.11	0.03	98%	0.00	0.00
Benzene	19.12	18.68	19.12	18.68	98%	0.38	0.37
Toluene	23.82	12.80	23.82	12.80	98%	0.48	0.26
Ethylbenzene	0.23	0.08	0.23	0.08	98%	0.00	0.00
o-Xylene	2.66	0.93	2.66	0.93	98%	0.05	0.02
n-Hexane	12.46	14.04	12.46	14.04	98%	0.25	0.28
2,2,4-Trimethylpentane	0.00	--	0.00	0.00	98%	0.00	0.00
Decanes Plus	0.00	1.39E-04	0.00	0.00	98%	0.00	0.00
Decanes Plus Sat	0.00	--	0.00	0.00	98%	0.00	0.00
<b>Total</b>	<b>233.39</b>	<b>1022.24</b>	<b>233.39</b>	<b>515.85</b>	--	<b>17.66</b>	<b>27.37</b>
Total VOC	195.63	392.70	195.63	392.70	--	3.91	7.85
Total HAP	58.29	46.54	58.29	46.54	--	1.17	0.93
Heating Value (Btu/scf)	2,489.25	2,221.84	2,489.25	2,221.84			
Molecular Weight (lb/lbmol)	52.05	44.24	--	--			
Operating Hours (hr/yr)	8,760	8,760	--	--			
Mass Flow	233.39 lb/hr	1,022.24 ton/yr	233.39 lb/hr	1,022.24 ton/yr			
Volumetric Flow	1,702 scf/hr	15 MMscf/yr	1,702 scf/hr	15 MMscf/yr			
Heat Release (MMBtu/hr)	4.24 MMBtu/hr	37,104.61 MMBtu/yr	4.24 MMBtu/hr	37,104.61 MMBtu/yr			

Combustion Emissions from Combustion Device(s)				
	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
Total NO <sub>x</sub>	0.58	2.56	0.58	2.56
Total CO	1.17	5.11	1.17	5.11
Total SO <sub>2</sub>	0.24	1.01	0.24	1.01
Total PM <sub>10</sub>	0.013	0.06	0.01	0.06
Total PM <sub>2.5</sub>	0.01	0.06	0.01	0.06
Total VOC (slip)	3.91	7.85	3.91	7.85
Total HAP (slip)	1.17	0.93	1.17	0.93
Total n-Hexane (slip)	0.25	0.28	0.25	0.28
Total Benzene (slip)	0.38	0.37	0.38	0.37
Total CH <sub>4</sub>	0.05	0.22	0.05	0.22
Total N <sub>2</sub> O	0.002	0.00	0.00	0.00
Total CO <sub>2</sub>	774.70	1,451.22	774.70	1,451.22
Total CO <sub>2e</sub>	776.55	1,457.82	776.55	1,457.82

Criteria Pollutant Emissions Combustion Device(s) <sup>b</sup>			
Component	Emission Rate (lb/hr)	Emission Factor	Emission Factor Units
NO <sub>x</sub>	0.58	0.138	lb/MMBtu
CO	1.17	0.2755	lb/MMBtu
SO <sub>2</sub>	0.24	--	--
PM <sub>10</sub>	0.01	7.60	lb/MMscf
PM <sub>2.5</sub>	0.01	7.60	lb/MMscf
N <sub>2</sub> O	0.00	0.00022	lb/MMBtu
H <sub>2</sub> S	0.00	--	--

Combustion Device Destruction Efficiency C4+	98%
Combustion Device Efficiency C3	98%

H2S molecular weight	34.08
SO2 molecular weight	64.06
Molar Volume (scf/lbmol)	379.484
Combustor Operating Hours	8760

Large Glycol Unit - MACT HH Check		
# of Units	3	Limit
Flow per Dehy	71,593	85,000 SCF/Day
Benzene Emissions	0.19	1 ton/yr

**Footnotes:**

<sup>a</sup> Uncontrolled stream properties determined via ProMax.

<sup>b</sup> Flare CO and NO<sub>x</sub> emission factors from TCEQ Air Permit Technical Guidance for Chemical Sources. PM and PM<sub>2.5</sub> emission factors from AP-42, Table 1.4-1 and 1.4-2, July 1998. SO<sub>2</sub> emissions assume 100% conversion of H<sub>2</sub>S to SO<sub>2</sub>.

<sup>c</sup> Flash tank emissions are routed back to inlet slug catcher.

**XTO ENERGY INC.**  
**SPARTAN COMPRESSOR STATION**  
**DEHYDRATOR 1-3 VAPORS ROUTED TO REBOILER - SSM**

VOC/HAP SSM Emissions for Dehydration Units (DEHY1 - DEHY3) - Routed to RB1 - RB3

Uncontrolled Maximum Hourly Emission Rates and Composition to Combustion Device(s) <sup>a</sup>								
Stream	DEHY1-3 Still Column Emissions		Total Vapors to Combustion Device(s) (Uncontrolled)		Destruction Efficiency (%)	Total Combustion Device(s) Exhaust (controlled) <sup>d</sup>		
	Promax Stream Name	25. DEHY1-3 Max Hourly (lb/hr)	13. BTX Cond Vapors to Combustion (ton/yr)	(lb/hr)		(ton/yr)	(lb/hr)	(ton/yr)
Component		(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(%)	(lb/hr)	(ton/yr)
Triethylene Glycol		0.00	1.27E-09	0.00	0.00	70%	0.00	0.00
Water		10.60	0.20	10.60	0.20	0%	10.60	0.20
Hydrogen Sulfide		0.13	0.02	0.13	0.02	70%	0.04	0.01
Carbon Dioxide		2.64	0.39	2.64	0.39	0%	2.64	0.39
Nitrogen		0.01	1.43E-03	0.01	0.00	0%	0.01	0.00
Methane		7.98	1.19	7.98	1.19	70%	2.40	0.36
Ethane		16.39	2.41	16.39	2.41	70%	4.92	0.72
Propane		25.83	3.60	25.83	3.60	70%	7.75	1.08
Isobutane		7.36	0.91	7.36	0.91	70%	2.21	0.27
n-Butane		27.59	3.14	27.59	3.14	70%	8.28	0.94
Isopentane		12.66	1.08	12.66	1.08	70%	3.80	0.32
n-Pentane		19.83	1.49	19.83	1.49	70%	5.95	0.45
i-C6		23.80	1.15	23.80	1.15	70%	7.14	0.34
i-C7		18.29	0.45	18.29	0.45	70%	5.49	0.14
Octane		1.87	0.02	1.87	0.02	70%	0.56	0.01
Nonane		0.11	9.60E-04	0.11	0.00	70%	0.03	0.00
Benzene		19.12	0.64	19.12	0.64	70%	5.74	0.19
Toluene		23.82	0.44	23.82	0.44	70%	7.15	0.13
Ethylbenzene		0.23	2.80E-03	0.23	0.00	70%	0.07	0.00
o-Xylene		2.66	0.03	2.66	0.03	70%	0.80	0.01
n-Hexane		12.46	0.48	12.46	0.48	70%	3.74	0.14
2,2,4-Trimethylpentane		0.00	--	0.00	0.00	70%	0.00	0.00
Decanes Plus		0.00	4.76E-06	0.00	0.00	70%	0.00	0.00
Decanes Plus Sat		0.00	--	0.00	0.00	70%	0.00	0.00
<b>Total</b>		<b>233.39</b>	<b>35.01</b>	<b>233.39</b>	<b>17.67</b>	<b>--</b>	<b>79.30</b>	<b>5.72</b>
Total VOC		195.63	13.45	195.63	13.45	--	58.69	4.03
Total HAP		58.29	1.59	58.29	1.59	--	17.49	0.48
Heating Value (Btu/scf)		2,489.25	2,221.84	2,489.25	2,221.84			
Molecular Weight (lb/lbmol)		52.05	44.24	--	--			
Operating Hours (hr/yr)		300	300	--	--			
Mass Flow		233.39 lb/hr	35.01 ton/yr	233.39 lb/hr	35.01 ton/yr			
Volumetric Flow		1,702 scf/hr	1 MMscf/yr	1,702 scf/hr	1 MMscf/yr			
Heat Release (MMBtu/hr)		4.24 MMBtu/hr	1,270.71 MMBtu/yr	4.24 MMBtu/hr	1,270.71 MMBtu/yr			

Criteria Pollutant Emissions Combustion Device(s) <sup>b</sup>			
Component	Emission Rate (lb/hr)	Emission Factor	Emission Factor Units
NO <sub>x</sub>	0.58	0.138	lb/MMBtu
CO	1.17	0.2755	lb/MMBtu
SO <sub>2</sub>	0.24	--	--
PM <sub>10</sub>	0.01	7.60	lb/MMscf
PM <sub>2.5</sub>	0.01	7.60	lb/MMscf
N <sub>2</sub> O	0.00	0.00022	lb/MMBtu
H <sub>2</sub> S	0.04	--	--

Combustion Device Destruction Efficiency C4+	70%
Combustion Device Efficiency C3	70%

H2S molecular weight	34.08
SO2 molecular weight	64.06
Molar Volume (scf/lbmol)	379.484
Reboiler Operating Hours	300

Combustion Emissions from Combustion Device(s)				
	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
Total NO <sub>x</sub>	0.58	0.09	0.58	0.09
Total CO	1.17	0.18	1.17	0.18
Total SO <sub>2</sub>	0.24	0.03	0.24	0.03
Total PM <sub>10</sub>	0.013	0.00	0.01	0.00
Total PM <sub>2.5</sub>	0.01	0.00	0.01	0.00
Total VOC (slip)	58.69	4.03	58.69	4.03
Total HAP (slip)	17.49	0.48	17.49	0.48
Total n-Hexane (slip)	3.74	0.14	3.74	0.14
Total Benzene (slip)	5.74	0.19	5.74	0.19
Total CH <sub>4</sub>	0.74	0.11	0.74	0.11
Total N <sub>2</sub> O	0.002	0.00	0.00	0.00
Total CO <sub>2</sub>	554.00	35.59	554.00	35.59
Total CO <sub>2e</sub>	573.09	38.40	573.09	38.40

**Footnotes:**

- <sup>a</sup> Uncontrolled stream properties determined via ProMax.
- <sup>b</sup> Flare CO and NO<sub>x</sub> emission factors from TCEQ Air Permit Technical Guidance for Chemical Sources. PM and PM<sub>2.5</sub> emission factors from AP-42, Table 1.4-1 and 1.4-2, July 1998. SO<sub>2</sub> emissions assume 100% conversion of H<sub>2</sub>S to SO<sub>2</sub>.
- <sup>c</sup> Flash tank emissions are routed back to inlet slug catcher.
- <sup>d</sup> Condensator Vapors are shown as routed to reboiler during SSM activities.

XTO ENERGY, INC.

SPARTAN COMPRESSOR STATION

ROAD EMISSIONS

Total Suspended Particle Emissions	
$E = k(sL/2)^a(W/3)^b$	
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	357
Driving Distance Per Load (ft)	1000
Annual Distance (miles)	68
Control Efficiency - 15 MPH Limit	0.44
Emissions (lbs/hr)	0.60
Emissions (tpy)	0.11

PM <sub>10</sub> Emissions	
$E = k(sL/2)^a(W/3)^b$	
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 year	357
Driving Distance Per Load (ft)	1000
Annual Distance (miles)	68
Control Efficiency - 15 MPH Limit	0.44
Emissions (lbs/hr)	0.15
Emissions (tpy)	0.03

PM <sub>2.5</sub> Emissions	
$E = k(sL/2)^a(W/3)^b$	
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 year	357
Driving Distance Per Load (ft)	1000
Annual Distance (miles)	68
Control Efficiency - 15 MPH Limit	0.44
Emissions (lbs/hr)	0.02
Emissions (tpy)	0.00

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.**  
**SPARTAN COMPRESSOR STATION**  
**FUGITIVE EMISSIONS**

**FUGITIVE EMISSIONS CALCULATIONS**

<b>Operating Hours:</b>	8760 hours/year
<b>Emission Factor Source:</b>	Standard EFs - EPA-453/R-95-017 Table 2-4
<b>Control Efficiency Source:</b>	None
<b>Emission Buffer (%):</b>	0

Service	Component Type	Count	Emission Factor (lb/hr-source) <sup>a</sup>		Control (%) <sup>b</sup>	Pollutant	Mass Fraction <sup>c</sup>	Uncontrolled Emissions (lb/hr)	Uncontrolled Emissions (tpy)	Controlled Emissions (lb/hr)	Controlled Emissions (tpy)
			Table 2-4	Table 2-8							
Gas	Valves	720	9.92E-03	5.51E-05	0.0%	VOC	0.319	2.8393	12.4361	2.8393	12.4361
	Pump Seals	0	5.29E-03	7.72E-04	0.0%	H2S	0.000	0.0001	0.0004	0.0001	0.0004
	Connectors	1440	4.41E-04	2.20E-05	0.0%	Benzene	0.001	0.0069	0.0304	0.0069	0.0304
	Flanges	720	8.60E-04	1.26E-05	0.0%	Toluene	0.001	0.0102	0.0449	0.0102	0.0449
	Open-Ended Lines	72	4.41E-03	3.31E-05	0.0%	E-Benzene	0.000	0.0004	0.0020	0.0004	0.0020
	Other	10	1.94E-02	2.65E-04	0.0%	Xylenes	0.001	0.0053	0.0230	0.0053	0.0230
	Relief Valves	0	1.94E-02	2.65E-04	0.0%	n-Hexane	0.011	0.0951	0.4167	0.0951	0.4167
							0.000	0.0000	0.0000	0.0000	0.0000
							0.000	0.0000	0.0000	0.0000	0.0000
Heavy Oil	Valves	0	1.85E-05	1.85E-05	0.0%	VOC	0.978	0.0000	0.0000	0.0000	0.0000
	Pump Seals	0	0.00E+00	0.00E+00	0.0%	H2S	0.000	0.0000	0.0000	0.0000	0.0000
	Connectors	0	1.65E-05	1.65E-05	0.0%	Benzene	0.015	0.0000	0.0000	0.0000	0.0000
	Flanges	0	8.60E-06	8.60E-07	0.0%	Toluene	0.005	0.0000	0.0000	0.0000	0.0000
	Open-Ended Lines	0	3.09E-04	1.59E-05	0.0%	E-Benzene	0.012	0.0000	0.0000	0.0000	0.0000
	Other	0	3.09E-04	7.05E-05	0.0%	Xylenes	0.001	0.0000	0.0000	0.0000	0.0000
	Relief Valves	0	3.09E-04	7.05E-05	0.0%	n-Hexane	0.007	0.0000	0.0000	0.0000	0.0000
							0.085	0.0000	0.0000	0.0000	0.0000
							0.085	0.0000	0.0000	0.0000	0.0000
Light Oil	Valves	236	5.51E-03	4.19E-05	0.0%	VOC	0.978	1.9625	8.5958	1.9625	8.5958
	Pump Seals	15	2.87E-02	1.12E-03	0.0%	H2S	0.000	0.0000	0.0000	0.0000	0.0000
	Connectors	472	4.63E-04	2.14E-05	0.0%	Benzene	0.015	0.0303	0.1327	0.0303	0.1327
	Flanges	236	2.43E-04	5.29E-06	0.0%	Toluene	0.005	0.0100	0.0438	0.0100	0.0438
	Open-Ended Lines	0	2.87E-03	3.09E-05	0.0%	E-Benzene	0.012	0.0242	0.1058	0.0242	0.1058
	Other	0	1.65E-02	2.43E-04	0.0%	Xylenes	0.001	0.0026	0.0112	0.0026	0.0112
	Relief Valves	0	1.65E-02	2.43E-04	0.0%	n-Hexane	0.007	0.0135	0.0593	0.0135	0.0593
							0.085	0.1713	0.7502	0.1713	0.7502
							0.085	0.1713	0.7502	0.1713	0.7502
Water/Oil	Valves	153	2.16E-04	2.14E-05	0.0%	VOC	0.978	0.2573	1.1272	0.2573	1.1272
	Pump Seals	10	5.29E-05	5.29E-05	0.0%	H2S	0.000	0.0000	0.0000	0.0000	0.0000
	Connectors	306	2.43E-04	2.20E-05	0.0%	Benzene	0.015	0.0040	0.0174	0.0040	0.0174
	Flanges	153	6.39E-06	6.39E-06	0.0%	Toluene	0.005	0.0013	0.0057	0.0013	0.0057
	Open-Ended Lines	0	5.51E-04	7.72E-06	0.0%	E-Benzene	0.012	0.0032	0.0139	0.0032	0.0139
	Other	5	3.09E-02	1.30E-04	0.0%	Xylenes	0.001	0.0003	0.0015	0.0003	0.0015
	Relief Valves	0	3.09E-02	1.30E-04	0.0%	n-Hexane	0.007	0.0018	0.0078	0.0018	0.0078
							0.085	0.0225	0.0984	0.0225	0.0984
							0.085	0.0225	0.0984	0.0225	0.0984

**Fugitive Emission Summary**

Pollutant	Uncontrolled Emissions		Controlled Emissions	
	(lb/hr)	(tpy)	(lb/hr)	(tpy)
VOC	5.06	22.16	5.06	22.16
HAPs	0.40	1.76	0.40	1.76
H2S	0.00	0.00	0.00	0.00
Benzene	0.04	0.18	0.04	0.18
Toluene	0.02	0.09	0.02	0.09
E-Benzene	0.03	0.12	0.03	0.12
Xylenes	0.01	0.04	0.01	0.04
n-Hexane	0.11	0.48	0.11	0.48
2,2,4 Trimethylpentane	0.19	0.85	0.19	0.85

**Footnotes:**

<sup>a</sup> Factors are taken from EPA Document EPA-453/R-095-017, November 1995, Table 2-4

<sup>b</sup> Control efficiencies are taken from EPA Document EPA-453/R-095-017, November 1995, Table 5-2

<sup>c</sup> Gas/Vapor based inlet gas. Heavy Oil, Light Oil, and Water/Oil fugitives were based on liquid analysis of inlet separator hydrocarbon liquid.

**XTO ENERGY, INC.**  
**SPARTAN COMPRESSOR STATION**  
**FACILITY INLET GAS ANALYSIS - PROMAX**

**Gas Composition**

Component	Mole %	Weight %
TEG	0.000	0.0000
Water	0.000	0.0000
Hydrogen Sulfide	0.001	0.0010
Carbon Dioxide	0.151	0.2740
Nitrogen	0.641	0.9060
Methane	77.048	51.4490
Ethane	11.244	15.4990
Propane	5.100	11.9380
Isobutane	0.895	2.5270
n-Butane	1.860	6.2590
Isopentane	0.549	2.2310
n-Pentane	0.654	2.6240
Other C-6's	0.612	2.3740
Heptanes	0.525	1.7020
Octanes	0.208	0.5990
Nonanes	0.086	0.2130
Benzene	0.016	0.0780
Toluene	0.039	0.1150
E-Benzene	0.002	0.0050
Xylenes	0.027	0.0590
n-Hexane	0.309	1.0680
2,2,4 Trimethylpentane	0.000	0.0000
Decanes Plus	0.034	0.0800
Decanes Plus Satellite	0.000	0.0000
Total	100.001	100.0010

MOLECULAR WEIGHT	22.48
SATURATED BTU	1351
NMHC (WT%)	47.371
VOCs (WT%)	31.87
HAPs (WT%)	1.33
H2S (MOL%)	0.00



## Section 6.a

### Green House Gas Emissions

(Submitting under 20.2.70, 20.2.72 20.2.74 NMAC)

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**Title V (20.2.70 NMAC), Minor NSR (20.2.72 NMAC), and PSD (20.2.74 NMAC)** applicants must estimate and report greenhouse gas (GHG) emissions to verify the emission rates reported in the public notice, determine applicability to 40 CFR 60 Subparts, and to evaluate Prevention of Significant Deterioration (PSD) applicability. GHG emissions that are subject to air permit regulations consist of the sum of an aggregate group of these six greenhouse gases: carbon dioxide (CO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O), methane (CH<sub>4</sub>), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>).

#### Calculating GHG Emissions:

1. Calculate the ton per year (tpy) GHG mass emissions and GHG CO<sub>2</sub>e emissions from your facility.
2. GHG mass emissions are the sum of the total annual tons of greenhouse gases without adjusting with the global warming potentials (GWPs). GHG CO<sub>2</sub>e emissions are the sum of the mass emissions of each individual GHG multiplied by its GWP found in Table A-1 in 40 CFR 98 Mandatory Greenhouse Gas Reporting.
3. Emissions from routine or predictable start up, shut down, and maintenance must be included.
4. Report GHG mass and GHG CO<sub>2</sub>e 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 CO<sub>2</sub>e 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 CO<sub>2</sub>e emissions are less than 75,000 tons per year.

#### Sources for Calculating GHG Emissions:

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

#### Global Warming Potentials (GWP):

Applicants must use the Global Warming Potentials codified in Table A-1 of the most recent version of 40 CFR 98 Mandatory Greenhouse Gas Reporting. The GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to that of one unit mass of CO<sub>2</sub> 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.**  
**SPARTAN COMPRESSOR STATION**  
**COMPRESSOR ENGINES**

**Greenhouse Gas Emissions Calculations**

Source ID	Unit Description	Annual Hours	Rated HP	MMBtu/hp-hr <sup>1</sup> (HHV)	Engine Data		40 CFR 98 Factors <sup>2</sup>		lb/hr					tpy				
					g/hp-hr	lb/MMBtu	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CH <sub>4</sub> as CO <sub>2</sub> e	N <sub>2</sub> O as CO <sub>2</sub> e	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CH <sub>4</sub> as CO <sub>2</sub> e
ENG1	Caterpillar G3616 Natural Gas Compressor Engine	8760	5000	0.007481	493	0.00221	0.00022	5434.30	0.0825	0.0082	2.06	2.46	23802.25	0.36	0.04	9.03	10.77	23822.05
ENG2	Caterpillar G3616 Natural Gas Compressor Engine	8760	5000	0.007481	493	0.00221	0.00022	5434.30	0.0825	0.0082	2.06	2.46	23802.25	0.36	0.04	9.03	10.77	23822.05
ENG3	Caterpillar G3616 Natural Gas Compressor Engine	8760	5000	0.007481	493	0.00221	0.00022	5434.30	0.0825	0.0082	2.06	2.46	23802.25	0.36	0.04	9.03	10.77	23822.05
ENG4	Caterpillar G3616 Natural Gas Compressor Engine	8760	5000	0.007481	493	0.00221	0.00022	5434.30	0.0825	0.0082	2.06	2.46	23802.25	0.36	0.04	9.03	10.77	23822.05
ENG5	Caterpillar G3616 Natural Gas Compressor Engine	8760	5000	0.007481	493	0.00221	0.00022	5434.30	0.0825	0.0082	2.06	2.46	23802.25	0.36	0.04	9.03	10.77	23822.05
ENG6	Caterpillar G3616 Natural Gas Compressor Engine	8760	5000	0.007481	493	0.00221	0.00022	5434.30	0.0825	0.0082	2.06	2.46	23802.25	0.36	0.04	9.03	10.77	23822.05
ENG7	Caterpillar G3616 Natural Gas Compressor Engine	8760	5000	0.0075	447	0.00221	0.00022	4927.25	0.0827	0.0083	2.07	2.46	21581.35	0.36	0.04	9.03	10.77	21601.15
ENG8	Caterpillar G3616 Natural Gas Compressor Engine	8760	5000	0.0075	447	0.00221	0.00022	4927.25	0.0827	0.0083	2.07	2.46	21581.35	0.36	0.04	9.03	10.77	21601.15
ENG9	Caterpillar G3616 Natural Gas Compressor Engine	8760	5000	0.0075	447	0.00221	0.00022	4927.25	0.0827	0.0083	2.07	2.46	21581.35	0.36	0.04	9.05	10.79	21601.20
ENG11	Caterpillar 3516j TA Natural Gas Compressor Engine	8760	1380	0.007962	530	0.00221	0.00022	1612.43	0.0242	0.0024	0.61	0.72	7062.46	0.11	0.01	2.65	3.16	7068.28
ENG12	Caterpillar 3516j TA Natural Gas Compressor Engine	8760	1380	0.007962	530	0.00221	0.00022	1612.43	0.0242	0.0024	0.61	0.72	7062.46	0.11	0.01	2.65	3.16	7068.28

<sup>1</sup>HHV is based on the Fuel Consumption Rate @ 75% Load from the Gas Engine Rating Pro Report  
<sup>2</sup>Warming potential for CH<sub>4</sub> is 25. N<sub>2</sub>O is 298.

Total Emissions (TPY)	Total CO <sub>2</sub> e
	<b>221872.31</b>

**XTO ENERGY, INC.**  
**SPARTAN COMPRESSOR STATION**  
**HPF FLARE BLOWDOWN GAS ROUTED TO FLARE (EXAMPLE CALCULATION)**

**Greenhouse Gas Emissions Sample Calculation**

1)  $E_{s,CH_4} = V_a * X_{CH_4} * [(1-\eta) * Z_L + Z_U]$  = 10,452.68 SCF/Yr  
 $V_a = 951,570.00$   
 $X_{CH_4} = 0.54923328$   
 $N = 0.98$   
 $Z_L = 1.00$   
 $Z_U = 0.00$

Source	Annual Volume
17. HPF Blowdowns	951,570.00
<b>Total</b>	<b>951,570.00</b>

2)  $E_{s,CO_2} \text{ (uncombusted)} = V_a * X_{CO_2}$  = 2,809.89 SCF/Yr  
 $V_a = 951,570.00$   
 $X_{CO_2} = 0.0030$

3)  $E_{s,CO_2} \text{ (combusted)} = \sum (\eta * V_a * Y_j * R_j * Z_L)$   
 $N = 0.98$   
 $V_a = 951,570.00$   

$Y_j =$		$R_j =$		$E_{a,CO_2} =$
Methane	0.5492	1		512,181.23
Ethane	0.1502	2		280,195.87
Propane	0.0999	3		279,562.05
Butane	0.0712	4		265,408.58
Pentane +	0.1067	5		497,387.03

 $Z_L = 1.00$       **1,834,734.76**      SCF/Yr

4)  $Mass_{s,i} = E_{s,i} * \rho_i * 10^3$   
 $E_{s,i} \text{ (CH}_4\text{)} = 10,452.68$   
 $E_{s,i} \text{ (CO}_2\text{)} = 1,837,544.65$   
 $p_i \text{ (CH}_4\text{)} = 0.0192 \text{ kg/ft}^3 = 0.20 \text{ metric tons}$   
 $p_i \text{ (CO}_2\text{)} = 0.0526 \text{ kg/ft}^3 = 96.65 \text{ metric tons}$

5)  $CO_2e = CO_2 + (CH_4 * GWP)$       short tons       $CO_2e$   
 $CO_2 = 96.65 = 106.54 \text{ } CO_2e$   
 $CH_4 = 0.20 = 0.22 \text{ } CO_2e$   
**CH4 GWP = 25      112.07**

**Footnotes:**

\* Source is 40 CFR § 98.233 (n), 40 CFR § 98.233(v) for CH4 and CO2 mass emissions, 40 CFR § 98.233(z) for N2O mass emissions.

**Tab 7**  
**Section 7 - Information Used To Determine**  
**Emissions**

# Section 7

## Information Used To Determine Emissions

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**Information Used to Determine Emissions shall include the following:**

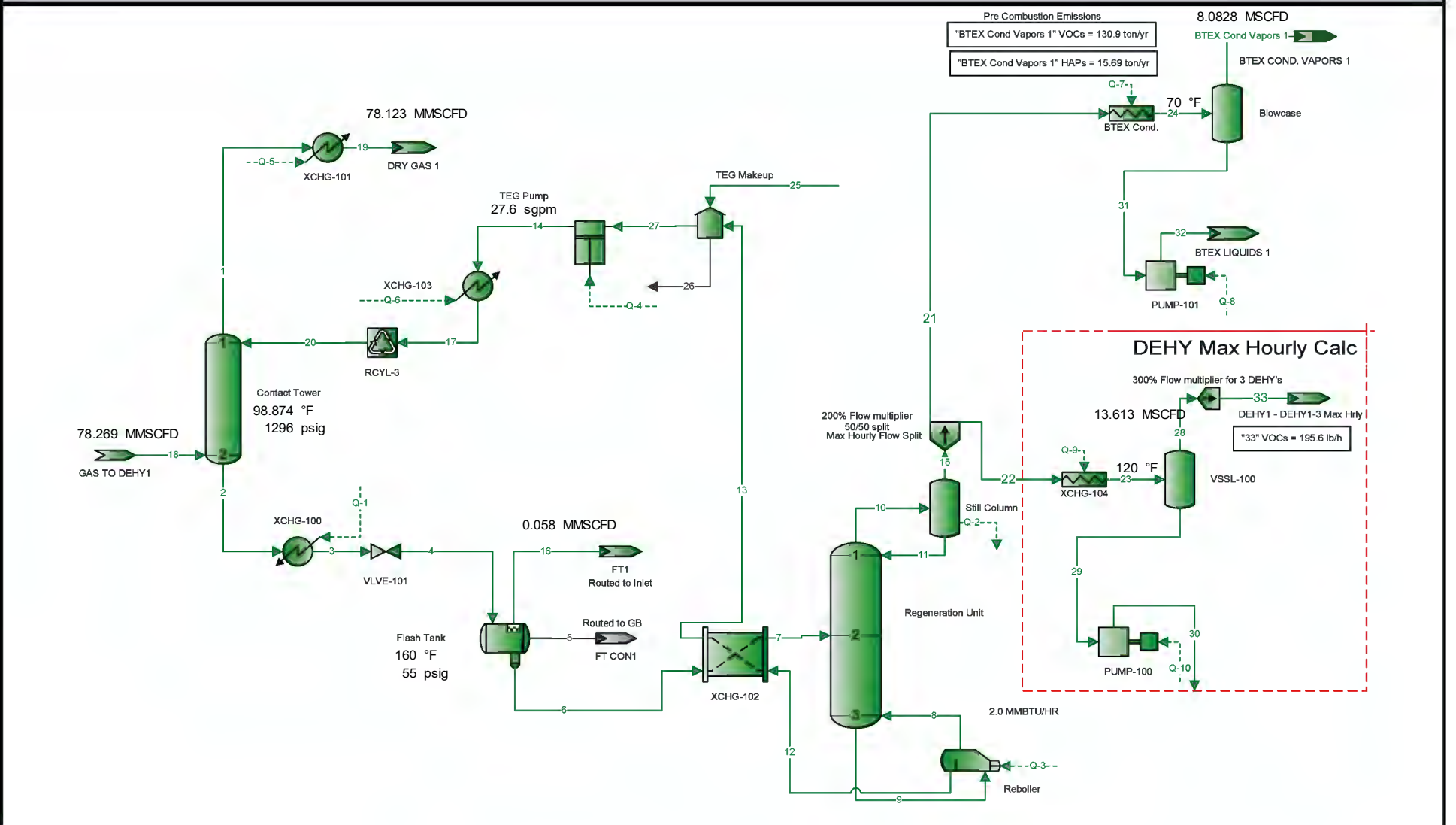
- If manufacturer data are used, include specifications for emissions units and control equipment, including control efficiencies specifications and sufficient engineering data for verification of control equipment operation, including design drawings, test reports, and design parameters that affect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

The Spartan Compressor Station gas inlet composition was from a gas sample of the inlet to the Maverick Compressor Station, which is identical in operation to the Spartan CS.

All supporting documentation is provided in this section.

# Dehy 1 Plant Schematic

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 1	



\* User Specified Values  
? Extrapolated or Approximate Values

	<b>Process Streams Report</b> <b>All Streams</b> Tabulated by Total Phase	
--	---	--

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 1	

Connections					
-------------	--	--	--	--	--

	BTEX Cond Vapors 1	1	2	3	4
From Block	Blowcase	Contact Tower	Contact Tower	XCHG-100	VLVE-101
To Block	BTEX COND. VAPORS 1	XCHG-101	XCHG-100	VLVE-101	Flash Tank

Stream Composition					
--------------------	--	--	--	--	--

	BTEX Cond Vapors 1	1	2	3	4
Mass Flow	lb/h	lb/h	lb/h	lb/h	lb/h
Triethylene Glycol	2.84705E-09	1.4518	15442.7	15442.7	15442.7
Water	0.450577	6.23046	274.358	274.358	274.358
Hydrogen Sulfide	0.0410911	2.90055	0.0680852	0.0680852	0.0680852
Carbon Dioxide	0.870473	575.722	3.23507	3.23507	3.23507
Nitrogen	0.0031847	1561.41	0.261439	0.261439	0.261439
Methane	2.65393	107418	61.0214	61.0214	61.0214
Ethane	5.351	29234.9	41.5367	41.5367	41.5367
Propane	8.01028	19200.3	39.0793	39.0793	39.0793
Isobutane	2.03135	4343.67	9.03324	9.03324	9.03324
n-Butane	6.98469	8878.78	26.756	26.756	26.756
Isopentane	2.40259	3072.57	9.99419	9.99419	9.99419
n-Pentane	3.30874	3550.9	14.708	14.708	14.708
i-C6	2.55199	3386.63	16.1274	16.1274	16.1274
i-C7	1.00713	2311.29	15.1565	15.1565	15.1565
Octane	0.0520159	331.209	3.37407	3.37407	3.37407
Nonane	0.00213516	29.0157	0.377883	0.377883	0.377883
Benzene	1.42186	62.4533	11.1142	11.1142	11.1142
Toluene	0.974053	96.2195	25.0889	25.0889	25.0889
Ethylbenzene	0.00621697	2.09566	0.592284	0.592284	0.592284
o-Xylene	0.0703699	19.2344	7.95838	7.95838	7.95838
n-Hexane	1.06953	1560.62	8.51278	8.51278	8.51278
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	1.05807E-05	0.247175	0.0145296	0.0145296	0.0145296
Decanes Plus Sat	0	0	0	0	0

	BTEX Cond Vapors 1	1	2	3	4
Mole Fraction	%	%	%	%	%
Triethylene Glycol	2.13621E-09	0.000112704	81.5219	81.5219	81.5219
Water	2.81818	0.00403185	12.0731	12.0731	12.0731
Hydrogen Sulfide	0.135856	0.000992191	0.00158375	0.00158375	0.00158375
Carbon Dioxide	2.22869	0.152508	0.0582748	0.0582748	0.0582748
Nitrogen	0.0128098	0.649797	0.00739856	0.00739856	0.00739856
Methane	18.6406	78.0609	3.01547	3.01547	3.01547
Ethane	20.0519	11.3346	1.09511	1.09511	1.09511
Propane	20.4688	5.07621	0.702578	0.702578	0.702578
Isobutane	3.93806	0.871245	0.12321	0.12321	0.12321
n-Butane	13.5408	1.78089	0.364941	0.364941	0.364941
Isopentane	3.75225	0.496477	0.109815	0.109815	0.109815
n-Pentane	5.16742	0.573766	0.16161	0.16161	0.16161
i-C6	3.33685	0.458153	0.148363	0.148363	0.148363
i-C7	1.13253	0.268908	0.119913	0.119913	0.119913
Octane	0.05131	0.0338029	0.0234166	0.0234166	0.0234166
Nonane	0.00187584	0.00263745	0.00233575	0.00233575	0.00233575
Benzene	2.05107	0.00932104	0.112799	0.112799	0.112799
Toluene	1.19119	0.0121744	0.215866	0.215866	0.215866
Ethylbenzene	0.00659839	0.000230126	0.00442275	0.00442275	0.00442275
o-Xylene	0.0746871	0.00211214	0.0594274	0.0594274	0.0594274
n-Hexane	1.39846	0.211126	0.0783126	0.0783126	0.0783126
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	7.77195E-06	1.87847E-05	7.50882E-05	7.50882E-05	7.50882E-05

\* User Specified Values  
 ? Extrapolated or Approximate Values



**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 1	

	BTEX Cond Vapors 1	1	2	3	4
Mole Fraction	%	%	%	%	%
Decanes Plus Sat	0	0	0	0	0

	BTEX Cond Vapors 1	1	2	3	4
Mass Fraction	%	%	%	%	%
Triethylene Glycol	7.2512E-09	0.000782024	96.4501	96.4501	96.4501
Water	1.14758	0.00335609	1.71355	1.71355	1.71355
Hydrogen Sulfide	0.104655	0.00156241	0.000425239	0.000425239	0.000425239
Carbon Dioxide	2.21702	0.310118	0.0202052	0.0202052	0.0202052
Nitrogen	0.00811116	0.841069	0.00163286	0.00163286	0.00163286
Methane	6.75933	57.8619	0.38112	0.38112	0.38112
Ethane	13.6285	15.7476	0.259425	0.259425	0.259425
Propane	20.4015	10.3424	0.244077	0.244077	0.244077
Isobutane	5.17367	2.33975	0.0564187	0.0564187	0.0564187
n-Butane	17.7894	4.78263	0.16711	0.16711	0.16711
Isopentane	6.11919	1.65507	0.0624206	0.0624206	0.0624206
n-Pentane	8.42707	1.91272	0.0918614	0.0918614	0.0918614
i-C6	6.49969	1.82424	0.100727	0.100727	0.100727
i-C7	2.56508	1.245	0.0946626	0.0946626	0.0946626
Octane	0.13248	0.178409	0.0210734	0.0210734	0.0210734
Nonane	0.00543806	0.0156295	0.00236014	0.00236014	0.00236014
Benzene	3.62136	0.033641	0.0694157	0.0694157	0.0694157
Toluene	2.48083	0.0518295	0.156698	0.156698	0.156698
Ethylbenzene	0.0158341	0.00112885	0.00369922	0.00369922	0.00369922
o-Xylene	0.179226	0.0103608	0.0497056	0.0497056	0.0497056
n-Hexane	2.724	0.840644	0.0531682	0.0531682	0.0531682
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	2.69481E-05	0.000133143	9.07473E-05	9.07473E-05	9.07473E-05
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	BTEX Cond Vapors 1	1	2	3	4
Temperature	°F	70	99.0828	99.5987	155 *	159.551
Pressure	psig	0	1291	1296	1286	60 *
Molecular Weight	lb/lbmol	44.2412	21.6427	126.93	126.93	126.93
Mass Flow	lb/h	39.2632	185646	16011.1	16011.1	16011.1
Std Vapor Volumetric Flow	MMSCFD	0.00808285	78.123	1.14885	1.14885	1.14885
Std Liquid Volumetric Flow	sgpm	0.151411	1051.2	29.1142	29.1142	29.1142
API Gravity				-3.23778	-3.23599	
Net Ideal Gas Heating Value	Btu/ft^3	2222.12	1176.43	3199.06	3199.06	3199.06

Remarks

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 1	

**Connections**

	5	6	7	8	9
From Block	Flash Tank	Flash Tank	XCHG-102	Reboiler	Regeneration Unit
To Block	FT CON1	XCHG-102	Regeneration Unit	Regeneration Unit	Reboiler

**Stream Composition**

Mass Flow	5 lb/h	6 lb/h	7 lb/h	8 lb/h	9 lb/h
Triethylene Glycol	0	15442.7	15442.7	235.875	15678.3
Water	0	273.608	273.608	315.25	445.051
Hydrogen Sulfide	0	0.0434527	0.0434527	0.000264153	0.000272909
Carbon Dioxide	0	0.884842	0.884842	0.000408987	0.000413507
Nitrogen	0	0.00318758	0.00318758	1.35613E-08	1.35838E-08
Methane	0	2.66389	2.66389	7.14339E-05	7.16867E-05
Ethane	0	5.48953	5.48953	0.000785226	0.00079081
Propane	0	8.72818	8.72818	0.00321741	0.00325176
Isobutane	0	2.53723	2.53723	0.00153567	0.00155644
n-Butane	0	9.65568	9.65568	0.00951401	0.00966845
Isopentane	0	4.69455	4.69455	0.00918287	0.00938779
n-Pentane	0	7.56043	7.56043	0.0185978	0.0190494
i-C6	0	10.2998	10.2998	0.0901733	0.0944583
i-C7	0	11.0619	11.0619	0.0973696	0.101479
Octane	0	2.88262	2.88262	0.067358	0.0714866
Nonane	0	0.344105	0.344105	0.0157531	0.0170601
Benzene	0	10.6949	10.6949	1.77386	2.02529
Toluene	0	24.5575	24.5575	8.11413	9.70666
Ethylbenzene	0	0.584598	0.584598	0.322719	0.409303
o-Xylene	0	7.88386	7.88386	5.62065	7.41455
n-Hexane	0	5.83944	5.83944	0.065208	0.0686576
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0	0.0142906	0.0142906	0.00647329	0.00797337
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	5 %	6 %	7 %	8 %	9 %
Triethylene Glycol		85.8536	85.8536	8.16336	80.7343
Water		12.6799	12.6799	90.948	19.1038
Hydrogen Sulfide		0.00106447	0.00106447	4.02832E-05	6.19238E-06
Carbon Dioxide		0.016786	0.016786	4.82994E-05	7.26586E-06
Nitrogen		9.49998E-05	9.49998E-05	2.51602E-09	3.74978E-10
Methane		0.138635	0.138635	2.31426E-05	3.45556E-06
Ethane		0.15242	0.15242	0.000135723	2.03378E-05
Propane		0.165255	0.165255	0.000379218	5.7026E-05
Isobutane		0.0364456	0.0364456	0.00013732	2.07081E-05
n-Butane		0.138697	0.138697	0.000850747	0.000128637
Isopentane		0.054324	0.054324	0.000661497	0.00010062
n-Pentane		0.0874873	0.0874873	0.00133971	0.000204175
i-C6		0.0997868	0.0997868	0.00543843	0.000847632
i-C7		0.0921684	0.0921684	0.0050504	0.000783162
Octane		0.0210688	0.0210688	0.00306474	0.00048395
Nonane		0.00223998	0.00223998	0.000638367	0.000102862
Benzene		0.114311	0.114311	0.118027	0.0200503
Toluene		0.222521	0.222521	0.457699	0.0814665
Ethylbenzene		0.0045973	0.0045973	0.0157987	0.00298136
o-Xylene		0.0619991	0.0619991	0.275159	0.0540075
n-Hexane		0.0565738	0.0565738	0.00393275	0.000616106
2,2,4-Trimethylpentane		0	0	0	0
Decanes Plus		7.77774E-05	7.77774E-05	0.00021932	4.01945E-05
Decanes Plus Sat		0	0	0	0

\* 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:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 1	

Mass Fraction	5 %	6 %	7 %	8 %	9 %
Triethylene Glycol		97.5365	97.5365	41.5754	97.1195
Water		1.72812	1.72812	55.5661	2.75687
Hydrogen Sulfide		0.000274449	0.000274449	4.65598E-05	1.69054E-06
Carbon Dioxide		0.00558869	0.00558869	7.20882E-05	2.56147E-06
Nitrogen		2.01329E-05	2.01329E-05	2.39032E-09	8.41449E-11
Methane		0.0168252	0.0168252	1.2591E-05	4.44064E-07
Ethane		0.0346721	0.0346721	0.000138404	4.89868E-06
Propane		0.0551275	0.0551275	0.000567101	2.0143E-05
Isobutane		0.0160252	0.0160252	0.000270678	9.64139E-06
n-Butane		0.0609856	0.0609856	0.00167694	5.98913E-05
Isopentane		0.0296509	0.0296509	0.00161858	5.81527E-05
n-Pentane		0.0477519	0.0477519	0.00327806	0.000118002
i-C6		0.0650539	0.0650539	0.015894	0.000585123
i-C7		0.0698675	0.0698675	0.0171624	0.000628614
Octane		0.0182067	0.0182067	0.0118726	0.000442824
Nonane		0.00217338	0.00217338	0.00277665	0.000105679
Benzene		0.0675496	0.0675496	0.312662	0.0125457
Toluene		0.155106	0.155106	1.4302	0.0601279
Ethylbenzene		0.00369234	0.00369234	0.0568825	0.00253543
o-Xylene		0.0497948	0.0497948	0.990698	0.0459295
n-Hexane		0.0368821	0.0368821	0.0114936	0.0004253
2,2,4-Trimethylpentane		0	0	0	0
Decanes Plus		9.02601E-05	9.02601E-05	0.00114098	4.93911E-05
Decanes Plus Sat		0	0	0	0

**Stream Properties**

Property	Units	5	6	7	8	9
Temperature	°F		159.542	290 *	395 *	311.316
Pressure	psig	55	55	35 *	0.5	0.5
Molecular Weight	lb/lbmol		132.185	132.185	29.4866	124.837
Mass Flow	lb/h	0	15832.7	15832.7	567.342	16143.3
Std Vapor Volumetric Flow	MMSCFD	0	1.09088	1.09088	0.175237	1.17775
Std Liquid Volumetric Flow	sgpm	0	28.2326	28.2326	1.08485	28.6818
API Gravity			-5.71004			-6.13036
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>		3290.42	3290.42	347.555	3056.36

**Remarks**

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 1	

**Connections**

	10	11	12	13	14
From Block	Regeneration Unit	Still Column	Reboiler	XCHG-102	TEG Pump
To Block	Still Column	Regeneration Unit	XCHG-102	TEG Makeup	XCHG-103

**Stream Composition**

Mass Flow	10 lb/h	11 lb/h	12 lb/h	13 lb/h	14 lb/h
Triethylene Glycol	8.31625	8.08633	15442.4	15442.4	15444.2
Water	145.846	2.03867	129.801	129.801	129.802
Hydrogen Sulfide	0.0434489	4.90915E-06	8.756E-06	8.756E-06	8.756E-06
Carbon Dioxide	0.884862	2.48872E-05	4.52035E-06	4.52035E-06	4.52035E-06
Nitrogen	0.00318758	4.75727E-09	2.24874E-11	2.24874E-11	0
Methane	2.6639	1.12574E-05	2.52867E-07	2.52867E-07	0
Ethane	5.48958	5.72814E-05	5.58438E-06	5.58438E-06	5.58438E-06
Propane	8.72829	0.000147208	3.43517E-05	3.43517E-05	3.43517E-05
Isobutane	2.53726	4.98468E-05	2.077E-05	2.077E-05	2.077E-05
n-Butane	9.65581	0.000285517	0.000154439	0.000154439	0.000154439
Isopentane	4.69453	0.000183519	0.000204921	0.000204921	0.000204921
n-Pentane	7.56031	0.000333947	0.000451612	0.000451612	0.000451612
i-C6	10.2963	0.000773452	0.00428502	0.00428502	0.00428502
i-C7	11.0587	0.000877296	0.00410976	0.00410976	0.00410976
Octane	2.87891	0.000418592	0.00412856	0.00412856	0.00412856
Nonane	0.342862	6.4137E-05	0.00130695	0.00130695	0.00130695
Benzene	10.4523	0.00881993	0.251432	0.251432	0.251432
Toluene	22.9965	0.0315084	1.59253	1.59253	1.59253
Ethylbenzene	0.499005	0.000991586	0.0865847	0.0865847	0.0865847
o-Xylene	6.10632	0.0163612	1.7939	1.7939	1.7939
n-Hexane	5.83646	0.000469342	0.00344962	0.00344962	0.00344962
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.0128123	2.17349E-05	0.00150008	0.00150008	0.00150008
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	10 %	11 %	12 %	13 %	14 %
Triethylene Glycol	0.561079	32.1137	93.4195	93.4195	93.4201
Water	82.0239	67.4894	6.54562	6.54562	6.54498
Hydrogen Sulfide	0.0129168	8.59066E-05	2.33404E-07	2.33404E-07	2.33379E-07
Carbon Dioxide	0.203712	0.000337257	9.33123E-08	9.33123E-08	9.33024E-08
Nitrogen	0.00115288	1.0128E-07	7.29267E-13	7.29267E-13	0
Methane	1.68242	0.000418504	1.43197E-08	1.43197E-08	0
Ethane	1.84973	0.00113612	1.68721E-07	1.68721E-07	1.68703E-07
Propane	2.0055	0.00199098	7.07727E-07	7.07727E-07	7.07652E-07
Isobutane	0.442294	0.000511477	3.24644E-07	3.24644E-07	3.24609E-07
n-Butane	1.6832	0.00292969	2.41395E-06	2.41395E-06	2.41369E-06
Isopentane	0.659251	0.00151699	2.5803E-06	2.5803E-06	2.58003E-06
n-Pentane	1.06169	0.00276045	5.68655E-06	5.68655E-06	5.68595E-06
i-C6	1.21056	0.0053528	4.51734E-05	4.51734E-05	4.51686E-05
i-C7	1.11819	0.00522157	3.72609E-05	3.72609E-05	3.72569E-05
Octane	0.255353	0.00218548	3.2835E-05	3.2835E-05	3.28315E-05
Nonane	0.0270852	0.000298239	9.25759E-06	9.25759E-06	9.25661E-06
Benzene	1.35576	0.0673409	0.00292427	0.00292427	0.00292396
Toluene	2.52877	0.203947	0.0157021	0.0157021	0.0157005
Ethylbenzene	0.0476224	0.00557032	0.000740923	0.000740923	0.000740844
o-Xylene	0.582756	0.0919106	0.0153508	0.0153508	0.0153492
n-Hexane	0.686206	0.00324816	3.63665E-05	3.63665E-05	3.63626E-05
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.000846232	8.45013E-05	8.88387E-06	8.88387E-06	8.88293E-06
Decanes Plus Sat	0	0	0	0	0

\* User Specified Values  
 ? Extrapolated or Approximate Values

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<b>Process Streams Report</b>					
<b>All Streams</b>					
Tabulated by Total Phase					

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 1	

Mass Fraction	10	11	12	13	14
	%	%	%	%	%
Triethylene Glycol	3.11583	79.3836	99.1426	99.1426	99.1427
Water	54.6436	20.0136	0.833341	0.833341	0.833255
Hydrogen Sulfide	0.0162789	4.81932E-05	5.62147E-08	5.62147E-08	5.62084E-08
Carbon Dioxide	0.331529	0.000244318	2.90213E-08	2.90213E-08	2.9018E-08
Nitrogen	0.00119428	4.67022E-08	1.44372E-13	1.44372E-13	0
Methane	0.998076	0.000110514	1.62344E-09	1.62344E-09	0
Ethane	2.05677	0.000562332	3.58525E-08	3.58525E-08	3.58485E-08
Propane	3.27021	0.00144514	2.20543E-07	2.20543E-07	2.20518E-07
Isobutane	0.950628	0.000489347	1.33346E-07	1.33346E-07	1.33331E-07
n-Butane	3.61772	0.00280293	9.9152E-07	9.9152E-07	9.91409E-07
Isopentane	1.75889	0.00180161	1.31562E-06	1.31562E-06	1.31547E-06
n-Pentane	2.8326	0.00327836	2.89941E-06	2.89941E-06	2.89908E-06
i-C6	3.85768	0.00759298	2.75104E-05	2.75104E-05	2.75073E-05
i-C7	4.14333	0.00861242	2.63852E-05	2.63852E-05	2.63823E-05
Octane	1.07863	0.00410932	2.65059E-05	2.65059E-05	2.65029E-05
Nonane	0.128459	0.000629634	8.39081E-06	8.39081E-06	8.38987E-06
Benzene	3.91615	0.0865853	0.00161423	0.00161423	0.00161405
Toluene	8.61604	0.309319	0.0102242	0.0102242	0.0102231
Ethylbenzene	0.186961	0.00973441	0.000555886	0.000555886	0.000555824
o-Xylene	2.28784	0.160618	0.0115171	0.0115171	0.0115158
n-Hexane	2.18673	0.00460753	2.2147E-05	2.2147E-05	2.21446E-05
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.00480035	0.000213372	9.63072E-06	9.63072E-06	9.62964E-06
Decanes Plus Sat	0	0	0	0	0

Stream Properties						
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Property	Units	10	11	12	13	14
Temperature	°F	290.846	215 *	395	269.234	270.291
Pressure	psig	0	0	0.5	0.5 *	1315 *
Molecular Weight	lb/lbmol	27.0422	60.7508	141.504	141.504	141.505
Mass Flow	lb/h	266.903	10.1864	15576	15576	15577.7
Std Vapor Volumetric Flow	MMSCFD	0.0898911	0.00152712	1.00252	1.00252	1.00262
Std Liquid Volumetric Flow	sgpm	0.654177	0.018529	27.5969	27.5969	27.6
API Gravity			-4.53746	-6.7351	-6.7351	-6.91889
Net Ideal Gas Heating Value	Btu/ft^3	585.138	1229.96	3529.85	3529.85	3529.87

**Remarks**

\* User Specified Values  
 ? Extrapolated or Approximate Values

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 1	

**Connections**

	15	16	17	18	19
From Block	Still Column	Flash Tank	XCHG-103	GAS TO DEHY1	XCHG-101
To Block	Max Hourly Flow Split	FT1	RCYL-3	Contact Tower	DRY GAS 1

**Stream Composition**

Mass Flow	15 lb/h	16 lb/h	17 lb/h	18 lb/h	19 lb/h
Triethylene Glycol	0.229918	0.010583	15444.2	7.94199E-20	1.4518
Water	143.807	0.750143	129.802	150.788	6.23046
Hydrogen Sulfide	0.0434439	0.0246325	8.756E-06	2.96863	2.90055
Carbon Dioxide	0.884837	2.35023	4.52035E-06	578.957	575.722
Nitrogen	0.00318758	0.258251	0	1561.67	1561.41
Methane	2.66389	58.3575	0	107479	107418
Ethane	5.48953	36.0472	5.58438E-06	29276.4	29234.9
Propane	8.72815	30.3511	3.43517E-05	19239.4	19200.3
Isobutane	2.53721	6.49601	2.077E-05	4352.7	4343.67
n-Butane	9.65552	17.1004	0.000154439	8905.53	8878.78
Isopentane	4.69434	5.29965	0.000204921	3082.57	3072.57
n-Pentane	7.55998	7.14755	0.000451612	3565.61	3550.9
i-C6	10.2955	5.8276	0.00428502	3402.75	3386.63
i-C7	11.0578	4.09456	0.00410976	2326.44	2311.29
Octane	2.87849	0.491456	0.00412856	334.579	331.209
Nonane	0.342798	0.0337787	0.00130695	29.3922	29.0157
Benzene	10.4435	0.41926	0.251432	73.3127	62.4533
Toluene	22.965	0.531422	1.59253	119.695	96.2195
Ethylbenzene	0.498013	0.00768648	0.0865847	2.60037	2.09566
o-Xylene	6.08996	0.0745228	1.7939	25.3838	19.2344
n-Hexane	5.83599	2.67335	0.00344962	1569.13	1560.62
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.0127905	0.000238971	0.00150008	0.260195	0.247175
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	15 %	16 %	17 %	18 %	19 %
Triethylene Glycol	0.0157802	0.00110729	93.4201	6.15391E-24	0.000112704
Water	82.2751	0.654258	6.54498	0.0973958	0.00403185
Hydrogen Sulfide	0.0131386	0.0113565	2.33379E-07	0.00101358	0.000992191
Carbon Dioxide	0.207227	0.839093	9.33024E-08	0.153078	0.152508
Nitrogen	0.0011728	0.144851	0	0.648691	0.649797
Methane	1.71149	57.1573	0	77.9593	78.0609
Ethane	1.88168	18.8364	1.68703E-07	11.3295	11.3346
Propane	2.04012	10.815	7.07652E-07	5.07704	5.07621
Isobutane	0.449929	1.75611	3.24609E-07	0.871425	0.871245
n-Butane	1.71224	4.62284	2.41369E-06	1.78292	1.78089
Isopentane	0.670618	1.15415	2.58003E-06	0.497161	0.496477
n-Pentane	1.07999	1.55659	5.68595E-06	0.575066	0.573766
i-C6	1.23139	1.06256	4.51686E-05	0.459474	0.458153
i-C7	1.13742	0.642062	3.72569E-05	0.270165	0.268908
Octane	0.259729	0.0676014	3.28315E-05	0.034083	0.0338029
Nonane	0.0275482	0.00413823	9.25661E-06	0.00266668	0.00263745
Benzene	1.37803	0.084336	0.00292396	0.0109213	0.00932104
Toluene	2.56895	0.0906244	0.0157005	0.0151165	0.0121744
Ethylbenzene	0.0483492	0.00113761	0.000740844	0.000285015	0.000230126
o-Xylene	0.591238	0.0110295	0.0153492	0.00278221	0.00211214
n-Hexane	0.698009	0.487437	3.63626E-05	0.21188	0.211126
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.000859396	2.44774E-05	8.88293E-06	1.97373E-05	1.87847E-05
Decanes Plus Sat	0	0	0	0	0

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**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 1	

Mass Fraction	15 %	16 %	17 %	18 %	19 %
Triethylene Glycol	0.0895611	0.00593391	99.1427	4.26806E-23	0.000782024
Water	56.0177	0.420609	0.833255	0.0810343	0.00335609
Hydrogen Sulfide	0.0169229	0.0138116	5.62084E-08	0.00159535	0.00156241
Carbon Dioxide	0.344675	1.31778	2.9018E-08	0.311134	0.310118
Nitrogen	0.00124167	0.144802	0	0.839251	0.841069
Methane	1.03768	32.7213	0	57.7599	57.8619
Ethane	2.13836	20.2118	3.58485E-08	15.7333	15.7476
Propane	3.39991	17.018	2.20518E-07	10.3394	10.3424
Isobutane	0.988329	3.64234	1.33331E-07	2.33916	2.33975
n-Butane	3.76116	9.58824	9.91409E-07	4.78587	4.78263
Isopentane	1.82861	2.97153	1.31547E-06	1.65659	1.65507
n-Pentane	2.94487	4.00766	2.89908E-06	1.91617	1.91272
i-C6	4.01045	3.26756	2.75073E-05	1.82865	1.82424
i-C7	4.3074	2.29584	2.63823E-05	1.25024	1.245
Octane	1.12127	0.275561	2.65029E-05	0.179804	0.178409
Nonane	0.133532	0.0189399	8.38987E-06	0.0157955	0.0156295
Benzene	4.0681	0.235081	0.00161405	0.0393986	0.033641
Toluene	8.94565	0.297971	0.0102231	0.0643249	0.0518295
Ethylbenzene	0.193993	0.00430984	0.000555824	0.00139745	0.00112885
o-Xylene	2.37225	0.0417853	0.0115158	0.0136414	0.0103608
n-Hexane	2.27332	1.49896	2.21446E-05	0.843259	0.840644
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.00498236	0.000133992	9.62964E-06	0.00013983	0.000133143
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	15	16	17	18	19
Temperature	°F	215	159.542	95 *	98.8743	90 *
Pressure	psig	0	55	1305	1296	1286
Molecular Weight	lb/lbmol	26.4596	28.0228	141.505	21.6527	21.6427
Mass Flow	lb/h	256.717	178.347	15577.7	186080	185646
Std Vapor Volumetric Flow	MMSCFD	0.088364	0.0579641	1.00262	78.2692	78.123
Std Liquid Volumetric Flow	sgpm	0.635648	0.881668	27.6	1052.72	1051.2
API Gravity				-6.9175		
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	573.994	1479.77	3529.87	1175.97	1176.43

**Remarks**

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 1	

**Connections**

	20	21	22	23	24
From Block	RCYL-3	Max Hourly Flow Split	Max Hourly Flow Split	XCHG-104	BTEX Cond.
To Block	Contact Tower	BTEX Cond.	XCHG-104	VSSL-100	Blowcase

**Stream Composition**

Mass Flow	20 lb/h	21 lb/h	22 lb/h	23 lb/h	24 lb/h
Triethylene Glycol	15444.1	0.229918	0.229918	0.229918	0.229918
Water	129.8	143.807	143.807	143.807	143.807
Hydrogen Sulfide	8.87997E-06	0.0434439	0.0434439	0.0434439	0.0434439
Carbon Dioxide	3.84591E-06	0.884837	0.884837	0.884837	0.884837
Nitrogen	0	0.00318758	0.00318758	0.00318758	0.00318758
Methane	0	2.66389	2.66389	2.66389	2.66389
Ethane	5.66926E-06	5.48953	5.48953	5.48953	5.48953
Propane	3.4872E-05	8.72815	8.72815	8.72815	8.72815
Isobutane	2.10852E-05	2.53721	2.53721	2.53721	2.53721
n-Butane	0.000156743	9.65552	9.65552	9.65552	9.65552
Isopentane	0.000207986	4.69434	4.69434	4.69434	4.69434
n-Pentane	0.000458386	7.55998	7.55998	7.55998	7.55998
i-C6	0.00434954	10.2955	10.2955	10.2955	10.2955
i-C7	0.00417288	11.0578	11.0578	11.0578	11.0578
Octane	0.00419419	2.87849	2.87849	2.87849	2.87849
Nonane	0.00132876	0.342798	0.342798	0.342798	0.342798
Benzene	0.254742	10.4435	10.4435	10.4435	10.4435
Toluene	1.61305	22.965	22.965	22.965	22.965
Ethylbenzene	0.0875745	0.498013	0.498013	0.498013	0.498013
o-Xylene	1.80893	6.08996	6.08996	6.08996	6.08996
n-Hexane	0.00350209	5.83599	5.83599	5.83599	5.83599
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.00150983	0.0127905	0.0127905	0.0127905	0.0127905
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	20 %	21 %	22 %	23 %	24 %
Triethylene Glycol	93.4198	0.0157802	0.0157802	0.0157802	0.0157802
Water	6.54489	82.2751	82.2751	82.2751	82.2751
Hydrogen Sulfide	2.36683E-07	0.0131386	0.0131386	0.0131386	0.0131386
Carbon Dioxide	7.93816E-08	0.207227	0.207227	0.207227	0.207227
Nitrogen	0	0.0011728	0.0011728	0.0011728	0.0011728
Methane	0	1.71149	1.71149	1.71149	1.71149
Ethane	1.71267E-07	1.88168	1.88168	1.88168	1.88168
Propane	7.18371E-07	2.04012	2.04012	2.04012	2.04012
Isobutane	3.29536E-07	0.449929	0.449929	0.449929	0.449929
n-Butane	2.44971E-06	1.71224	1.71224	1.71224	1.71224
Isopentane	2.61862E-06	0.670618	0.670618	0.670618	0.670618
n-Pentane	5.77125E-06	1.07999	1.07999	1.07999	1.07999
i-C6	4.58487E-05	1.23139	1.23139	1.23139	1.23139
i-C7	3.78292E-05	1.13742	1.13742	1.13742	1.13742
Octane	3.33535E-05	0.259729	0.259729	0.259729	0.259729
Nonane	9.41106E-06	0.0275482	0.0275482	0.0275482	0.0275482
Benzene	0.00296245	1.37803	1.37803	1.37803	1.37803
Toluene	0.0159028	2.56895	2.56895	2.56895	2.56895
Ethylbenzene	0.000749313	0.0483492	0.0483492	0.0483492	0.0483492
o-Xylene	0.0154777	0.591238	0.591238	0.591238	0.591238
n-Hexane	3.69157E-05	0.698009	0.698009	0.698009	0.698009
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	8.94069E-06	0.000859396	0.000859396	0.000859396	0.000859396
Decanes Plus Sat	0	0	0	0	0

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**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 1	

Mass Fraction	20 %	21 %	22 %	23 %	24 %
Triethylene Glycol	99.1425	0.0895611	0.0895611	0.0895611	0.0895611
Water	0.833243	56.0177	56.0177	56.0177	56.0177
Hydrogen Sulfide	5.70043E-08	0.0169229	0.0169229	0.0169229	0.0169229
Carbon Dioxide	2.46885E-08	0.344675	0.344675	0.344675	0.344675
Nitrogen	0	0.00124167	0.00124167	0.00124167	0.00124167
Methane	0	1.03768	1.03768	1.03768	1.03768
Ethane	3.63934E-08	2.13836	2.13836	2.13836	2.13836
Propane	2.23858E-07	3.39991	3.39991	3.39991	3.39991
Isobutane	1.35355E-07	0.988329	0.988329	0.988329	0.988329
n-Butane	1.0062E-06	3.76116	3.76116	3.76116	3.76116
Isopentane	1.33515E-06	1.82861	1.82861	1.82861	1.82861
n-Pentane	2.94258E-06	2.94487	2.94487	2.94487	2.94487
i-C6	2.79215E-05	4.01045	4.01045	4.01045	4.01045
i-C7	2.67875E-05	4.3074	4.3074	4.3074	4.3074
Octane	2.69243E-05	1.12127	1.12127	1.12127	1.12127
Nonane	8.52986E-06	0.133532	0.133532	0.133532	0.133532
Benzene	0.0016353	4.0681	4.0681	4.0681	4.0681
Toluene	0.0103548	8.94565	8.94565	8.94565	8.94565
Ethylbenzene	0.000562177	0.193993	0.193993	0.193993	0.193993
o-Xylene	0.0116123	2.37225	2.37225	2.37225	2.37225
n-Hexane	2.24814E-05	2.27332	2.27332	2.27332	2.27332
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	9.69227E-06	0.00498236	0.00498236	0.00498236	0.00498236
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	20	21	22	23	24
Temperature	°F	95	215	215	120 *	70 *
Pressure	psig	1305	0	0	0	0
Molecular Weight	lb/lbmol	141.505	26.4596	26.4596	26.4596	26.4596
Mass Flow	lb/h	15577.7	256.717	256.717	256.717	256.717
Std Vapor Volumetric Flow	MMSCFD	1.00262	0.088364	0.088364	0.088364	0.088364
Std Liquid Volumetric Flow	sgpm	27.6	0.635648	0.635648	0.635648	0.635648
API Gravity		-6.91737				
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	3529.88	573.994	573.994	573.994	573.994

**Remarks**

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 1	

**Connections**

	25	26	27	28	29
From Block	--	TEG Makeup	TEG Makeup	VSSL-100	VSSL-100
To Block	TEG Makeup	--	TEG Pump	300% Flow multiplier for 3 DEHY's	PUMP-100

**Stream Composition**

Mass Flow	25 lb/h	26 lb/h	27 lb/h	28 lb/h	29 lb/h
Triethylene Glycol	1.74196 *	0	15444.2	3.23092E-07	0.229918
Water	0.00105011 *	0	129.802	3.53446	140.272
Hydrogen Sulfide	0 *	0	8.756E-06	0.0428876	0.00055637
Carbon Dioxide	0 *	0	4.52035E-06	0.881332	0.00350512
Nitrogen	0 *	0	0	0.00318678	8.00171E-07
Methane	0 *	0	0	2.66146	0.00242261
Ethane	0 *	0	5.58438E-06	5.46313	0.026398
Propane	0 *	0	3.43517E-05	8.60849	0.119654
Isobutane	0 *	0	2.077E-05	2.45277	0.0844407
n-Butane	0 *	0	0.000154439	9.19779	0.457729
Isopentane	0 *	0	0.000204921	4.22155	0.472791
n-Pentane	0 *	0	0.000451612	6.60845	0.951523
i-C6	0 *	0	0.00428502	7.93284	2.36267
i-C7	0 *	0	0.00410976	6.09824	4.95957
Octane	0 *	0	0.00412856	0.623303	2.25519
Nonane	0 *	0	0.00130695	0.0353476	0.30745
Benzene	0 *	0	0.251432	6.37475	4.06875
Toluene	0 *	0	1.59253	7.93939	15.0256
Ethylbenzene	0 *	0	0.0865847	0.077411	0.420602
o-Xylene	0 *	0	1.7939	0.887321	5.20264
n-Hexane	0 *	0	0.00344962	4.15202	1.68397
2,2,4-Trimethylpentane	0 *	0	0	0	0
Decanes Plus	0 *	0	0.00150008	0.000235221	0.0125553
Decanes Plus Sat	0 *	0	0	0	0

Mole Fraction	25 %	26 %	27 %	28 %	29 %
Triethylene Glycol	99.5 *	93.4195	93.4201	1.43944E-07	0.0186538
Water	0.5 *	6.54562	6.54498	13.1263	94.8676
Hydrogen Sulfide	0 *	2.33404E-07	2.33379E-07	0.0841939	0.000198902
Carbon Dioxide	0 *	9.33123E-08	9.33024E-08	1.33984	0.000970383
Nitrogen	0 *	7.29267E-13	0	0.00761108	3.48019E-07
Methane	0 *	1.43197E-08	0	11.0997	0.00183992
Ethane	0 *	1.68721E-07	1.68703E-07	12.1558	0.0106964
Propane	0 *	7.07727E-07	7.07652E-07	13.0615	0.0330611
Isobutane	0 *	3.24644E-07	3.24609E-07	2.82341	0.0177009
n-Butane	0 *	2.41395E-06	2.41369E-06	10.5877	0.0959516
Isopentane	0 *	2.5803E-06	2.58003E-06	3.91474	0.079841
n-Pentane	0 *	5.68655E-06	5.68595E-06	6.12817	0.160686
i-C6	0 *	4.51734E-05	4.51686E-05	6.15894	0.334046
i-C7	0 *	3.72609E-05	3.72569E-05	4.07182	0.603051
Octane	0 *	3.2835E-05	3.28315E-05	0.365077	0.240544
Nonane	0 *	9.25759E-06	9.25661E-06	0.0184393	0.029207
Benzene	0 *	0.00292427	0.00292396	5.46017	0.634644
Toluene	0 *	0.0157021	0.0157005	5.7651	1.98691
Ethylbenzene	0 *	0.000740923	0.000740844	0.0487844	0.0482699
o-Xylene	0 *	0.0153508	0.0153492	0.55919	0.597075
n-Hexane	0 *	3.63665E-05	3.63626E-05	3.22356	0.238088
2,2,4-Trimethylpentane	0 *	0	0	0	0
Decanes Plus	0 *	8.88387E-06	8.88293E-06	0.000102591	0.000997216
Decanes Plus Sat	0 *	0	0	0	0

\* 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:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 1	

Mass Fraction	25 %	26 %	27 %	28 %	29 %
Triethylene Glycol	99.9398 *	99.1426	99.1427	4.15305E-07	0.128503
Water	0.0602469 *	0.833341	0.833255	4.54321	78.3994
Hydrogen Sulfide	0 *	5.62147E-08	5.62084E-08	0.055128	0.00031096
Carbon Dioxide	0 *	2.90213E-08	2.9018E-08	1.13287	0.00195904
Nitrogen	0 *	1.44372E-13	0	0.00409631	4.47222E-07
Methane	0 *	1.62344E-09	0	3.42106	0.00135401
Ethane	0 *	3.58525E-08	3.58485E-08	7.02234	0.0147541
Propane	0 *	2.20543E-07	2.20518E-07	11.0654	0.0668755
Isobutane	0 *	1.33346E-07	1.33331E-07	3.1528	0.0471946
n-Butane	0 *	9.9152E-07	9.91409E-07	11.8229	0.255828
Isopentane	0 *	1.31562E-06	1.31547E-06	5.42641	0.264246
n-Pentane	0 *	2.89941E-06	2.89908E-06	8.49455	0.531814
i-C6	0 *	2.75104E-05	2.75073E-05	10.1969	1.32051
i-C7	0 *	2.63852E-05	2.63823E-05	7.83872	2.77194
Octane	0 *	2.65059E-05	2.65029E-05	0.801198	1.26044
Nonane	0 *	8.39081E-06	8.38987E-06	0.0454361	0.171836
Benzene	0 *	0.00161423	0.00161405	8.19415	2.27405
Toluene	0 *	0.0102242	0.0102231	10.2053	8.39792
Ethylbenzene	0 *	0.000555886	0.000555824	0.0995046	0.235078
o-Xylene	0 *	0.0115171	0.0115158	1.14057	2.9078
n-Hexane	0 *	2.2147E-05	2.21446E-05	5.33703	0.941183
2,2,4-Trimethylpentane	0 *	0	0	0	0
Decanes Plus	0 *	9.63072E-06	9.62964E-06	0.000302355	0.00701727
Decanes Plus Sat	0 *	0	0	0	0

**Stream Properties**

Property	Units	25	26	27	28	29
Temperature	°F	85 *		269.215	120	120
Pressure	psig	0.5 *	0.5	0.5	0	0
Molecular Weight	lb/lbmol	149.512	141.504	141.505	52.0498	21.7995
Mass Flow	lb/h	1.74301	0	15577.7	77.7964	178.92
Std Vapor Volumetric Flow	MMSCFD	0.000106177	0	1.00262	0.0136127	0.0747512
Std Liquid Volumetric Flow	sgpm	0.0030849	0	27.6 *	0.257398	0.37825
API Gravity		-7.10455		-6.73513		17.9613
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	3757.91	3529.85	3529.87	2489.25	225.213

**Remarks**

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 1	

**Connections**

	30	31	32	33
From Block	PUMP-100	Blowcase	PUMP-101	300% Flow multiplier for 3 DEHY's
To Block	--	PUMP-101	BTEX LIQUIDS 1	DEHY1 - DEHY1-3 Max Hrly

**Stream Composition**

Mass Flow	30 lb/h	31 lb/h	32 lb/h	33 lb/h
Triethylene Glycol	0.229918	0.229918	0.229918	9.69277E-07
Water	140.272	143.356	143.356	10.6034
Hydrogen Sulfide	0.00055637	0.00235285	0.00235285	0.128663
Carbon Dioxide	0.00350512	0.0143648	0.0143648	2.644
Nitrogen	8.00171E-07	2.87685E-06	2.87685E-06	0.00956034
Methane	0.00242261	0.00995652	0.00995652	7.98439
Ethane	0.026398	0.138523	0.138523	16.3894
Propane	0.119654	0.717864	0.717864	25.8255
Isobutane	0.0844407	0.50586	0.50586	7.3583
n-Butane	0.457729	2.67083	2.67083	27.5934
Isopentane	0.472791	2.29175	2.29175	12.6647
n-Pentane	0.951523	4.25124	4.25124	19.8254
i-C6	2.36267	7.74352	7.74352	23.7985
i-C7	4.95957	10.0507	10.0507	18.2947
Octane	2.25519	2.82647	2.82647	1.86991
Nonane	0.30745	0.340663	0.340663	0.106043
Benzene	4.06875	9.02164	9.02164	19.1243
Toluene	15.0256	21.9909	21.9909	23.8182
Ethylbenzene	0.420602	0.491796	0.491796	0.232233
o-Xylene	5.20264	6.01959	6.01959	2.66196
n-Hexane	1.68397	4.76646	4.76646	12.4561
2,2,4-Trimethylpentane	0	0	0	0
Decanes Plus	0.0125553	0.01278	0.01278	0.000705663
Decanes Plus Sat	0	0	0	0

Mole Fraction	30 %	31 %	32 %	33 %
Triethylene Glycol	0.0186538	0.0173689	0.0173689	1.43944E-07
Water	94.8676	90.275	90.275	13.1263
Hydrogen Sulfide	0.000198902	0.000783204	0.000783204	0.0841939
Carbon Dioxide	0.000970383	0.00370291	0.00370291	1.33984
Nitrogen	3.48019E-07	1.16504E-06	1.16504E-06	0.00761108
Methane	0.00183992	0.0070409	0.0070409	11.0997
Ethane	0.0106964	0.0522629	0.0522629	12.1558
Propane	0.0330611	0.184688	0.184688	13.0615
Isobutane	0.0177009	0.0987369	0.0987369	2.82341
n-Butane	0.0959516	0.52131	0.52131	10.5877
Isopentane	0.079841	0.360354	0.360354	3.91474
n-Pentane	0.160686	0.668464	0.668464	6.12817
i-C6	0.334046	1.01941	1.01941	6.15894
i-C7	0.603051	1.13792	1.13792	4.07182
Octane	0.240544	0.280713	0.280713	0.365077
Nonane	0.029207	0.0301329	0.0301329	0.0184393
Benzene	0.634644	1.31027	1.31027	5.46017
Toluene	1.98691	2.70766	2.70766	5.7651
Ethylbenzene	0.0482699	0.0525527	0.0525527	0.0487844
o-Xylene	0.597075	0.643246	0.643246	0.55919
n-Hexane	0.238088	0.627486	0.627486	3.22356
2,2,4-Trimethylpentane	0	0	0	0
Decanes Plus	0.000997216	0.000945139	0.000945139	0.000102591

\* 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:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 1	

Mole Fraction	30 %	31 %	32 %	33 %
Decanes Plus Sat	0	0	0	0

Mass Fraction	30 %	31 %	32 %	33 %
Triethylene Glycol	0.128503	0.105732	0.105732	4.15305E-07
Water	78.3994	65.925	65.925	4.54321
Hydrogen Sulfide	0.00031096	0.001082	0.001082	0.055128
Carbon Dioxide	0.00195904	0.0066059	0.0066059	1.13287
Nitrogen	4.47222E-07	1.32297E-06	1.32297E-06	0.00409631
Methane	0.00135401	0.00457869	0.00457869	3.42106
Ethane	0.0147541	0.0637023	0.0637023	7.02234
Propane	0.0668755	0.330123	0.330123	11.0654
Isobutane	0.0471946	0.232629	0.232629	3.1528
n-Butane	0.255828	1.22823	1.22823	11.8229
Isopentane	0.264246	1.0539	1.0539	5.42641
n-Pentane	0.531814	1.95501	1.95501	8.49455
i-C6	1.32051	3.561	3.561	10.1969
i-C7	2.77194	4.62199	4.62199	7.83872
Octane	1.26044	1.29981	1.29981	0.801198
Nonane	0.171836	0.15666	0.15666	0.0454361
Benzene	2.27405	4.14877	4.14877	8.19415
Toluene	8.39792	10.1129	10.1129	10.2053
Ethylbenzene	0.235078	0.226161	0.226161	0.0995046
o-Xylene	2.9078	2.76822	2.76822	1.14057
n-Hexane	0.941183	2.19194	2.19194	5.33703
2,2,4-Trimethylpentane	0	0	0	0
Decanes Plus	0.00701727	0.0058771	0.0058771	0.000302355
Decanes Plus Sat	0	0	0	0

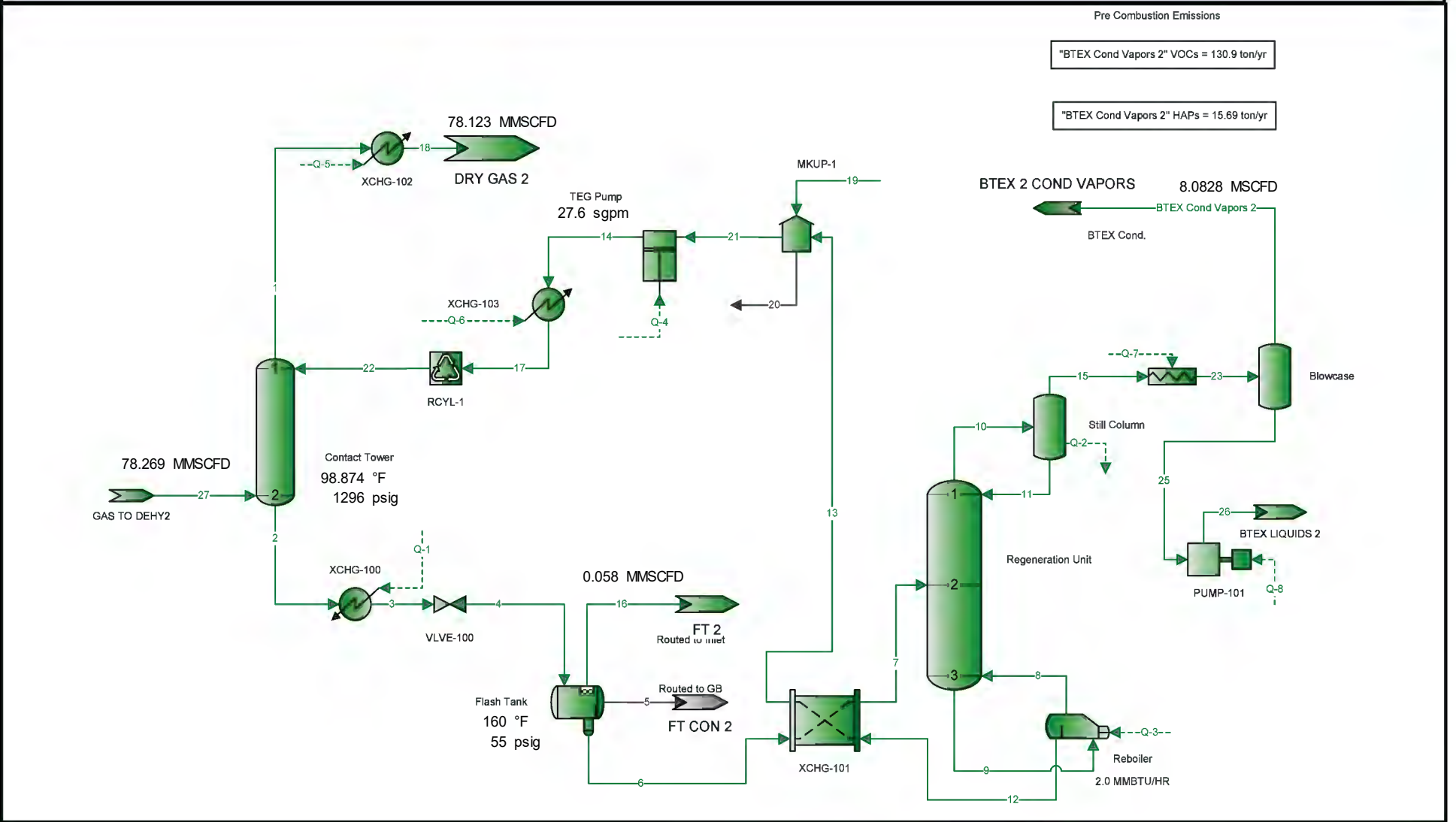
**Stream Properties**

Property	Units	30	31	32	33
Temperature	°F	136.221	70	84.4694	120
Pressure	psig	15 *	0	16 *	0
Molecular Weight	lb/lbmol	21.7995	24.6694	24.6694	52.0498
Mass Flow	lb/h	178.92	217.454	217.454	233.389
Std Vapor Volumetric Flow	MMSCFD	0.0747512	0.0802811	0.0802811	0.0408381
Std Liquid Volumetric Flow	sgpm	0.37825	0.484237	0.484237	0.772193
API Gravity		17.9885	25.4664	25.5291	
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	225.213	408.058	408.058	2489.25

**Remarks**

## Dehy 2 Plant Schematic

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 2	



\* User Specified Values  
 ? Extrapolated or Approximate Values

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 2	

**Connections**

	BTEX Cond Vapors 2	1	2	3	4
From Block	Blowcase	Contact Tower	Contact Tower	XCHG-100	VLVE-100
To Block	BTEX 2 COND VAPORS	XCHG-102	XCHG-100	VLVE-100	Flash Tank

**Stream Composition**

	BTEX Cond Vapors 2	1	2	3	4
Mass Flow	lb/h	lb/h	lb/h	lb/h	lb/h
Triethylene Glycol	2.84705E-09	1.4518	15442.7	15442.7	15442.7
Water	0.450577	6.23046	274.358	274.358	274.358
Hydrogen Sulfide	0.0410911	2.90055	0.0680852	0.0680852	0.0680852
Carbon Dioxide	0.870473	575.722	3.23507	3.23507	3.23507
Nitrogen	0.0031847	1561.41	0.261439	0.261439	0.261439
Methane	2.65393	107418	61.0214	61.0214	61.0214
Ethane	5.351	29234.9	41.5367	41.5367	41.5367
Propane	8.01028	19200.3	39.0793	39.0793	39.0793
Isobutane	2.03135	4343.67	9.03324	9.03324	9.03324
n-Butane	6.98469	8878.78	26.756	26.756	26.756
Isopentane	2.40259	3072.57	9.99419	9.99419	9.99419
n-Pentane	3.30874	3550.9	14.708	14.708	14.708
i-C6	2.55199	3386.63	16.1274	16.1274	16.1274
i-C7	1.00713	2311.29	15.1565	15.1565	15.1565
Octane	0.0520159	331.209	3.37407	3.37407	3.37407
Nonane	0.00213516	29.0157	0.377883	0.377883	0.377883
Benzene	1.42186	62.4533	11.1142	11.1142	11.1142
Toluene	0.974053	96.2195	25.0889	25.0889	25.0889
Ethylbenzene	0.00621697	2.09566	0.592284	0.592284	0.592284
o-Xylene	0.0703699	19.2344	7.95838	7.95838	7.95838
n-Hexane	1.06953	1560.62	8.51278	8.51278	8.51278
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	1.05807E-05	0.247175	0.0145296	0.0145296	0.0145296
Decanes Plus Sat	0	0	0	0	0

	BTEX Cond Vapors 2	1	2	3	4
Mole Fraction	%	%	%	%	%
Triethylene Glycol	2.13621E-09	0.000112704	81.5219	81.5219	81.5219
Water	2.81818	0.00403185	12.0731	12.0731	12.0731
Hydrogen Sulfide	0.135856	0.000992191	0.00158375	0.00158375	0.00158375
Carbon Dioxide	2.22869	0.152508	0.0582748	0.0582748	0.0582748
Nitrogen	0.0128098	0.649797	0.00739856	0.00739856	0.00739856
Methane	18.6406	78.0609	3.01547	3.01547	3.01547
Ethane	20.0519	11.3346	1.09511	1.09511	1.09511
Propane	20.4688	5.07621	0.702578	0.702578	0.702578
Isobutane	3.93806	0.871245	0.12321	0.12321	0.12321
n-Butane	13.5408	1.78089	0.364941	0.364941	0.364941
Isopentane	3.75225	0.496477	0.109815	0.109815	0.109815
n-Pentane	5.16742	0.573766	0.16161	0.16161	0.16161
i-C6	3.33685	0.458153	0.148363	0.148363	0.148363
i-C7	1.13253	0.268908	0.119913	0.119913	0.119913
Octane	0.05131	0.0338029	0.0234166	0.0234166	0.0234166
Nonane	0.00187584	0.00263745	0.00233575	0.00233575	0.00233575
Benzene	2.05107	0.00932104	0.112799	0.112799	0.112799
Toluene	1.19119	0.0121744	0.215866	0.215866	0.215866
Ethylbenzene	0.00659839	0.000230126	0.00442275	0.00442275	0.00442275
o-Xylene	0.0746871	0.00211214	0.0594274	0.0594274	0.0594274
n-Hexane	1.39846	0.211126	0.0783126	0.0783126	0.0783126
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	7.77195E-06	1.87847E-05	7.50882E-05	7.50882E-05	7.50882E-05

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**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 2	

	BTEX Cond Vapors 2	1	2	3	4
Mole Fraction	%	%	%	%	%
Decanes Plus Sat	0	0	0	0	0

	BTEX Cond Vapors 2	1	2	3	4
Mass Fraction	%	%	%	%	%
Triethylene Glycol	7.2512E-09	0.000782024	96.4501	96.4501	96.4501
Water	1.14758	0.00335609	1.71355	1.71355	1.71355
Hydrogen Sulfide	0.104655	0.00156241	0.000425239	0.000425239	0.000425239
Carbon Dioxide	2.21702	0.310118	0.0202052	0.0202052	0.0202052
Nitrogen	0.00811116	0.841069	0.00163286	0.00163286	0.00163286
Methane	6.75933	57.8619	0.38112	0.38112	0.38112
Ethane	13.6285	15.7476	0.259425	0.259425	0.259425
Propane	20.4015	10.3424	0.244077	0.244077	0.244077
Isobutane	5.17367	2.33975	0.0564187	0.0564187	0.0564187
n-Butane	17.7894	4.78263	0.16711	0.16711	0.16711
Isopentane	6.11919	1.65507	0.0624206	0.0624206	0.0624206
n-Pentane	8.42707	1.91272	0.0918614	0.0918614	0.0918614
i-C6	6.49969	1.82424	0.100727	0.100727	0.100727
i-C7	2.56508	1.245	0.0946626	0.0946626	0.0946626
Octane	0.13248	0.178409	0.0210734	0.0210734	0.0210734
Nonane	0.00543806	0.0156295	0.00236014	0.00236014	0.00236014
Benzene	3.62136	0.033641	0.0694157	0.0694157	0.0694157
Toluene	2.48083	0.0518295	0.156698	0.156698	0.156698
Ethylbenzene	0.0158341	0.00112885	0.00369922	0.00369922	0.00369922
o-Xylene	0.179226	0.0103608	0.0497056	0.0497056	0.0497056
n-Hexane	2.724	0.840644	0.0531682	0.0531682	0.0531682
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	2.69481E-05	0.000133143	9.07473E-05	9.07473E-05	9.07473E-05
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	BTEX Cond Vapors 2	1	2	3	4
Temperature	°F	70	99.0828	99.5987	155 *	159.551
Pressure	psig	0	1291	1296	1286	60 *
Molecular Weight	lb/lbmol	44.2412	21.6427	126.93	126.93	126.93
Mass Flow	lb/h	39.2632	185646	16011.1	16011.1	16011.1
Std Vapor Volumetric Flow	MMSCFD	0.00808285	78.123	1.14885	1.14885	1.14885
Std Liquid Volumetric Flow	sgpm	0.151411	1051.2	29.1142	29.1142	29.1142
API Gravity				-3.23778	-3.23599	
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	2222.12	1176.43	3199.06	3199.06	3199.06

Remarks



**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 2	

**Connections**

	5	6	7	8	9
From Block	Flash Tank	Flash Tank	XCHG-101	Reboiler	Regeneration Unit
To Block	FT CON 2	XCHG-101	Regeneration Unit	Regeneration Unit	Reboiler

**Stream Composition**

Mass Flow	5 lb/h	6 lb/h	7 lb/h	8 lb/h	9 lb/h
Triethylene Glycol	0	15442.7	15442.7	235.875	15678.3
Water	0	273.608	273.608	315.25	445.051
Hydrogen Sulfide	0	0.0434527	0.0434527	0.000264153	0.000272909
Carbon Dioxide	0	0.884842	0.884842	0.000408987	0.000413507
Nitrogen	0	0.00318758	0.00318758	1.35613E-08	1.35838E-08
Methane	0	2.66389	2.66389	7.14339E-05	7.16867E-05
Ethane	0	5.48953	5.48953	0.000785226	0.00079081
Propane	0	8.72818	8.72818	0.00321741	0.00325176
Isobutane	0	2.53723	2.53723	0.00153567	0.00155644
n-Butane	0	9.65568	9.65568	0.00951401	0.00966845
Isopentane	0	4.69455	4.69455	0.00918287	0.00938779
n-Pentane	0	7.56043	7.56043	0.0185978	0.0190494
i-C6	0	10.2998	10.2998	0.0901733	0.0944583
i-C7	0	11.0619	11.0619	0.0973696	0.101479
Octane	0	2.88262	2.88262	0.067358	0.0714866
Nonane	0	0.344105	0.344105	0.0157531	0.0170601
Benzene	0	10.6949	10.6949	1.77386	2.02529
Toluene	0	24.5575	24.5575	8.11413	9.70666
Ethylbenzene	0	0.584598	0.584598	0.322719	0.409303
o-Xylene	0	7.88386	7.88386	5.62065	7.41455
n-Hexane	0	5.83944	5.83944	0.065208	0.0686576
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0	0.0142906	0.0142906	0.00647329	0.00797337
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	5 %	6 %	7 %	8 %	9 %
Triethylene Glycol		85.8536	85.8536	8.16336	80.7343
Water		12.6799	12.6799	90.948	19.1038
Hydrogen Sulfide		0.00106447	0.00106447	4.02832E-05	6.19238E-06
Carbon Dioxide		0.016786	0.016786	4.82994E-05	7.26586E-06
Nitrogen		9.49998E-05	9.49998E-05	2.51602E-09	3.74978E-10
Methane		0.138635	0.138635	2.31426E-05	3.45556E-06
Ethane		0.15242	0.15242	0.000135723	2.03378E-05
Propane		0.165255	0.165255	0.000379218	5.7026E-05
Isobutane		0.0364456	0.0364456	0.00013732	2.07081E-05
n-Butane		0.138697	0.138697	0.000850747	0.000128637
Isopentane		0.054324	0.054324	0.000661497	0.00010062
n-Pentane		0.0874873	0.0874873	0.00133971	0.000204175
i-C6		0.0997868	0.0997868	0.00543843	0.000847632
i-C7		0.0921684	0.0921684	0.0050504	0.000783162
Octane		0.0210688	0.0210688	0.00306474	0.00048395
Nonane		0.00223998	0.00223998	0.000638367	0.000102862
Benzene		0.114311	0.114311	0.118027	0.0200503
Toluene		0.222521	0.222521	0.457699	0.0814665
Ethylbenzene		0.0045973	0.0045973	0.0157987	0.00298136
o-Xylene		0.0619991	0.0619991	0.275159	0.0540075
n-Hexane		0.0565738	0.0565738	0.00393275	0.000616106
2,2,4-Trimethylpentane		0	0	0	0
Decanes Plus		7.77774E-05	7.77774E-05	0.00021932	4.01945E-05
Decanes Plus Sat		0	0	0	0

\* 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:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 2	

Mass Fraction	5 %	6 %	7 %	8 %	9 %
Triethylene Glycol		97.5365	97.5365	41.5754	97.1195
Water		1.72812	1.72812	55.5661	2.75687
Hydrogen Sulfide		0.000274449	0.000274449	4.65598E-05	1.69054E-06
Carbon Dioxide		0.00558869	0.00558869	7.20882E-05	2.56147E-06
Nitrogen		2.01329E-05	2.01329E-05	2.39032E-09	8.41449E-11
Methane		0.0168252	0.0168252	1.2591E-05	4.44064E-07
Ethane		0.0346721	0.0346721	0.000138404	4.89868E-06
Propane		0.0551275	0.0551275	0.000567101	2.0143E-05
Isobutane		0.0160252	0.0160252	0.000270678	9.64139E-06
n-Butane		0.0609856	0.0609856	0.00167694	5.98913E-05
Isopentane		0.0296509	0.0296509	0.00161858	5.81527E-05
n-Pentane		0.0477519	0.0477519	0.00327806	0.000118002
i-C6		0.0650539	0.0650539	0.015894	0.000585123
i-C7		0.0698675	0.0698675	0.0171624	0.000628614
Octane		0.0182067	0.0182067	0.0118726	0.000442824
Nonane		0.00217338	0.00217338	0.00277665	0.000105679
Benzene		0.0675496	0.0675496	0.312662	0.0125457
Toluene		0.155106	0.155106	1.4302	0.0601279
Ethylbenzene		0.00369234	0.00369234	0.0568825	0.00253543
o-Xylene		0.0497948	0.0497948	0.990698	0.0459295
n-Hexane		0.0368821	0.0368821	0.0114936	0.0004253
2,2,4-Trimethylpentane		0	0	0	0
Decanes Plus		9.02601E-05	9.02601E-05	0.00114098	4.93911E-05
Decanes Plus Sat		0	0	0	0

**Stream Properties**

Property	Units	5	6	7	8	9
Temperature	°F		159.542	290 *	395 *	311.316
Pressure	psig	55	55	35 *	0.5	0.5
Molecular Weight	lb/lbmol		132.185	132.185	29.4866	124.837
Mass Flow	lb/h	0	15832.7	15832.7	567.342	16143.3
Std Vapor Volumetric Flow	MMSCFD	0	1.09088	1.09088	0.175237	1.17775
Std Liquid Volumetric Flow	sgpm	0	28.2326	28.2326	1.08485	28.6818
API Gravity			-5.71004			-6.13036
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>		3290.42	3290.42	347.555	3056.36

**Remarks**

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 2	

**Connections**

	10	11	12	13	14
From Block	Regeneration Unit	Still Column	Reboiler	XCHG-101	TEG Pump
To Block	Still Column	Regeneration Unit	XCHG-101	MKUP-1	XCHG-103

**Stream Composition**

Mass Flow	10 lb/h	11 lb/h	12 lb/h	13 lb/h	14 lb/h
Triethylene Glycol	8.31625	8.08633	15442.4	15442.4	15444.2
Water	145.846	2.03867	129.801	129.801	129.802
Hydrogen Sulfide	0.0434489	4.90915E-06	8.756E-06	8.756E-06	8.756E-06
Carbon Dioxide	0.884862	2.48872E-05	4.52035E-06	4.52035E-06	4.52035E-06
Nitrogen	0.00318758	4.75727E-09	2.24874E-11	2.24874E-11	0
Methane	2.6639	1.12574E-05	2.52867E-07	2.52867E-07	0
Ethane	5.48958	5.72814E-05	5.58438E-06	5.58438E-06	5.58438E-06
Propane	8.72829	0.000147208	3.43517E-05	3.43517E-05	3.43517E-05
Isobutane	2.53726	4.98468E-05	2.077E-05	2.077E-05	2.077E-05
n-Butane	9.65581	0.000285517	0.000154439	0.000154439	0.000154439
Isopentane	4.69453	0.000183519	0.000204921	0.000204921	0.000204921
n-Pentane	7.56031	0.000333947	0.000451612	0.000451612	0.000451612
i-C6	10.2963	0.000773452	0.00428502	0.00428502	0.00428502
i-C7	11.0587	0.000877296	0.00410976	0.00410976	0.00410976
Octane	2.87891	0.000418592	0.00412856	0.00412856	0.00412856
Nonane	0.342862	6.4137E-05	0.00130695	0.00130695	0.00130695
Benzene	10.4523	0.00881993	0.251432	0.251432	0.251432
Toluene	22.9965	0.0315084	1.59253	1.59253	1.59253
Ethylbenzene	0.499005	0.000991586	0.0865847	0.0865847	0.0865847
o-Xylene	6.10632	0.0163612	1.7939	1.7939	1.7939
n-Hexane	5.83646	0.000469342	0.00344962	0.00344962	0.00344962
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.0128123	2.17349E-05	0.00150008	0.00150008	0.00150008
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	10 %	11 %	12 %	13 %	14 %
Triethylene Glycol	0.561079	32.1137	93.4195	93.4195	93.4201
Water	82.0239	67.4894	6.54562	6.54562	6.54498
Hydrogen Sulfide	0.0129168	8.59066E-05	2.33404E-07	2.33404E-07	2.33379E-07
Carbon Dioxide	0.203712	0.000337257	9.33123E-08	9.33123E-08	9.33024E-08
Nitrogen	0.00115288	1.0128E-07	7.29267E-13	7.29267E-13	0
Methane	1.68242	0.000418504	1.43197E-08	1.43197E-08	0
Ethane	1.84973	0.00113612	1.68721E-07	1.68721E-07	1.68703E-07
Propane	2.0055	0.00199098	7.07727E-07	7.07727E-07	7.07652E-07
Isobutane	0.442294	0.000511477	3.24644E-07	3.24644E-07	3.24609E-07
n-Butane	1.6832	0.00292969	2.41395E-06	2.41395E-06	2.41369E-06
Isopentane	0.659251	0.00151699	2.5803E-06	2.5803E-06	2.58003E-06
n-Pentane	1.06169	0.00276045	5.68655E-06	5.68655E-06	5.68595E-06
i-C6	1.21056	0.0053528	4.51734E-05	4.51734E-05	4.51686E-05
i-C7	1.11819	0.00522157	3.72609E-05	3.72609E-05	3.72569E-05
Octane	0.255353	0.00218548	3.2835E-05	3.2835E-05	3.28315E-05
Nonane	0.0270852	0.000298239	9.25759E-06	9.25759E-06	9.25661E-06
Benzene	1.35576	0.0673409	0.00292427	0.00292427	0.00292396
Toluene	2.52877	0.203947	0.0157021	0.0157021	0.0157005
Ethylbenzene	0.0476224	0.00557032	0.000740923	0.000740923	0.000740844
o-Xylene	0.582756	0.0919106	0.0153508	0.0153508	0.0153492
n-Hexane	0.686206	0.00324816	3.63665E-05	3.63665E-05	3.63626E-05
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.000846232	8.45013E-05	8.88387E-06	8.88387E-06	8.88293E-06
Decanes Plus Sat	0	0	0	0	0

\* 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:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 2	

Mass Fraction	10 %	11 %	12 %	13 %	14 %
Triethylene Glycol	3.11583	79.3836	99.1426	99.1426	99.1427
Water	54.6436	20.0136	0.833341	0.833341	0.833255
Hydrogen Sulfide	0.0162789	4.81932E-05	5.62147E-08	5.62147E-08	5.62084E-08
Carbon Dioxide	0.331529	0.000244318	2.90213E-08	2.90213E-08	2.9018E-08
Nitrogen	0.00119428	4.67022E-08	1.44372E-13	1.44372E-13	0
Methane	0.998076	0.000110514	1.62344E-09	1.62344E-09	0
Ethane	2.05677	0.000562332	3.58525E-08	3.58525E-08	3.58485E-08
Propane	3.27021	0.00144514	2.20543E-07	2.20543E-07	2.20518E-07
Isobutane	0.950628	0.000489347	1.33346E-07	1.33346E-07	1.33331E-07
n-Butane	3.61772	0.00280293	9.9152E-07	9.9152E-07	9.91409E-07
Isopentane	1.75889	0.00180161	1.31562E-06	1.31562E-06	1.31547E-06
n-Pentane	2.8326	0.00327836	2.89941E-06	2.89941E-06	2.89908E-06
i-C6	3.85768	0.00759298	2.75104E-05	2.75104E-05	2.75073E-05
i-C7	4.14333	0.00861242	2.63852E-05	2.63852E-05	2.63823E-05
Octane	1.07863	0.00410932	2.65059E-05	2.65059E-05	2.65029E-05
Nonane	0.128459	0.000629634	8.39081E-06	8.39081E-06	8.38987E-06
Benzene	3.91615	0.0865853	0.00161423	0.00161423	0.00161405
Toluene	8.61604	0.309319	0.0102242	0.0102242	0.0102231
Ethylbenzene	0.186961	0.00973441	0.000555886	0.000555886	0.000555824
o-Xylene	2.28784	0.160618	0.0115171	0.0115171	0.0115158
n-Hexane	2.18673	0.00460753	2.2147E-05	2.2147E-05	2.21446E-05
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.00480035	0.000213372	9.63072E-06	9.63072E-06	9.62964E-06
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	10	11	12	13	14
Temperature	°F	290.846	215	395	269.234	270.291
Pressure	psig	0	0	0.5	0.5 *	1315 *
Molecular Weight	lb/lbmol	27.0422	60.7508	141.504	141.504	141.505
Mass Flow	lb/h	266.903	10.1864	15576	15576	15577.7
Std Vapor Volumetric Flow	MMSCFD	0.0898911	0.00152712	1.00252	1.00252	1.00262
Std Liquid Volumetric Flow	sgpm	0.654177	0.018529	27.5969	27.5969	27.6
API Gravity			-4.53746	-6.7351	-6.7351	-6.91889
Net Ideal Gas Heating Value	Btu/ft^3	585.138	1229.96	3529.85	3529.85	3529.87

Remarks

## Process Streams Report All Streams Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 2	

Connections					
	15	16	17	18	19
From Block	Still Column	Flash Tank	XCHG-103	XCHG-102	--
To Block	BTEX Cond.	FT 2	RCYL-1	DRY GAS 2	MKUP-1

Stream Composition					
	15 lb/h	16 lb/h	17 lb/h	18 lb/h	19 lb/h
<b>Mass Flow</b>					
Triethylene Glycol	0.229918	0.010583	15444.2	1.4518	1.74196 *
Water	143.807	0.750143	129.802	6.23046	0.00105011 *
Hydrogen Sulfide	0.0434439	0.0246325	8.756E-06	2.90055	0 *
Carbon Dioxide	0.884837	2.35023	4.52035E-06	575.722	0 *
Nitrogen	0.00318758	0.258251	0	1561.41	0 *
Methane	2.66389	58.3575	0	107418	0 *
Ethane	5.48953	36.0472	5.58438E-06	29234.9	0 *
Propane	8.72815	30.3511	3.43517E-05	19200.3	0 *
Isobutane	2.53721	6.49601	2.077E-05	4343.67	0 *
n-Butane	9.65552	17.1004	0.000154439	8878.78	0 *
Isopentane	4.69434	5.29965	0.000204921	3072.57	0 *
n-Pentane	7.55998	7.14755	0.000451612	3550.9	0 *
i-C6	10.2955	5.8276	0.00428502	3386.63	0 *
i-C7	11.0578	4.09456	0.00410976	2311.29	0 *
Octane	2.87849	0.491456	0.00412856	331.209	0 *
Nonane	0.342798	0.0337787	0.00130695	29.0157	0 *
Benzene	10.4435	0.41926	0.251432	62.4533	0 *
Toluene	22.965	0.531422	1.59253	96.2195	0 *
Ethylbenzene	0.498013	0.00768648	0.0865847	2.09566	0 *
o-Xylene	6.08996	0.0745228	1.7939	19.2344	0 *
n-Hexane	5.83599	2.67335	0.00344962	1560.62	0 *
2,2,4-Trimethylpentane	0	0	0	0	0 *
Decanes Plus	0.0127905	0.000238971	0.00150008	0.247175	0 *
Decanes Plus Sat	0	0	0	0	0 *

	15 %	16 %	17 %	18 %	19 %
<b>Mole Fraction</b>					
Triethylene Glycol	0.0157802	0.00110729	93.4201	0.000112704	99.5 *
Water	82.2751	0.654258	6.54498	0.00403185	0.5 *
Hydrogen Sulfide	0.0131386	0.0113565	2.33379E-07	0.000992191	0 *
Carbon Dioxide	0.207227	0.839093	9.33024E-08	0.152508	0 *
Nitrogen	0.0011728	0.144851	0	0.649797	0 *
Methane	1.71149	57.1573	0	78.0609	0 *
Ethane	1.88168	18.8364	1.68703E-07	11.3346	0 *
Propane	2.04012	10.815	7.07652E-07	5.07621	0 *
Isobutane	0.449929	1.75611	3.24609E-07	0.871245	0 *
n-Butane	1.71224	4.62284	2.41369E-06	1.78089	0 *
Isopentane	0.670618	1.15415	2.58003E-06	0.496477	0 *
n-Pentane	1.07999	1.55659	5.68595E-06	0.573766	0 *
i-C6	1.23139	1.06256	4.51686E-05	0.458153	0 *
i-C7	1.13742	0.642062	3.72569E-05	0.268908	0 *
Octane	0.259729	0.0676014	3.28315E-05	0.0338029	0 *
Nonane	0.0275482	0.00413823	9.25661E-06	0.00263745	0 *
Benzene	1.37803	0.084336	0.00292396	0.00932104	0 *
Toluene	2.56895	0.0906244	0.0157005	0.0121744	0 *
Ethylbenzene	0.0483492	0.00113761	0.000740844	0.000230126	0 *
o-Xylene	0.591238	0.0110295	0.0153492	0.00211214	0 *
n-Hexane	0.698009	0.487437	3.63626E-05	0.211126	0 *
2,2,4-Trimethylpentane	0	0	0	0	0 *
Decanes Plus	0.000859396	2.44774E-05	8.88293E-06	1.87847E-05	0 *
Decanes Plus Sat	0	0	0	0	0 *

\* User Specified Values  
? Extrapolated or Approximate Values

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 2	

Mass Fraction	15 %	16 %	17 %	18 %	19 %
Triethylene Glycol	0.0895611	0.00593391	99.1427	0.000782024	99.9398 *
Water	56.0177	0.420609	0.833255	0.00335609	0.0602469 *
Hydrogen Sulfide	0.0169229	0.0138116	5.62084E-08	0.00156241	0 *
Carbon Dioxide	0.344675	1.31778	2.9018E-08	0.310118	0 *
Nitrogen	0.00124167	0.144802	0	0.841069	0 *
Methane	1.03768	32.7213	0	57.8619	0 *
Ethane	2.13836	20.2118	3.58485E-08	15.7476	0 *
Propane	3.39991	17.018	2.20518E-07	10.3424	0 *
Isobutane	0.988329	3.64234	1.33331E-07	2.33975	0 *
n-Butane	3.76116	9.58824	9.91409E-07	4.78263	0 *
Isopentane	1.82861	2.97153	1.31547E-06	1.65507	0 *
n-Pentane	2.94487	4.00766	2.89908E-06	1.91272	0 *
i-C6	4.01045	3.26756	2.75073E-05	1.82424	0 *
i-C7	4.3074	2.29584	2.63823E-05	1.245	0 *
Octane	1.12127	0.275561	2.65029E-05	0.178409	0 *
Nonane	0.133532	0.0189399	8.38987E-06	0.0156295	0 *
Benzene	4.0681	0.235081	0.00161405	0.033641	0 *
Toluene	8.94565	0.297971	0.0102231	0.0518295	0 *
Ethylbenzene	0.193993	0.00430984	0.000555824	0.00112885	0 *
o-Xylene	2.37225	0.0417853	0.0115158	0.0103608	0 *
n-Hexane	2.27332	1.49896	2.21446E-05	0.840644	0 *
2,2,4-Trimethylpentane	0	0	0	0	0 *
Decanes Plus	0.00498236	0.000133992	9.62964E-06	0.000133143	0 *
Decanes Plus Sat	0	0	0	0	0 *

**Stream Properties**

Property	Units	15	16	17	18	19
Temperature	°F	215 *	159.542	95 *	95 *	85 *
Pressure	psig	0	55	1305	1281	0.5 *
Molecular Weight	lb/lbmol	26.4596	28.0228	141.505	21.6427	149.512
Mass Flow	lb/h	256.717	178.347	15577.7	185646	1.74301
Std Vapor Volumetric Flow	MMSCFD	0.088364	0.0579641	1.00262	78.123	0.000106177
Std Liquid Volumetric Flow	sgpm	0.635648	0.881668	27.6	1051.2	0.0030849
API Gravity				-6.9175		-7.10455
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	573.994	1479.77	3529.87	1176.43	3757.91

**Remarks**

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 2	

**Connections**

	20	21	22	23	25
From Block	MKUP-1	MKUP-1	RCYL-1	BTEX Cond.	Blowcase
To Block	--	TEG Pump	Contact Tower	Blowcase	PUMP-101

**Stream Composition**

Mass Flow	20 lb/h	21 lb/h	22 lb/h	23 lb/h	25 lb/h
Triethylene Glycol	0	15444.2	15444.1	0.229918	0.229918
Water	0	129.802	129.8	143.807	143.356
Hydrogen Sulfide	0	8.756E-06	8.87997E-06	0.0434439	0.00235285
Carbon Dioxide	0	4.52035E-06	3.84591E-06	0.884837	0.0143648
Nitrogen	0	0	0	0.00318758	2.87685E-06
Methane	0	0	0	2.66389	0.00995652
Ethane	0	5.58438E-06	5.66926E-06	5.48953	0.138523
Propane	0	3.43517E-05	3.4872E-05	8.72815	0.717864
Isobutane	0	2.077E-05	2.10852E-05	2.53721	0.50586
n-Butane	0	0.000154439	0.000156743	9.65552	2.67083
Isopentane	0	0.000204921	0.000207986	4.69434	2.29175
n-Pentane	0	0.000451612	0.000458386	7.55998	4.25124
i-C6	0	0.00428502	0.00434954	10.2955	7.74352
i-C7	0	0.00410976	0.00417288	11.0578	10.0507
Octane	0	0.00412856	0.00419419	2.87849	2.82647
Nonane	0	0.00130695	0.00132876	0.342798	0.340663
Benzene	0	0.251432	0.254742	10.4435	9.02164
Toluene	0	1.59253	1.61305	22.965	21.9909
Ethylbenzene	0	0.0865847	0.0875745	0.498013	0.491796
o-Xylene	0	1.7939	1.80893	6.08996	6.01959
n-Hexane	0	0.00344962	0.00350209	5.83599	4.76646
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0	0.00150008	0.00150983	0.0127905	0.01278
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	20 %	21 %	22 %	23 %	25 %
Triethylene Glycol	93.4195	93.4201	93.4198	0.0157802	0.0173689
Water	6.54562	6.54498	6.54489	82.2751	90.275
Hydrogen Sulfide	2.33404E-07	2.33379E-07	2.36683E-07	0.0131386	0.000783204
Carbon Dioxide	9.33123E-08	9.33024E-08	7.93816E-08	0.207227	0.00370291
Nitrogen	7.29267E-13	0	0	0.0011728	1.16504E-06
Methane	1.43197E-08	0	0	1.71149	0.0070409
Ethane	1.68721E-07	1.68703E-07	1.71267E-07	1.88168	0.0522629
Propane	7.07727E-07	7.07652E-07	7.18371E-07	2.04012	0.184688
Isobutane	3.24644E-07	3.24609E-07	3.29536E-07	0.449929	0.0987369
n-Butane	2.41395E-06	2.41369E-06	2.44971E-06	1.71224	0.52131
Isopentane	2.5803E-06	2.58003E-06	2.61862E-06	0.670618	0.360354
n-Pentane	5.68655E-06	5.68595E-06	5.77125E-06	1.07999	0.668464
i-C6	4.51734E-05	4.51686E-05	4.58487E-05	1.23139	1.01941
i-C7	3.72609E-05	3.72569E-05	3.78292E-05	1.13742	1.13792
Octane	3.2835E-05	3.28315E-05	3.33535E-05	0.259729	0.280713
Nonane	9.25759E-06	9.25661E-06	9.41106E-06	0.0275482	0.0301329
Benzene	0.00292427	0.00292396	0.00296245	1.37803	1.31027
Toluene	0.0157021	0.0157005	0.0159028	2.56895	2.70766
Ethylbenzene	0.000740923	0.000740844	0.000749313	0.0483492	0.0525527
o-Xylene	0.0153508	0.0153492	0.0154777	0.591238	0.643246
n-Hexane	3.63665E-05	3.63626E-05	3.69157E-05	0.698009	0.627486
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	8.88387E-06	8.88293E-06	8.94069E-06	0.000859396	0.000945139
Decanes Plus Sat	0	0	0	0	0

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 2	

Mass Fraction	20 %	21 %	22 %	23 %	25 %
Triethylene Glycol	99.1426	99.1427	99.1425	0.0895611	0.105732
Water	0.833341	0.833255	0.833243	56.0177	65.925
Hydrogen Sulfide	5.62147E-08	5.62084E-08	5.70043E-08	0.0169229	0.001082
Carbon Dioxide	2.90213E-08	2.9018E-08	2.46885E-08	0.344675	0.0066059
Nitrogen	1.44372E-13	0	0	0.00124167	1.32297E-06
Methane	1.62344E-09	0	0	1.03768	0.00457869
Ethane	3.58525E-08	3.58485E-08	3.63934E-08	2.13836	0.0637023
Propane	2.20543E-07	2.20518E-07	2.23858E-07	3.39991	0.330123
Isobutane	1.33346E-07	1.33331E-07	1.35355E-07	0.988329	0.232629
n-Butane	9.9152E-07	9.91409E-07	1.0062E-06	3.76116	1.22823
Isopentane	1.31562E-06	1.31547E-06	1.33515E-06	1.82861	1.0539
n-Pentane	2.89941E-06	2.89908E-06	2.94258E-06	2.94487	1.95501
i-C6	2.75104E-05	2.75073E-05	2.79215E-05	4.01045	3.561
i-C7	2.63852E-05	2.63823E-05	2.67875E-05	4.3074	4.62199
Octane	2.65059E-05	2.65029E-05	2.69243E-05	1.12127	1.29981
Nonane	8.39081E-06	8.38987E-06	8.52986E-06	0.133532	0.15666
Benzene	0.00161423	0.00161405	0.0016353	4.0681	4.14877
Toluene	0.0102242	0.0102231	0.0103548	8.94565	10.1129
Ethylbenzene	0.000555886	0.000555824	0.000562177	0.193993	0.226161
o-Xylene	0.0115171	0.0115158	0.0116123	2.37225	2.76822
n-Hexane	2.2147E-05	2.21446E-05	2.24814E-05	2.27332	2.19194
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	9.63072E-06	9.62964E-06	9.69227E-06	0.00498236	0.0058771
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	20	21	22	23	25
Temperature	°F		269.215	95	70 *	70
Pressure	psig	0.5	0.5	1305	0	0
Molecular Weight	lb/lbmol	141.504	141.505	141.505	26.4596	24.6694
Mass Flow	lb/h	0	15577.7	15577.7	256.717	217.454
Std Vapor Volumetric Flow	MMSCFD	0	1.00262	1.00262	0.088364	0.0802811
Std Liquid Volumetric Flow	sgpm	0	27.6 *	27.6	0.635648	0.484237
API Gravity			-6.73513	-6.91737		25.4664
Net Ideal Gas Heating Value	Btu/ft^3	3529.85	3529.87	3529.88	573.994	408.058

**Remarks**



**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 2	

**Connections**

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

**Stream Composition**

Mass Flow	26 lb/h	27 lb/h			
Triethylene Glycol	0.229918	7.94199E-20			
Water	143.356	150.788			
Hydrogen Sulfide	0.00235285	2.96863			
Carbon Dioxide	0.0143648	578.957			
Nitrogen	2.87685E-06	1561.67			
Methane	0.00995652	107479			
Ethane	0.138523	29276.4			
Propane	0.717864	19239.4			
Isobutane	0.50586	4352.7			
n-Butane	2.67083	8905.53			
Isopentane	2.29175	3082.57			
n-Pentane	4.25124	3565.61			
i-C6	7.74352	3402.75			
i-C7	10.0507	2326.44			
Octane	2.82647	334.579			
Nonane	0.340663	29.3922			
Benzene	9.02164	73.3127			
Toluene	21.9909	119.695			
Ethylbenzene	0.491796	2.60037			
o-Xylene	6.01959	25.3838			
n-Hexane	4.76646	1569.13			
2,2,4-Trimethylpentane	0	0			
Decanes Plus	0.01278	0.260195			
Decanes Plus Sat	0	0			

Mole Fraction	26 %	27 %			
Triethylene Glycol	0.0173689	6.15391E-24			
Water	90.275	0.0973958			
Hydrogen Sulfide	0.000783204	0.00101358			
Carbon Dioxide	0.00370291	0.153078			
Nitrogen	1.16504E-06	0.648691			
Methane	0.0070409	77.9593			
Ethane	0.0522629	11.3295			
Propane	0.184688	5.07704			
Isobutane	0.0987369	0.871425			
n-Butane	0.52131	1.78292			
Isopentane	0.360354	0.497161			
n-Pentane	0.668464	0.575066			
i-C6	1.01941	0.459474			
i-C7	1.13792	0.270165			
Octane	0.280713	0.034083			
Nonane	0.0301329	0.00266668			
Benzene	1.31027	0.0109213			
Toluene	2.70766	0.0151165			
Ethylbenzene	0.0525527	0.000285015			
o-Xylene	0.643246	0.00278221			
n-Hexane	0.627486	0.21188			
2,2,4-Trimethylpentane	0	0			
Decanes Plus	0.000945139	1.97373E-05			
Decanes Plus Sat	0	0			

\* 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:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 2	

Mass Fraction	26 %	27 %			
Triethylene Glycol	0.105732	4.26806E-23			
Water	65.925	0.0810343			
Hydrogen Sulfide	0.001082	0.00159535			
Carbon Dioxide	0.0066059	0.311134			
Nitrogen	1.32297E-06	0.839251			
Methane	0.00457869	57.7599			
Ethane	0.0637023	15.7333			
Propane	0.330123	10.3394			
Isobutane	0.232629	2.33916			
n-Butane	1.22823	4.78587			
Isopentane	1.0539	1.65659			
n-Pentane	1.95501	1.91617			
i-C6	3.561	1.82865			
i-C7	4.62199	1.25024			
Octane	1.29981	0.179804			
Nonane	0.15666	0.0157955			
Benzene	4.14877	0.0393986			
Toluene	10.1129	0.0643249			
Ethylbenzene	0.226161	0.00139745			
o-Xylene	2.76822	0.0136414			
n-Hexane	2.19194	0.843259			
2,2,4-Trimethylpentane	0	0			
Decanes Plus	0.0058771	0.00013983			
Decanes Plus Sat	0	0			

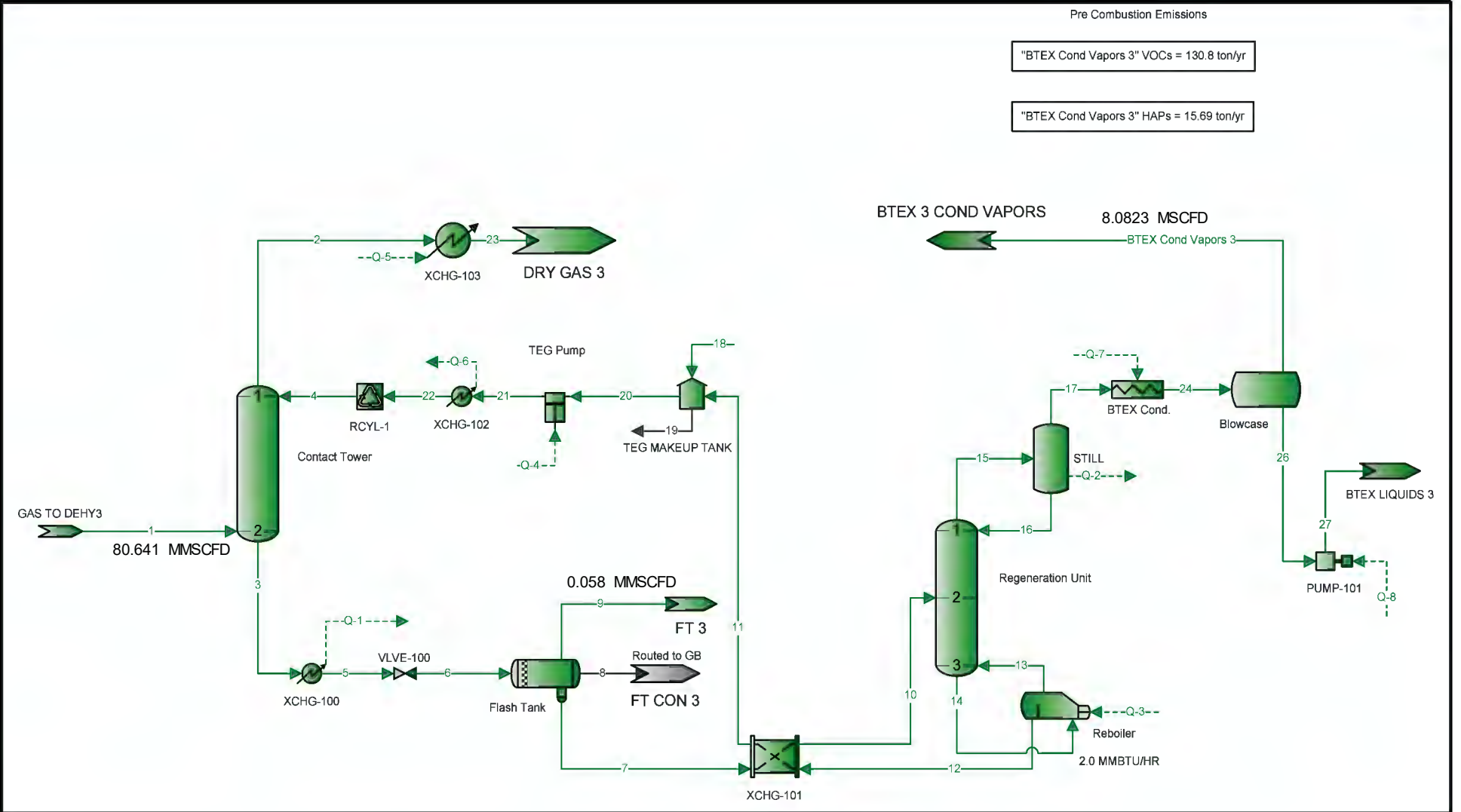
**Stream Properties**

Property	Units	26	27			
Temperature	°F	77.2136	98.8743			
Pressure	psig	16 *	1296			
Molecular Weight	lb/lbmol	24.6694	21.6527			
Mass Flow	lb/h	217.454	186080			
Std Vapor Volumetric Flow	MMSCFD	0.0802811	78.2692			
Std Liquid Volumetric Flow	sgpm	0.484237	1052.72			
API Gravity		25.4919				
Net Ideal Gas Heating Value	Btu/ft^3	408.058	1175.97			

**Remarks**

## Dehy 3 Plant Schematic

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 3	



Pre Combustion Emissions

"BTEX Cond Vapors 3" VOCs = 130.8 ton/yr

"BTEX Cond Vapors 3" HAPs = 15.69 ton/yr

\* User Specified Values  
 ? Extrapolated or Approximate Values

	<b>Process Streams Report</b> <b>All Streams</b> Tabulated by Total Phase	
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Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 3	

Connections					
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	BTEX Cond Vapors 3	1	2	3	4
From Block	Blowcase	GAS TO DEHY3	Contact Tower	Contact Tower	RCYL-1
To Block	BTEX 3 COND VAPORS	Contact Tower	XCHG-103	XCHG-100	Contact Tower

Stream Composition					
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	BTEX Cond Vapors 3	1	2	3	4
Mass Flow	lb/h	lb/h	lb/h	lb/h	lb/h
Triethylene Glycol	2.80311E-09	8.18265E-20	1.4961	15442.7	15444.2
Water	0.450552	155.358	6.439	278.759	129.84
Hydrogen Sulfide	0.0411	3.05858	2.99046	0.0681327	8.55038E-06
Carbon Dioxide	0.871224	596.502	593.264	3.23796	3.70177E-06
Nitrogen	0.00318943	1609	1608.74	0.261746	0
Methane	2.65651	110736	110675	61.0759	0
Ethane	5.35325	30163.6	30122	41.5621	5.44822E-06
Propane	8.01007	19822.4	19783.3	39.094	3.35068E-05
Isobutane	2.03034	4484.6	4475.56	9.0354	2.02517E-05
n-Butane	6.98058	9175.4	9148.63	26.7618	0.000150625
Isopentane	2.39952	3175.98	3165.98	9.99456	0.000199816
n-Pentane	3.30292	3673.65	3658.95	14.7045	0.000440322
i-C6	2.54749	3505.86	3489.74	16.1245	0.00417837
i-C7	1.00498	2396.94	2381.8	15.1497	0.00400843
Octane	0.0518614	344.718	341.351	3.37087	0.00403036
Nonane	0.00212912	30.2829	29.9067	0.377468	0.0012769
Benzene	1.42116	75.5343	64.6537	11.1267	0.246073
Toluene	0.975334	123.323	99.7542	25.1312	1.56285
Ethylbenzene	0.00624088	2.67917	2.17112	0.593217	0.0851736
o-Xylene	0.0708795	26.153	19.9425	7.97778	1.76726
n-Hexane	1.0672	1616.68	1608.18	8.50898	0.00336338
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	1.05987E-05	0.26808	0.255013	0.0145293	0.00146323
Decanes Plus Sat	0	0	0	0	0

	BTEX Cond Vapors 3	1	2	3	4
Mole Fraction	%	%	%	%	%
Triethylene Glycol	2.10338E-09	6.15391E-24	0.000112724	81.361	93.4189
Water	2.8182	0.0973958	0.00404414	12.2425	6.54677
Hydrogen Sulfide	0.135894	0.00101358	0.000992833	0.00158172	2.27895E-07
Carbon Dioxide	2.23075	0.153078	0.152528	0.0582115	7.64052E-08
Nitrogen	0.0128297	0.648691	0.649782	0.00739261	0
Methane	18.6599	77.9593	78.06	3.01219	0
Ethane	20.0616	11.3295	11.3348	1.09361	1.64587E-07
Propane	20.4696	5.07704	5.07637	0.701452	6.90237E-07
Isobutane	3.93636	0.871425	0.871274	0.122995	3.16504E-07
n-Butane	13.5337	1.78292	1.781	0.364298	2.35405E-06
Isopentane	3.74769	0.497161	0.496511	0.109602	2.51572E-06
n-Pentane	5.15866	0.575066	0.573821	0.161252	5.54372E-06
i-C6	3.33118	0.459474	0.458205	0.148043	4.40438E-05
i-C7	1.13018	0.270165	0.268954	0.119622	3.63378E-05
Octane	0.0511609	0.034083	0.0338124	0.0233481	3.20502E-05
Nonane	0.00187065	0.00266668	0.00263841	0.00232857	9.04364E-06
Benzene	2.05019	0.0109213	0.00936538	0.112703	0.00286159
Toluene	1.19284	0.0151165	0.0122501	0.215802	0.0154077
Ethylbenzene	0.00662419	0.000285015	0.000231394	0.00442095	0.000728759
o-Xylene	0.0752329	0.00278221	0.00212544	0.0594545	0.015121
n-Hexane	1.3955	0.21188	0.211154	0.0781229	3.54531E-05
2,2,4-Trimethylpentane	0	0	0	0	0

\* User Specified Values  
 ? Extrapolated or Approximate Values

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 3	

	BTEX Cond Vapors 3	1	2	3	4
Mole Fraction	%	%	%	%	%
Decanes Plus	7.78568E-06	1.97373E-05	1.88099E-05	7.49384E-05	8.66456E-06
Decanes Plus Sat	0	0	0	0	0

	BTEX Cond Vapors 3	1	2	3	4
Mass Fraction	%	%	%	%	%
Triethylene Glycol	7.14232E-09	4.26806E-23	0.00078215	96.4227	99.1429
Water	1.14801	0.0810343	0.00336626	1.74054	0.833496
Hydrogen Sulfide	0.104723	0.00159535	0.00156339	0.000425413	5.48884E-08
Carbon Dioxide	2.21987	0.311134	0.310154	0.0202175	2.37632E-08
Nitrogen	0.00812666	0.839251	0.841035	0.00163431	0
Methane	6.76877	57.7599	57.8602	0.381351	0
Ethane	13.6401	15.7333	15.7476	0.259509	3.49744E-08
Propane	20.4096	10.3394	10.3426	0.244098	2.15094E-07
Isobutane	5.1733	2.33916	2.33979	0.056416	1.30004E-07
n-Butane	17.7865	4.78587	4.78284	0.167098	9.66926E-07
Isopentane	6.11396	1.65659	1.65515	0.0624049	1.2827E-06
n-Pentane	8.41582	1.91617	1.91287	0.0918132	2.82661E-06
i-C6	6.49101	1.82865	1.82441	0.10068	2.68227E-05
i-C7	2.56068	1.25024	1.24518	0.0945931	2.57318E-05
Octane	0.132143	0.179804	0.178456	0.0210474	2.58726E-05
Nonane	0.00542499	0.0157955	0.015635	0.00235687	8.19696E-06
Benzene	3.6211	0.0393986	0.0338005	0.0694742	0.00157964
Toluene	2.48515	0.0643249	0.0521508	0.156916	0.0100326
Ethylbenzene	0.0159017	0.00139745	0.00113505	0.00370398	0.000546764
o-Xylene	0.180601	0.0136414	0.0104258	0.0498124	0.0113448
n-Hexane	2.71921	0.843259	0.840743	0.0531291	2.15909E-05
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	2.70055E-05	0.00013983	0.000133319	9.07196E-05	9.39305E-06
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	BTEX Cond Vapors 3	1	2	3	4
Temperature	°F	70	98.8743	99.092	99.5987	95
Pressure	psig	0	1296	1291	1296	1305
Molecular Weight	lb/lbmol	44.2252	21.6527	21.6431	126.715	141.503
Mass Flow	lb/h	39.2465	191718	191280	16015.7	15577.8
Std Vapor Volumetric Flow	MMSCFD	0.00808233	80.641	80.4926	1.15112	1.00264
Std Liquid Volumetric Flow	sgpm	0.151371	1084.62	1083.09	29.1238	27.6
API Gravity					-3.23375	-6.91762
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	2221.27	1175.97	1176.44	3192.81	3529.8

Remarks

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 3	

**Connections**

	5	6	7	8	9
From Block	XCHG-100	VLVE-100	Flash Tank	Flash Tank	Flash Tank
To Block	VLVE-100	Flash Tank	XCHG-101	FT CON 3	FT 3

**Stream Composition**

Mass Flow	5 lb/h	6 lb/h	7 lb/h	8 lb/h	9 lb/h
Triethylene Glycol	15442.7	15442.7	15442.7	0	0.0105675
Water	278.759	278.759	277.997	0	0.76173
Hydrogen Sulfide	0.0681327	0.0681327	0.0434826	0	0.0246502
Carbon Dioxide	3.23796	3.23796	0.885737	0	2.35222
Nitrogen	0.261746	0.261746	0.00319232	0	0.258554
Methane	61.0759	61.0759	2.66651	0	58.4094
Ethane	41.5621	41.5621	5.49213	0	36.07
Propane	39.094	39.094	8.7292	0	30.3648
Isobutane	9.0354	9.0354	2.53692	0	6.49847
n-Butane	26.7618	26.7618	9.65514	0	17.1066
Isopentane	9.99456	9.99456	4.69319	0	5.30137
n-Pentane	14.7045	14.7045	7.55588	0	7.14861
i-C6	16.1245	16.1245	10.295	0	5.82945
i-C7	15.1497	15.1497	11.0539	0	4.09582
Octane	3.37087	3.37087	2.87935	0	0.491524
Nonane	0.377468	0.377468	0.343679	0	0.0337886
Benzene	11.1267	11.1267	10.7068	0	0.419917
Toluene	25.1312	25.1312	24.5986	0	0.532598
Ethylbenzene	0.593217	0.593217	0.585513	0	0.00770349
o-Xylene	7.97778	7.97778	7.90303	0	0.0747522
n-Hexane	8.50898	8.50898	5.83502	0	2.67396
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.0145293	0.0145293	0.0142902	0	0.000239094
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	5 %	6 %	7 %	8 %	9 %
Triethylene Glycol	81.361	81.361	85.6788		0.00110476
Water	12.2425	12.2425	12.857		0.663816
Hydrogen Sulfide	0.00158172	0.00158172	0.00106303		0.0113552
Carbon Dioxide	0.0582115	0.0582115	0.0167687		0.839112
Nitrogen	0.00739261	0.00739261	9.49472E-05		0.144901
Methane	3.01219	3.01219	0.138488		57.1609
Ethane	1.09361	1.09361	0.152182		18.8327
Propane	0.701452	0.701452	0.164938		10.8109
Isobutane	0.122995	0.122995	0.0363669		1.75532
n-Butane	0.364298	0.364298	0.138407		4.62073
Isopentane	0.109602	0.109602	0.0541977		1.15358
n-Pentane	0.161252	0.161252	0.0872564		1.55554
i-C6	0.148043	0.148043	0.0995374		1.06202
i-C7	0.119622	0.119622	0.0919137		0.64173
Octane	0.0233481	0.0233481	0.021002		0.0675551
Nonane	0.00232857	0.00232857	0.00223265		0.00413602
Benzene	0.112703	0.112703	0.114205		0.0843984
Toluene	0.215802	0.215802	0.222439		0.09075
Ethylbenzene	0.00442095	0.00442095	0.00459512		0.00113918
o-Xylene	0.0594545	0.0594545	0.0620231		0.0110543
n-Hexane	0.0781229	0.0781229	0.0564157		0.487147
2,2,4-Trimethylpentane	0	0	0		0
Decanes Plus	7.49384E-05	7.49384E-05	7.76168E-05		2.44698E-05
Decanes Plus Sat	0	0	0		0

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 3	

Mass Fraction	5 %	6 %	7 %	8 %	9 %
Triethylene Glycol	96.4227	96.4227	97.5092		0.00592125
Water	1.74054	1.74054	1.75534		0.426819
Hydrogen Sulfide	0.000425413	0.000425413	0.00027456		0.0138122
Carbon Dioxide	0.0202175	0.0202175	0.00559276		1.31802
Nitrogen	0.00163431	0.00163431	2.01571E-05		0.144875
Methane	0.381351	0.381351	0.016837		32.7285
Ethane	0.259509	0.259509	0.0346787		20.211
Propane	0.244098	0.244098	0.0551183		17.0142
Isobutane	0.056416	0.056416	0.0160188		3.64128
n-Butane	0.167098	0.167098	0.060965		9.58534
Isopentane	0.0624049	0.0624049	0.029634		2.97051
n-Pentane	0.0918132	0.0918132	0.0477097		4.00557
i-C6	0.10068	0.10068	0.0650055		3.26641
i-C7	0.0945931	0.0945931	0.0697971		2.29501
Octane	0.0210474	0.0210474	0.0181809		0.275415
Nonane	0.00235687	0.00235687	0.00217008		0.0189327
Benzene	0.0694742	0.0694742	0.0676056		0.235292
Toluene	0.156916	0.156916	0.155321		0.29843
Ethylbenzene	0.00370398	0.00370398	0.00369708		0.00431648
o-Xylene	0.0498124	0.0498124	0.0499017		0.0418858
n-Hexane	0.0531291	0.0531291	0.0368438		1.4983
2,2,4-Trimethylpentane	0	0	0		0
Decanes Plus	9.07196E-05	9.07196E-05	9.02322E-05		0.000133971
Decanes Plus Sat	0	0	0		0

**Stream Properties**

Property	Units	5	6	7	8	9
Temperature	°F	155 *	159.549	159.54		159.54
Pressure	psig	1286	60 *	55	55	55
Molecular Weight	lb/lbmol	126.715	126.715	131.953		28.0185
Mass Flow	lb/h	16015.7	16015.7	15837.2	0	178.467
Std Vapor Volumetric Flow	MMSCFD	1.15112	1.15112	1.09311	0	0.0580119
Std Liquid Volumetric Flow	sgpm	29.1238	29.1238	28.2415	0	0.88228
API Gravity		-3.23195		-5.70329		
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	3192.81	3192.81	3283.74		1479.46

**Remarks**

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 3	

**Connections**

	10	11	12	13	14
From Block	XCHG-101	XCHG-101	Reboiler	Reboiler	Regeneration Unit
To Block	Regeneration Unit	TEG MAKEUP TANK	XCHG-101	Regeneration Unit	Reboiler

**Stream Composition**

Mass Flow	10 lb/h	11 lb/h	12 lb/h	13 lb/h	14 lb/h
Triethylene Glycol	15442.7	15442.5	15442.5	237.211	15679.7
Water	277.997	129.84	129.84	317.131	446.97
Hydrogen Sulfide	0.0434826	8.43389E-06	8.43389E-06	0.000255881	0.000264315
Carbon Dioxide	0.885737	4.3523E-06	4.3523E-06	0.00039602	0.000400372
Nitrogen	0.00319232	2.16216E-11	2.16216E-11	1.31133E-08	1.31349E-08
Methane	2.66651	2.43128E-07	2.43128E-07	6.90734E-05	6.93165E-05
Ethane	5.49213	5.36846E-06	5.36846E-06	0.000759161	0.00076453
Propane	8.7292	3.30181E-05	3.30181E-05	0.0031101	0.00314312
Isobutane	2.53692	1.99557E-05	1.99557E-05	0.00148387	0.00150383
n-Butane	9.65514	0.000148462	0.000148462	0.00919785	0.00934632
Isopentane	4.69319	0.000196939	0.000196939	0.00887547	0.00907241
n-Pentane	7.55588	0.000433963	0.000433963	0.0179728	0.0184068
i-C6	10.295	0.0041178	0.0041178	0.087148	0.0912658
i-C7	11.0539	0.00394917	0.00394917	0.0940985	0.0980477
Octane	2.87935	0.00396868	0.00396868	0.0651188	0.0690875
Nonane	0.343679	0.00125639	0.00125639	0.0152301	0.0164864
Benzene	10.7068	0.242955	0.242955	1.72381	1.96676
Toluene	24.5986	1.54342	1.54342	7.90865	9.45207
Ethylbenzene	0.585513	0.0842252	0.0842252	0.315711	0.399936
o-Xylene	7.90303	1.75252	1.75252	5.52223	7.27475
n-Hexane	5.83502	0.00331413	0.00331413	0.0630037	0.0663178
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.0142902	0.00145418	0.00145418	0.00631097	0.00776515
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	10 %	11 %	12 %	13 %	14 %
Triethylene Glycol	85.6788	93.4186	93.4186	8.16324	80.6724
Water	12.857	6.54747	6.54747	90.9738	19.1698
Hydrogen Sulfide	0.00106303	2.24815E-07	2.24815E-07	3.88013E-05	5.99225E-06
Carbon Dioxide	0.0167687	8.98422E-08	8.98422E-08	4.65039E-05	7.02904E-06
Nitrogen	9.49472E-05	7.01179E-13	7.01179E-13	2.41916E-09	3.62276E-10
Methane	0.138488	1.37681E-08	1.37681E-08	2.22515E-05	3.33845E-06
Ethane	0.152182	1.62195E-07	1.62195E-07	0.000130477	1.96451E-05
Propane	0.164938	6.80244E-07	6.80244E-07	0.000364501	5.50738E-05
Isobutane	0.0363669	3.11913E-07	3.11913E-07	0.000131939	1.9991E-05
n-Butane	0.138407	2.32049E-06	2.32049E-06	0.000817831	0.000124245
Isopentane	0.0541977	2.47977E-06	2.47977E-06	0.000635743	9.71567E-05
n-Pentane	0.0872564	5.46426E-06	5.46426E-06	0.00128738	0.000197119
i-C6	0.0995374	4.341E-05	4.341E-05	0.00522629	0.000818284
i-C7	0.0919137	3.58045E-05	3.58045E-05	0.00485317	0.000756032
Octane	0.021002	3.1563E-05	3.1563E-05	0.00294612	0.000467308
Nonane	0.00223265	8.8993E-06	8.8993E-06	0.000613686	9.93187E-05
Benzene	0.114205	0.00282564	0.00282564	0.114049	0.0194542
Toluene	0.222439	0.0152177	0.0152177	0.443589	0.079262
Ethylbenzene	0.00459512	0.000720723	0.000720723	0.0153684	0.00291064
o-Xylene	0.0620231	0.0149964	0.0149964	0.268814	0.0529438
n-Hexane	0.0564157	3.49377E-05	3.49377E-05	0.00377835	0.000594601
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	7.76168E-05	8.61191E-06	8.61191E-06	0.000212613	3.91114E-05
Decanes Plus Sat	0	0	0	0	0

\* 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:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 3	

Mass Fraction	10 %	11 %	12 %	13 %	14 %
Triethylene Glycol	97.5092	99.143	99.143	41.6025	97.111
Water	1.75534	0.833589	0.833589	55.6189	2.76828
Hydrogen Sulfide	0.00027456	5.41468E-08	5.41468E-08	4.48768E-05	1.63701E-06
Carbon Dioxide	0.00559276	2.79424E-08	2.79424E-08	6.94546E-05	2.47967E-06
Nitrogen	2.01571E-05	1.38814E-13	1.38814E-13	2.29983E-09	8.135E-11
Methane	0.016837	1.56092E-09	1.56092E-09	1.21142E-05	4.29307E-07
Ethane	0.0346787	3.44663E-08	3.44663E-08	0.000133143	4.73506E-06
Propane	0.0551183	2.11981E-07	2.11981E-07	0.000545455	1.94667E-05
Isobutane	0.0160188	1.28119E-07	1.28119E-07	0.000260244	9.31386E-06
n-Butane	0.060965	9.53146E-07	9.53146E-07	0.00161313	5.78857E-05
Isopentane	0.029634	1.26438E-06	1.26438E-06	0.00155659	5.61893E-05
n-Pentane	0.0477097	2.78611E-06	2.78611E-06	0.00315211	0.000114001
i-C6	0.0650055	2.64369E-05	2.64369E-05	0.0152842	0.000565248
i-C7	0.0697971	2.53543E-05	2.53543E-05	0.0165031	0.000607251
Octane	0.0181809	2.54795E-05	2.54795E-05	0.0114206	0.000427888
Nonane	0.00217008	8.06618E-06	8.06618E-06	0.00267107	0.000102108
Benzene	0.0676056	0.00155981	0.00155981	0.302324	0.012181
Toluene	0.155321	0.00990896	0.00990896	1.38703	0.0585407
Ethylbenzene	0.00369708	0.000540738	0.000540738	0.0553699	0.00247698
o-Xylene	0.0499017	0.0112514	0.0112514	0.968497	0.0450556
n-Hexane	0.0368438	2.12772E-05	2.12772E-05	0.0110497	0.000410734
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	9.02322E-05	9.33602E-06	9.33602E-06	0.00110683	4.80928E-05
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	10	11	12	13	14
Temperature	°F	290 *	269.154	395	395 *	311.124
Pressure	psig	35 *	0.5 *	0.5	0.5	0.5
Molecular Weight	lb/lbmol	131.953	141.502	141.502	29.467	124.752
Mass Flow	lb/h	15837.2	15576	15576	570.185	16146.2
Std Vapor Volumetric Flow	MMSCFD	1.09311	1.00253	1.00253	0.176232	1.17876
Std Liquid Volumetric Flow	sgpm	28.2415	27.5968	27.5968	1.09011	28.6869
API Gravity			-6.73534	-6.73534		-6.12943
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	3283.74	3529.77	3529.77	346.43	3053.84

**Remarks**

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 3	

**Connections**

	15	16	17	18	19
From Block	Regeneration Unit	STILL	STILL	--	TEG MAKEUP TANK
To Block	STILL	Regeneration Unit	BTEX Cond.	TEG MAKEUP TANK	--

**Stream Composition**

Mass Flow	15 lb/h	16 lb/h	17 lb/h	18 lb/h	19 lb/h
Triethylene Glycol	8.45669	8.22344	0.233256	1.78871 *	0
Water	150.256	2.09867	148.157	0.00107829 *	0
Hydrogen Sulfide	0.043479	4.88144E-06	0.0434741	0 *	0
Carbon Dioxide	0.885757	2.47703E-05	0.885733	0 *	0
Nitrogen	0.00319233	4.73649E-09	0.00319232	0 *	0
Methane	2.66652	1.11903E-05	2.66651	0 *	0
Ethane	5.49218	5.68078E-05	5.49212	0 *	0
Propane	8.72931	0.000145758	8.72917	0 *	0
Isobutane	2.53695	4.92595E-05	2.5369	0 *	0
n-Butane	9.65527	0.00028246	9.65499	0 *	0
Isopentane	4.69318	0.000181202	4.693	0 *	0
n-Pentane	7.55578	0.000329528	7.55545	0 *	0
i-C6	10.2917	0.000762683	10.2909	0 *	0
i-C7	11.0508	0.000862852	11.0499	0 *	0
Octane	2.87579	0.000411146	2.87538	0 *	0
Nonane	0.342486	6.28268E-05	0.342423	0 *	0
Benzene	10.4726	0.00875101	10.4639	0 *	0
Toluene	23.0865	0.031302	23.0552	0 *	0
Ethylbenzene	0.502275	0.000986579	0.501288	0 *	0
o-Xylene	6.16685	0.0163372	6.15052	0 *	0
n-Hexane	5.83217	0.000462149	5.8317	0 *	0
2,2,4-Trimethylpentane	0	0	0	0 *	0
Decanes Plus	0.0128576	2.1533E-05	0.0128361	0 *	0
Decanes Plus Sat	0	0	0	0 *	0

Mole Fraction	15 %	16 %	17 %	18 %	19 %
Triethylene Glycol	0.556593	31.8528	0.0156176	99.5 *	93.4186
Water	82.4365	67.7625	82.6902	0.5 *	6.54747
Hydrogen Sulfide	0.0126095	8.33151E-05	0.012826	0 *	2.24815E-07
Carbon Dioxide	0.198929	0.000327395	0.202362	0 *	8.98422E-08
Nitrogen	0.00112634	9.83506E-08	0.00114581	0 *	7.01179E-13
Methane	1.64287	0.000405749	1.67126	0 *	1.37681E-08
Ethane	1.80532	0.00109894	1.83651	0 *	1.62195E-07
Propane	1.95665	0.00192276	1.99044	0 *	6.80244E-07
Isobutane	0.431419	0.000492986	0.438868	0 *	3.11913E-07
n-Butane	1.64192	0.00282684	1.67025	0 *	2.32049E-06
Isopentane	0.642935	0.0014609	0.654023	0 *	2.47977E-06
n-Pentane	1.03509	0.00265674	1.05294	0 *	5.46426E-06
i-C6	1.18041	0.0051481	1.20072	0 *	4.341E-05
i-C7	1.09005	0.00500895	1.10881	0 *	3.58045E-05
Octane	0.248835	0.00209367	0.2531	0 *	3.1563E-05
Nonane	0.0263935	0.000284942	0.0268448	0 *	8.8993E-06
Benzene	1.32516	0.065167	1.34694	0 *	0.00282564
Toluene	2.47654	0.197614	2.51593	0 *	0.0152177
Ethylbenzene	0.0467616	0.00540551	0.0474764	0 *	0.000720723
o-Xylene	0.574131	0.0895122	0.582508	0 *	0.0149964
n-Hexane	0.668922	0.0031195	0.680431	0 *	3.49377E-05
2,2,4-Trimethylpentane	0	0	0	0 *	0
Decanes Plus	0.000828445	8.16517E-05	0.000841354	0 *	8.61191E-06
Decanes Plus Sat	0	0	0	0 *	0

\* User Specified Values  
 ? Extrapolated or Approximate Values

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<h2 style="margin:0;">Process Streams Report</h2> <h3 style="margin:0;">All Streams</h3> <p style="margin:0;">Tabulated by Total Phase</p>	
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Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 3	

Mass Fraction	15 %	16 %	17 %	18 %	19 %
Triethylene Glycol	3.11356	79.1998	0.0892931	99.9398 *	99.143
Water	55.3208	20.2122	56.7163	0.0602469 *	0.833589
Hydrogen Sulfide	0.016008	4.70131E-05	0.0166424	0 *	5.41468E-08
Carbon Dioxide	0.326116	0.000238563	0.339069	0 *	2.79424E-08
Nitrogen	0.00117534	4.5617E-08	0.00122206	0 *	1.38814E-13
Methane	0.981751	0.000107774	1.02077	0 *	1.56092E-09
Ethane	2.0221	0.000547116	2.10245	0 *	3.44663E-08
Propane	3.21393	0.0014038	3.34163	0 *	2.11981E-07
Isobutane	0.934048	0.000474418	0.971156	0 *	1.28119E-07
n-Butane	3.55485	0.00272037	3.69604	0 *	9.53146E-07
Isopentane	1.72792	0.00174515	1.79653	0 *	1.26438E-06
n-Pentane	2.78187	0.00317368	2.89231	0 *	2.78611E-06
i-C6	3.78917	0.00734539	3.93949	0 *	2.64369E-05
i-C7	4.06866	0.00831012	4.23005	0 *	2.53543E-05
Octane	1.0588	0.00395974	1.10073	0 *	2.54795E-05
Nonane	0.126096	0.000605084	0.131084	0 *	8.06618E-06
Benzene	3.85578	0.0842808	4.00569	0 *	0.00155981
Toluene	8.49991	0.301469	8.82578	0 *	0.00990896
Ethylbenzene	0.184926	0.00950173	0.191899	0 *	0.000540738
o-Xylene	2.2705	0.157343	2.35449	0 *	0.0112514
n-Hexane	2.14727	0.00445095	2.23244	0 *	2.12772E-05
2,2,4-Trimethylpentane	0	0	0	0 *	0
Decanes Plus	0.00473388	0.000207384	0.0049138	0 *	9.33602E-06
Decanes Plus Sat	0	0	0	0 *	0

Stream Properties						
Property	Units	15	16	17	18	19
Temperature	°F	290.64	215	215 *	85 *	
Pressure	psig	0	0	0	0.5 *	0.5
Molecular Weight	lb/lbmol	26.8455	60.397	26.2656	149.512	141.502
Mass Flow	lb/h	271.608	10.3832	261.225	1.78978	0
Std Vapor Volumetric Flow	MMSCFD	0.0921459	0.00156574	0.0905801	0.000109026	0
Std Liquid Volumetric Flow	sgpm	0.663595	0.0188908	0.644705	0.00316768	0
API Gravity			-4.52168		-7.10455	
Net Ideal Gas Heating Value	Btu/ft^3	571.867	1219.59	560.671	3757.91	3529.77

**Remarks**

\* User Specified Values  
 ? Extrapolated or Approximate Values

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 3	

**Connections**

	20	21	22	23	24
From Block	TEG MAKEUP TANK	TEG Pump	XCHG-102	XCHG-103	BTEX Cond.
To Block	TEG Pump	XCHG-102	RCYL-1	DRY GAS 3	Blowcase

**Stream Composition**

Mass Flow	20 lb/h	21 lb/h	22 lb/h	23 lb/h	24 lb/h
Triethylene Glycol	15444.3	15444.3	15444.3	1.4961	0.233256
Water	129.841	129.841	129.841	6.439	148.157
Hydrogen Sulfide	8.43389E-06	8.43389E-06	8.43389E-06	2.99046	0.0434741
Carbon Dioxide	4.3523E-06	4.3523E-06	4.3523E-06	593.264	0.885733
Nitrogen	0	0	0	1608.74	0.00319232
Methane	0	0	0	110675	2.66651
Ethane	5.36846E-06	5.36846E-06	5.36846E-06	30122	5.49212
Propane	3.30181E-05	3.30181E-05	3.30181E-05	19783.3	8.72917
Isobutane	1.99557E-05	1.99557E-05	1.99557E-05	4475.56	2.5369
n-Butane	0.000148462	0.000148462	0.000148462	9148.63	9.65499
Isopentane	0.000196939	0.000196939	0.000196939	3165.98	4.693
n-Pentane	0.000433963	0.000433963	0.000433963	3658.95	7.55545
i-C6	0.0041178	0.0041178	0.0041178	3489.74	10.2909
i-C7	0.00394917	0.00394917	0.00394917	2381.8	11.0499
Octane	0.00396868	0.00396868	0.00396868	341.351	2.87538
Nonane	0.00125639	0.00125639	0.00125639	29.9067	0.342423
Benzene	0.242955	0.242955	0.242955	64.6537	10.4639
Toluene	1.54342	1.54342	1.54342	99.7542	23.0552
Ethylbenzene	0.0842252	0.0842252	0.0842252	2.17112	0.501288
o-Xylene	1.75252	1.75252	1.75252	19.9425	6.15052
n-Hexane	0.00331413	0.00331413	0.00331413	1608.18	5.8317
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.00145418	0.00145418	0.00145418	0.255013	0.0128361
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	20 %	21 %	22 %	23 %	24 %
Triethylene Glycol	93.4193	93.4193	93.4193	0.000112724	0.0156176
Water	6.54682	6.54682	6.54682	0.00404414	82.6902
Hydrogen Sulfide	2.2479E-07	2.2479E-07	2.2479E-07	0.000992833	0.012826
Carbon Dioxide	8.98325E-08	8.98325E-08	8.98325E-08	0.152528	0.202362
Nitrogen	0	0	0	0.649782	0.00114581
Methane	0	0	0	78.06	1.67126
Ethane	1.62178E-07	1.62178E-07	1.62178E-07	11.3348	1.83651
Propane	6.8017E-07	6.8017E-07	6.8017E-07	5.07637	1.99044
Isobutane	3.11879E-07	3.11879E-07	3.11879E-07	0.871274	0.438868
n-Butane	2.32024E-06	2.32024E-06	2.32024E-06	1.781	1.67025
Isopentane	2.4795E-06	2.4795E-06	2.4795E-06	0.496511	0.654023
n-Pentane	5.46367E-06	5.46367E-06	5.46367E-06	0.573821	1.05294
i-C6	4.34053E-05	4.34053E-05	4.34053E-05	0.458205	1.20072
i-C7	3.58006E-05	3.58006E-05	3.58006E-05	0.268954	1.10881
Octane	3.15596E-05	3.15596E-05	3.15596E-05	0.0338124	0.2531
Nonane	8.89833E-06	8.89833E-06	8.89833E-06	0.00263841	0.0268448
Benzene	0.00282534	0.00282534	0.00282534	0.00936538	1.34694
Toluene	0.0152161	0.0152161	0.0152161	0.0122501	2.51593
Ethylbenzene	0.000720645	0.000720645	0.000720645	0.000231394	0.0474764
o-Xylene	0.0149948	0.0149948	0.0149948	0.00212544	0.582508
n-Hexane	3.49339E-05	3.49339E-05	3.49339E-05	0.211154	0.680431
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	8.61097E-06	8.61097E-06	8.61097E-06	1.88099E-05	0.000841354
Decanes Plus Sat	0	0	0	0	0

## Process Streams Report All Streams Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 3	

Mass Fraction	20	21	22	23	24
	%	%	%	%	%
Triethylene Glycol	99.1431	99.1431	99.1431	0.00078215	0.0892931
Water	0.8335	0.8335	0.8335	0.00336626	56.7163
Hydrogen Sulfide	5.41406E-08	5.41406E-08	5.41406E-08	0.00156339	0.0166424
Carbon Dioxide	2.79392E-08	2.79392E-08	2.79392E-08	0.310154	0.339069
Nitrogen	0	0	0	0.841035	0.00122206
Methane	0	0	0	57.8602	1.02077
Ethane	3.44624E-08	3.44624E-08	3.44624E-08	15.7476	2.10245
Propane	2.11957E-07	2.11957E-07	2.11957E-07	10.3426	3.34163
Isobutane	1.28104E-07	1.28104E-07	1.28104E-07	2.33979	0.971156
n-Butane	9.53036E-07	9.53036E-07	9.53036E-07	4.78284	3.69604
Isopentane	1.26423E-06	1.26423E-06	1.26423E-06	1.65515	1.79653
n-Pentane	2.78579E-06	2.78579E-06	2.78579E-06	1.91287	2.89231
i-C6	2.64338E-05	2.64338E-05	2.64338E-05	1.82441	3.93949
i-C7	2.53514E-05	2.53514E-05	2.53514E-05	1.24518	4.23005
Octane	2.54765E-05	2.54765E-05	2.54765E-05	0.178456	1.10073
Nonane	8.06525E-06	8.06525E-06	8.06525E-06	0.015635	0.131084
Benzene	0.00155963	0.00155963	0.00155963	0.0338005	4.00569
Toluene	0.00990782	0.00990782	0.00990782	0.0521508	8.82578
Ethylbenzene	0.000540676	0.000540676	0.000540676	0.00113505	0.191899
o-Xylene	0.0112501	0.0112501	0.0112501	0.0104258	2.35449
n-Hexane	2.12748E-05	2.12748E-05	2.12748E-05	0.840743	2.23244
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	9.33495E-06	9.33495E-06	9.33495E-06	0.000133319	0.0049138
Decanes Plus Sat	0	0	0	0	0

### Stream Properties

Property	Units	20	21	22	23	24
Temperature	°F	269.135	270.211	95 *	95 *	70 *
Pressure	psig	0.5	1315 *	1305	1281	0 *
Molecular Weight	lb/lbmol	141.503	141.503	141.503	21.6431	26.2656
Mass Flow	lb/h	15577.8	15577.8	15577.8	191280	261.225
Std Vapor Volumetric Flow	MMSCFD	1.00264	1.00264	1.00264	80.4926	0.0905801
Std Liquid Volumetric Flow	sgpm	27.6 *	27.6	27.6	1083.09	0.644705
API Gravity		-6.73538	-6.91914	-6.91775		
Net Ideal Gas Heating Value	Btu/ft^3	3529.79	3529.79	3529.79	1176.44	560.671

**Remarks**

\* User Specified Values  
? Extrapolated or Approximate Values

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 3	

**Connections**

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

**Stream Composition**

Mass Flow	26 lb/h	27 lb/h			
Triethylene Glycol	0.233256	0.233256			
Water	147.707	147.707			
Hydrogen Sulfide	0.00237415	0.00237415			
Carbon Dioxide	0.014509	0.014509			
Nitrogen	2.89319E-06	2.89319E-06			
Methane	0.00999798	0.00999798			
Ethane	0.138874	0.138874			
Propane	0.719097	0.719097			
Isobutane	0.506563	0.506563			
n-Butane	2.67441	2.67441			
Isopentane	2.29348	2.29348			
n-Pentane	4.25253	4.25253			
i-C6	7.74343	7.74343			
i-C7	10.045	10.045			
Octane	2.82352	2.82352			
Nonane	0.340294	0.340294			
Benzene	9.04272	9.04272			
Toluene	22.0798	22.0798			
Ethylbenzene	0.495047	0.495047			
o-Xylene	6.07964	6.07964			
n-Hexane	4.76451	4.76451			
2,2,4-Trimethylpentane	0	0			
Decanes Plus	0.0128255	0.0128255			
Decanes Plus Sat	0	0			

Mole Fraction	26 %	27 %			
Triethylene Glycol	0.0171476	0.0171476			
Water	90.5152	90.5152			
Hydrogen Sulfide	0.00076906	0.00076906			
Carbon Dioxide	0.00363959	0.00363959			
Nitrogen	1.14018E-06	1.14018E-06			
Methane	0.00688024	0.00688024			
Ethane	0.0509874	0.0509874			
Propane	0.180034	0.180034			
Isobutane	0.0962174	0.0962174			
n-Butane	0.507983	0.507983			
Isopentane	0.350936	0.350936			
n-Pentane	0.6507	0.6507			
i-C6	0.992002	0.992002			
i-C7	1.10671	1.10671			
Octane	0.272884	0.272884			
Nonane	0.0292915	0.0292915			
Benzene	1.27804	1.27804			
Toluene	2.64556	2.64556			
Ethylbenzene	0.0514787	0.0514787			
o-Xylene	0.632206	0.632206			
n-Hexane	0.610376	0.610376			
2,2,4-Trimethylpentane	0	0			
Decanes Plus	0.000923019	0.000923019			
Decanes Plus Sat	0	0			

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Dehy 3	

Mass Fraction	26 %	27 %			
Triethylene Glycol	0.10508	0.10508			
Water	66.541	66.541			
Hydrogen Sulfide	0.00106954	0.00106954			
Carbon Dioxide	0.0065362	0.0065362			
Nitrogen	1.30336E-06	1.30336E-06			
Methane	0.00450403	0.00450403			
Ethane	0.0625617	0.0625617			
Propane	0.323949	0.323949			
Isobutane	0.228203	0.228203			
n-Butane	1.20481	1.20481			
Isopentane	1.0332	1.0332			
n-Pentane	1.91574	1.91574			
i-C6	3.48837	3.48837			
i-C7	4.5252	4.5252			
Octane	1.27198	1.27198			
Nonane	0.1533	0.1533			
Benzene	4.07369	4.07369			
Toluene	9.94683	9.94683			
Ethylbenzene	0.223016	0.223016			
o-Xylene	2.73884	2.73884			
n-Hexane	2.14638	2.14638			
2,2,4-Trimethylpentane	0	0			
Decanes Plus	0.0057778	0.0057778			
Decanes Plus Sat	0	0			

**Stream Properties**

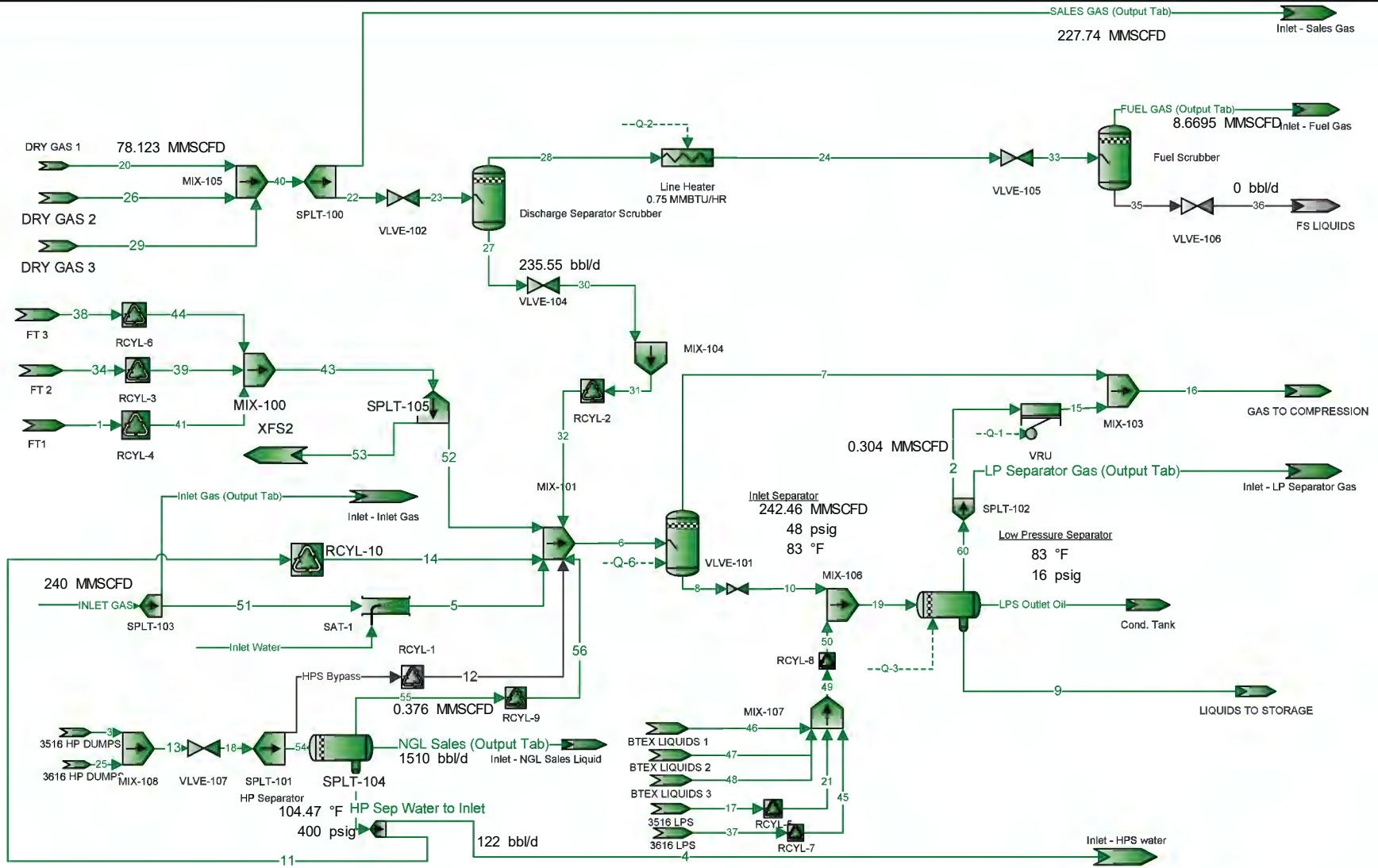
Property	Units	26	27			
Temperature	°F	70	77.0379			
Pressure	psig	0	16 *			
Molecular Weight	lb/lbmol	24.5061	24.5061			
Mass Flow	lb/h	221.979	221.979			
Std Vapor Volumetric Flow	MMSCFD	0.0824978	0.0824978			
Std Liquid Volumetric Flow	sgpm	0.493334	0.493334			
API Gravity		25.166	25.1905			
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	397.981	397.981			

**Remarks**

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# Inlet Plant Schematic

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	



\* User Specified Values  
 ? Extrapolated or Approximate Values



## Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	

### Connections

	FUEL GAS (Output Tab)	HP Sep Water to Inlet	HPS Bypass	INLET GAS	Inlet Gas (Output Tab)
From Block	Fuel Scrubber	HP Separator	SPLT-101	--	SPLT-103
To Block	Inlet - Fuel Gas	SPLT-104	RCYL-1	SPLT-103	Inlet - Inlet Gas

### Stream Composition

Mass Flow	FUEL GAS (Output Tab) lb/h	HP Sep Water to Inlet lb/h	HPS Bypass lb/h	INLET GAS lb/h	Inlet Gas (Output Tab) lb/h
Triethylene Glycol	0.00109758	3.63696E-13	0	0 *	0
Water	0.703909	1777.11	0	0 *	0
Hydrogen Sulfide	0.317758	0.0012213	0	8.98076 *	8.98076
Carbon Dioxide	64.854	0.072354	0	1751.16 *	1751.16
Nitrogen	179.203	0.00270781	0	4731.8 *	4731.8
Methane	12247.3	0.614716	0	325712 *	325712
Ethane	3221.93	0.274955	0	89092.8 *	89092.8
Propane	1971.12	0.110454	0	59260.8 *	59260.8
Isobutane	399.536	0.0123856	0	13707.8 *	13707.8
n-Butane	758.131	0.0375728	0	28487.7 *	28487.7
Isopentane	210.939	0.00642267	0	10437.7 *	10437.7
n-Pentane	221.031	0.00369741	0	12433.9 *	12433.9
i-C6	139.242	0.003524	0	13897.5 *	13897.5
i-C7	49.8764	0.000980058	0	13862.4 *	13862.4
Octane	2.5282	3.19503E-05	0	6260.95 *	6260.95
Nonane	0.0820406	1.5714E-06	0	2906.53 *	2906.53
Benzene	2.24537	0.0229467	0	329.336 *	329.336
Toluene	1.53833	0.022181	0	946.907 *	946.907
Ethylbenzene	0.0147448	0.000295319	0	55.9517 *	55.9517
o-Xylene	0.111541	0.00425943	0	755.348 *	755.348
n-Hexane	52.2186	0.000786287	0	7016.87 *	7016.87
2,2,4-Trimethylpentane	0	0	0	0 *	0
Decanes Plus	0.000178722	2.00163E-06	0	1374.38 *	1374.38
Decanes Plus Sat	0	0	0	0 *	0

Mole Fraction	FUEL GAS (Output Tab) %	HP Sep Water to Inlet %	HPS Bypass %	INLET GAS %	Inlet Gas (Output Tab) %
Triethylene Glycol	7.67809E-07	2.4538E-15	7.17527E-16	0 *	0
Water	0.00410474	99.9459	29.2842	0 *	0
Hydrogen Sulfide	0.000979481	3.63081E-05	0.000772731	0.00099999 *	0.00099999
Carbon Dioxide	0.154811	0.00166575	0.0559877	0.150998 *	0.150998
Nitrogen	0.67203	9.79367E-05	0.0505071	0.640994 *	0.640994
Methane	80.2011	0.0388236	14.4367	77.0472 *	77.0472
Ethane	11.2566	0.00926476	7.33573	11.2439 *	11.2439
Propane	4.69599	0.00253792	7.54759	5.09995 *	5.09995
Isobutane	0.722144	0.000215907	2.39422	0.894991 *	0.894991
n-Butane	1.37029	0.000654974	6.45682	1.85998 *	1.85998
Isopentane	0.307141	9.01942E-05	3.14909	0.548995 *	0.548995
n-Pentane	0.321835	5.19232E-05	4.45835	0.653993 *	0.653993
i-C6	0.169745	4.14329E-05	6.93117	0.611994 *	0.611994
i-C7	0.0522913	9.90987E-06	8.76582	0.524995 *	0.524995
Octane	0.00232512	2.83395E-07	3.15699	0.207998 *	0.207998
Nonane	6.71992E-05	1.24138E-08	0.604178	0.0859991 *	0.0859991
Benzene	0.00301982	0.000297643	0.210231	0.0159998 *	0.0159998
Toluene	0.00175396	0.000243912	0.701832	0.0389996 *	0.0389996
Ethylbenzene	1.45904E-05	2.8184E-06	0.0293877	0.00199998 *	0.00199998
o-Xylene	0.000110373	4.06502E-05	0.348498	0.0269997 *	0.0269997
n-Hexane	0.0636578	9.24465E-06	4.06317	0.308997 *	0.308997
2,2,4-Trimethylpentane	0	0	0	0 *	0
Decanes Plus	1.22395E-07	1.32206E-08	0.0187407	0.0339997 *	0.0339997
Decanes Plus Sat	0	0	0	0 *	0

\* 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:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	

Mass Fraction	FUEL GAS (Output Tab) %	HP Sep Water to Inlet %	HPS Bypass %	INLET GAS %	Inlet Gas (Output Tab) %
Triethylene Glycol	5.62198E-06	2.04519E-14	2.26004E-15	0 *	0
Water	0.00360555	99.933	11.0652	0 *	0
Hydrogen Sulfide	0.00162761	6.8678E-05	0.000552364	0.00151438 *	0.00151438
Carbon Dioxide	0.332194	0.00406872	0.0516804	0.295289 *	0.295289
Nitrogen	0.917908	0.00015227	0.0296759	0.7979 *	0.7979
Methane	62.733	0.0345676	4.85765	54.9233 *	54.9233
Ethane	16.5033	0.0154617	4.62646	15.0233 *	15.0233
Propane	10.0964	0.0062112	6.98056	9.99287 *	9.99287
Isobutane	2.04649	0.000696485	2.91872	2.31148 *	2.31148
n-Butane	3.88328	0.00211285	7.8713	4.80374 *	4.80374
Isopentane	1.08047	0.000361169	4.76541	1.76005 *	1.76005
n-Pentane	1.13216	0.000207918	6.74667	2.09668 *	2.09668
i-C6	0.713221	0.000198167	12.5278	2.34347 *	2.34347
i-C7	0.255476	5.51121E-05	18.4228	2.33754 *	2.33754
Octane	0.0129499	1.79668E-06	7.5637	1.05575 *	1.05575
Nonane	0.000420226	8.83655E-08	1.62527	0.490115 *	0.490115
Benzene	0.0115012	0.00129037	0.344429	0.0555343 *	0.0555343
Toluene	0.00787961	0.00124732	1.35631	0.159672 *	0.159672
Ethylbenzene	7.55253E-05	1.66068E-05	0.0654384	0.00943487 *	0.00943487
o-Xylene	0.000571334	0.000239523	0.776012	0.127371 *	0.127371
n-Hexane	0.267473	4.42157E-05	7.34403	1.18322 *	1.18322
2,2,4-Trimethylpentane	0	0	0	0 *	0
Decanes Plus	9.15444E-07	1.12559E-07	0.0602972	0.231755 *	0.231755
Decanes Plus Sat	0	0	0	0 *	0

**Stream Properties**

Property	Units	FUEL GAS (Output Tab)	HP Sep Water to Inlet	HPS Bypass	INLET GAS	Inlet Gas (Output Tab)
Temperature	°F	78.4346	104.468		100 *	100
Pressure	psig	120	400	400	48 *	48
Molecular Weight	lb/lbmol	20.5095	18.0176	47.6775	22.5046	22.5046
Mass Flow	lb/h	19522.9	1778.3	0	593031	593031
Std Vapor Volumetric Flow	MMSCFD	8.66951	0.898902	0	240 *	240
Std Liquid Volumetric Flow	sgpm	114.232	3.55916	0 *	3277.73	3277.73
API Gravity			10.0377			
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	1119.76	0.619497	2178.85	1219.09	1219.09

**Remarks**

<b>Process Streams Report</b>		
<b>All Streams</b>		
Tabulated by Total Phase		

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	

<b>Connections</b>					
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	Inlet Water	LP Separator Gas (Output Tab)	LPS Outlet Oil	NGL Sales (Output Tab)	SALES GAS (Output Tab)
From Block	--	SPLT-102	Low Pressure Separator	HP Separator	SPLT-100
To Block	SAT-1	Inlet - LP Separator Gas	Cond. Tank	Inlet - NGL Sales Liquid	Inlet - Sales Gas

<b>Stream Composition</b>					
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	Inlet Water	LP Separator Gas (Output Tab)	LPS Outlet Oil	NGL Sales (Output Tab)	SALES GAS (Output Tab)
Mass Flow	lb/h	lb/h	lb/h	lb/h	lb/h
Triethylene Glycol	0 *	1.22979E-08	0.000105418	3.97916E-16	4.23244
Water	7627.74 *	11.6962	2.35238	3.37229	18.1814
Hydrogen Sulfide	0 *	0.029832	0.0132921	0.0679552	8.45733
Carbon Dioxide	0 *	2.53826	0.390069	4.89025	1678.38
Nitrogen	0 *	1.11928	0.0173816	0.886183	4551.68
Methane	0 *	216.914	12.1377	308.115	313137
Ethane	0 *	214.175	74.294	555.869	85223.8
Propane	0 *	243.07	291.383	999.189	55972.1
Isobutane	0 *	66.0947	194.023	443.645	12662.5
n-Butane	0 *	141.469	603.821	1215.24	25883.3
Isopentane	0 *	48.8422	506.015	751.184	8957.15
n-Pentane	0 *	56.7021	775.28	1068.15	10351.7
i-C6	0 *	54.991	1856.96	2001.98	9872.84
i-C7	0 *	40.0174	4072.13	2958.11	6738.09
Octane	0 *	8.71489	4034.58	1217.3	965.61
Nonane	0 *	1.74077	2534.49	261.733	84.5949
Benzene	0 *	1.72374	84.3951	55.1145	182.354
Toluene	0 *	2.7209	438.876	217.975	281.085
Ethylbenzene	0 *	0.0780583	38.873	10.5321	6.12056
o-Xylene	0 *	0.889378	568.174	124.917	56.1907
n-Hexane	0 *	25.2349	1223.49	1175.95	4549.63
2,2,4-Trimethylpentane	0 *	0	0	0	0
Decanes Plus	0 *	0.147899	1350.24	9.71307	0.720875
Decanes Plus Sat	0 *	0	0	0	0

	Inlet Water	LP Separator Gas (Output Tab)	LPS Outlet Oil	NGL Sales (Output Tab)	SALES GAS (Output Tab)
Mole Fraction	%	%	%	%	%
Triethylene Glycol	0 *	2.45037E-10	3.63168E-07	1.33859E-18	0.000112711
Water	100 *	1.94266	0.067554	0.0945652	0.00403603
Hydrogen Sulfide	0 *	0.00261918	0.000201774	0.0010073	0.000992409
Carbon Dioxide	0 *	0.172577	0.00458542	0.0561347	0.152515
Nitrogen	0 *	0.119555	0.000321002	0.015981	0.649792
Methane	0 *	40.4586	0.391427	9.70261	78.0606
Ethane	0 *	21.3129	1.27826	9.33899	11.3347
Propane	0 *	16.4941	3.41864	11.4472	5.07626
Isobutane	0 *	3.40265	1.72702	3.85603	0.871255
n-Butane	0 *	7.28305	5.37465	10.5625	1.78093
Isopentane	0 *	2.02563	3.62843	5.25974	0.496488
n-Pentane	0 *	2.3516	5.55922	7.47915	0.573785
i-C6	0 *	1.90942	11.1482	11.7361	0.45817
i-C7	0 *	1.195	21.0247	14.9137	0.268924
Octane	0 *	0.228287	18.2729	5.38355	0.0338061
Nonane	0 *	0.0406124	10.2235	1.03093	0.00263778
Benzene	0 *	0.0660311	0.558965	0.356448	0.00933611
Toluene	0 *	0.0883618	2.46425	1.19513	0.0122002
Ethylbenzene	0 *	0.00220004	0.189431	0.0501163	0.000230557

\* User Specified Values  
 ? Extrapolated or Approximate Values

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	

	Inlet Water	LP Separator Gas (Output Tab)	LPS Outlet Oil	NGL Sales (Output Tab)	SALES GAS (Output Tab)
Mole Fraction	%	%	%	%	%
o-Xylene	0 *	0.0250668	2.76875	0.594411	0.00211666
n-Hexane	0 *	0.876216	7.34517	6.8937	0.211135
2,2,4-Trimethylpentane	0 *	0	0	0	0
Decanes Plus	0 *	0.00288492	4.55376	0.0319873	1.87933E-05
Decanes Plus Sat	0 *	0	0	0	0

	Inlet Water	LP Separator Gas (Output Tab)	LPS Outlet Oil	NGL Sales (Output Tab)	SALES GAS (Output Tab)
Mass Fraction	%	%	%	%	%
Triethylene Glycol	0 *	1.0798E-09	5.64882E-07	2.97308E-18	0.000782067
Water	100 *	1.02696	0.0126052	0.0251966	0.00335955
Hydrogen Sulfide	0 *	0.00261935	7.12256E-05	0.000507737	0.00156274
Carbon Dioxide	0 *	0.222868	0.00209018	0.0365382	0.31013
Nitrogen	0 *	0.0982766	9.3139E-05	0.00662124	0.841057
Methane	0 *	19.0458	0.06504	2.30212	57.8613
Ethane	0 *	18.8053	0.398104	4.15325	15.7476
Propane	0 *	21.3423	1.56138	7.46559	10.3425
Isobutane	0 *	5.80333	1.03967	3.31476	2.33977
n-Butane	0 *	12.4215	3.23557	9.07984	4.7827
Isopentane	0 *	4.2885	2.71148	5.61258	1.6551
n-Pentane	0 *	4.97863	4.15434	7.98087	1.91277
i-C6	0 *	4.82839	9.95054	14.9581	1.8243
i-C7	0 *	3.51366	21.8205	22.1019	1.24506
Octane	0 *	0.765195	21.6193	9.0952	0.178425
Nonane	0 *	0.152845	13.5811	1.95558	0.0156314
Benzene	0 *	0.15135	0.452231	0.411796	0.0336952
Toluene	0 *	0.238904	2.35172	1.62863	0.0519387
Ethylbenzene	0 *	0.00685378	0.208301	0.0786918	0.00113095
o-Xylene	0 *	0.0780903	3.04456	0.933335	0.0103829
n-Hexane	0 *	2.2157	6.55608	8.78628	0.840677
2,2,4-Trimethylpentane	0 *	0	0	0	0
Decanes Plus	0 *	0.012986	7.23526	0.0725726	0.000133203
Decanes Plus Sat	0 *	0	0	0	0

**Stream Properties**

Property	Units	Inlet Water	LP Separator Gas (Output Tab)	LPS Outlet Oil	NGL Sales (Output Tab)	SALES GAS (Output Tab)
Temperature	°F	293.732	83	83	104.468	93.2685
Pressure	psig	48	16	16	400	1281
Molecular Weight	lb/lbmol	18.0153	34.0787	96.5475	67.6131	21.6429
Mass Flow	lb/h	7627.74	1138.91	18661.9	13383.9	541186
Std Vapor Volumetric Flow	MMSCFD	3.8562	0.304377	1.76044	1.80284	227.739
Std Liquid Volumetric Flow	sgpm	15.2484	5.09538	54.0967	44.056	3064.4
API Gravity				71.5	94.2821	
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	0	1784.74	4873.39	3459.59	1176.43

**Remarks**

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	

**Connections**

	1	2	3	4	5
From Block	FT1	SPLT-102	3516 HP DUMPS	SPLT-104	SAT-1
To Block	RCYL-4	VRU	MIX-108	Inlet - HPS water	MIX-101

**Stream Composition**

Mass Flow	1 lb/h	2 lb/h	3 lb/h	4 lb/h	5 lb/h
Triethylene Glycol	0.010583	1.22979E-08	5.21475E-16	3.63696E-13	0
Water	0.750143	11.6962	67.2624	1777.11	7627.74
Hydrogen Sulfide	0.0246325	0.029832	0.00474335	0.0012213	8.98076
Carbon Dioxide	2.35023	2.53826	0.508278	0.072354	1751.16
Nitrogen	0.258251	1.11928	0.385382	0.00270781	4731.8
Methane	58.3575	216.914	54.2089	0.614716	325712
Ethane	36.0472	214.175	40.7699	0.274955	89092.8
Propane	30.3511	243.07	52.078	0.110454	59260.8
Isobutane	6.49601	66.0947	19.0657	0.0123856	13707.8
n-Butane	17.1004	141.469	48.8384	0.0375728	28487.7
Isopentane	5.29965	48.8422	25.729	0.00642267	10437.7
n-Pentane	7.14755	56.7021	35.1725	0.00369741	12433.9
i-C6	5.8276	54.991	56.4422	0.003524	13897.5
i-C7	4.09456	40.0174	66.9925	0.000980058	13862.4
Octane	0.491456	8.71489	17.9542	3.19503E-05	6260.95
Nonane	0.0337787	1.74077	2.3658	1.5714E-06	2906.53
Benzene	0.41926	1.72374	1.47641	0.0229467	329.336
Toluene	0.531422	2.7209	4.58498	0.022181	946.907
Ethylbenzene	0.00768648	0.0780583	0.156089	0.000295319	55.9517
o-Xylene	0.0745228	0.889378	1.68811	0.00425943	755.348
n-Hexane	2.67335	25.2349	31.2331	0.000786287	7016.87
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.000238971	0.147899	0.0304954	2.00163E-06	1374.38
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	1 %	2 %	3 %	4 %	5 %
Triethylene Glycol	0.00110729	2.45037E-10	2.54669E-17	2.4538E-15	0
Water	0.654258	1.94266	27.3821	99.9459	1.58134
Hydrogen Sulfide	0.0113565	0.00261918	0.00102073	3.63081E-05	0.000984177
Carbon Dioxide	0.839093	0.172577	0.0847013	0.00166575	0.148611
Nitrogen	0.144851	0.119555	0.100893	9.79367E-05	0.630857
Methane	57.1573	40.4586	24.7819	0.0388236	75.8288
Ethane	18.8364	21.3129	9.94387	0.00926476	11.0661
Propane	10.815	16.4941	8.66151	0.00253792	5.0193
Isobutane	1.75611	3.40265	2.40572	0.000215907	0.880838
n-Butane	4.62284	7.28305	6.16247	0.000654974	1.83057
Isopentane	1.15415	2.02563	2.61535	9.01942E-05	0.540313
n-Pentane	1.55659	2.3516	3.57528	5.19232E-05	0.643652
i-C6	1.06256	1.90942	4.80348	4.14329E-05	0.602316
i-C7	0.642062	1.195	4.90326	9.90987E-06	0.516693
Octane	0.0676014	0.228287	1.15273	2.83395E-07	0.204709
Nonane	0.00413823	0.0406124	0.135282	1.24138E-08	0.0846392
Benzene	0.084336	0.0660311	0.13862	0.000297643	0.0157468
Toluene	0.0906244	0.0883618	0.364948	0.000243912	0.0383829
Ethylbenzene	0.00113761	0.00220004	0.0107827	2.8184E-06	0.00196835
o-Xylene	0.0110295	0.0250668	0.116615	4.06502E-05	0.0265728
n-Hexane	0.487437	0.876216	2.65808	9.24465E-06	0.304111
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	2.44774E-05	0.00288492	0.00145795	1.32206E-08	0.033462
Decanes Plus Sat	0	0	0	0	0

\* User Specified Values

? Extrapolated or Approximate Values

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<b>Process Streams Report</b> <b>All Streams</b> Tabulated by Total Phase
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Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	

Mass Fraction	1 %	2 %	3 %	4 %	5 %
Triethylene Glycol	0.00593391	1.0798E-09	9.89616E-17	2.04519E-14	0
Water	0.420609	1.02696	12.7645	99.933	1.2699
Hydrogen Sulfide	0.0138116	0.00261935	0.000900156	6.8678E-05	0.00149515
Carbon Dioxide	1.31778	0.222868	0.0964572	0.00406872	0.29154
Nitrogen	0.144802	0.0982766	0.0731348	0.00015227	0.787767
Methane	32.7213	19.0458	10.2873	0.0345676	54.2259
Ethane	20.2118	18.8053	7.737	0.0154617	14.8325
Propane	17.018	21.3423	9.88296	0.0062112	9.86597
Isobutane	3.64234	5.80333	3.61814	0.000696485	2.28212
n-Butane	9.58824	12.4215	9.26818	0.00211285	4.74274
Isopentane	2.97153	4.2885	4.88266	0.000361169	1.7377
n-Pentane	4.00766	4.97863	6.67477	0.000207918	2.07005
i-C6	3.26756	4.82839	10.7112	0.000198167	2.31371
i-C7	2.29584	3.51366	12.7133	5.51121E-05	2.30786
Octane	0.275561	0.765195	3.40721	1.79668E-06	1.04235
Nonane	0.0189399	0.152845	0.448964	8.83655E-08	0.483891
Benzene	0.235081	0.15135	0.280182	0.00129037	0.0548291
Toluene	0.297971	0.238904	0.870102	0.00124732	0.157645
Ethylbenzene	0.00430984	0.00685378	0.0296215	1.66068E-05	0.00931506
o-Xylene	0.0417853	0.0780903	0.320357	0.000239523	0.125753
n-Hexane	1.49896	2.2157	5.92718	4.42157E-05	1.1682
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.000133992	0.012986	0.00578718	1.12559E-07	0.228812
Decanes Plus Sat	0	0	0	0	0

Stream Properties						
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Property	Units	1	2	3	4	5
Temperature	°F	159.542	83	100	104.468	100
Pressure	psig	55	16	1296	400	48
Molecular Weight	lb/lbmol	28.0228	34.0787	38.6458	18.0176	22.4336
Mass Flow	lb/h	178.347	1138.91	526.947	1778.3	600659
Std Vapor Volumetric Flow	MMSCFD	0.0579641	0.304377	0.124185	0.898902	243.856
Std Liquid Volumetric Flow	sgpm	0.881668	5.09538	1.89766	3.55916	3292.97
API Gravity				118.592	10.0377	
Net Ideal Gas Heating Value	Btu/ft^3	1479.77	1784.74	1752.21	0.619497	1199.82

**Remarks**

\* User Specified Values  
 ? Extrapolated or Approximate Values

<b>Process Streams Report</b>		
<b>All Streams</b>		
Tabulated by Total Phase		

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan 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	LIQUIDS TO STORAGE	MIX-106

Stream Composition					
Mass Flow	6 lb/h	7 lb/h	8 lb/h	9 lb/h	10 lb/h
Triethylene Glycol	0.197868	1.6988E-06	0.197867	0.890855	0.197867
Water	9409.26	4473.5	4935.75	7601.76	4935.75
Hydrogen Sulfide	9.09218	9.0875	0.00467918	0.00114196	0.00467918
Carbon Dioxide	1763.12	1762.82	0.302565	0.0321856	0.302565
Nitrogen	4737.14	4737.07	0.0763186	0.000490019	0.0763186
Methane	326490	326471	18.6142	0.24705	18.6142
Ethane	89536.6	89505.7	30.8186	0.92585	30.8186
Propane	59718.2	59646.4	71.7802	3.0817	71.7802
Isobutane	13854.7	13814.9	39.7995	1.98476	39.7995
n-Butane	28856.5	28737	119.551	6.17251	119.551
Isopentane	10613.1	10505.4	107.697	5.12847	107.697
n-Pentane	12662.1	12492.6	169.48	7.8396	169.48
i-C6	14182.1	13730.8	451.37	18.7681	451.37
i-C7	14100.9	12843.7	1257.18	41.1376	1257.18
Octane	6299.3	4353.1	1946.2	40.7536	1946.2
Nonane	2910	1215.07	1694.93	25.601	1694.93
Benzene	335.927	319.928	15.999	0.968518	15.999
Toluene	958.603	825.511	133.092	4.57009	133.092
Ethylbenzene	56.2122	37.6405	18.5718	0.396042	18.5718
o-Xylene	757.782	462.535	295.248	5.79674	295.248
n-Hexane	7159.64	6837.35	322.29	12.361	322.29
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	1374.41	139.46	1234.95	13.6396	1234.95
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	6 %	7 %	8 %	9 %	10 %
Triethylene Glycol	4.88538E-06	4.2493E-11	0.000377732	0.00139929	0.000377732
Water	1.93655	0.932769	78.5444	99.5329	78.5444
Hydrogen Sulfide	0.00098917	0.00100162	3.93606E-05	7.90374E-06	3.93606E-05
Carbon Dioxide	0.148542	0.150463	0.00197095	0.000172508	0.00197095
Nitrogen	0.626996	0.635201	0.000781029	4.12611E-06	0.000781029
Methane	75.4593	76.4437	0.332641	0.00363252	0.332641
Ethane	11.0406	11.1815	0.29383	0.00726297	0.29383
Propane	5.0214	5.08108	0.466672	0.016485	0.466672
Isobutane	0.88383	0.892838	0.196308	0.00805489	0.196308
n-Butane	1.84084	1.85723	0.589676	0.0250503	0.589676
Isopentane	0.545414	0.546954	0.427936	0.0167669	0.427936
n-Pentane	0.650716	0.650418	0.673428	0.0256306	0.673428
i-C6	0.6102	0.59852	1.50159	0.0513724	1.50159
i-C7	0.521777	0.481484	3.59686	0.0968404	3.59686
Octane	0.204471	0.14315	4.88446	0.084156	4.88446
Nonane	0.0841263	0.0355872	3.78861	0.0470842	3.78861
Benzene	0.0159456	0.0153852	0.0587191	0.00292472	0.0587191
Toluene	0.0385755	0.033655	0.41411	0.0116998	0.41411
Ethylbenzene	0.00196319	0.00133181	0.0501504	0.00087994	0.0501504
o-Xylene	0.0264653	0.0163655	0.797274	0.0128794	0.797274
n-Hexane	0.30805	0.298038	1.07218	0.0338348	1.07218
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.0332204	0.00341501	2.30795	0.0209734	2.30795
Decanes Plus Sat	0	0	0	0	0

\* User Specified Values  
 ? Extrapolated or Approximate Values

<b>Process Streams Report</b>		
<b>All Streams</b>		
Tabulated by Total Phase		

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	

Mass Fraction	6 %	7 %	8 %	9 %	10 %
Triethylene Glycol	3.26631E-05	2.86514E-10	0.00153815	0.0114329	0.00153815
Water	1.55323	0.754485	38.369	97.5578	38.369
Hydrogen Sulfide	0.00150089	0.00153267	3.63745E-05	1.46554E-05	3.63745E-05
Carbon Dioxide	0.291048	0.297311	0.00235205	0.000413057	0.00235205
Nitrogen	0.781984	0.798937	0.000593277	6.2887E-06	0.000593277
Methane	53.8954	55.0615	0.144701	0.00317054	0.144701
Ethane	14.7803	15.0957	0.239574	0.011882	0.239574
Propane	9.85798	10.0598	0.557997	0.0395493	0.557997
Isobutane	2.28707	2.32997	0.309389	0.0254716	0.309389
n-Butane	4.76349	4.84668	0.929351	0.0792154	0.929351
Isopentane	1.75196	1.7718	0.837205	0.0658166	0.837205
n-Pentane	2.0902	2.10697	1.31748	0.10061	1.31748
i-C6	2.34112	2.31578	3.50881	0.240862	3.50881
i-C7	2.32771	2.16618	9.77292	0.527943	9.77292
Octane	1.03986	0.734179	15.1292	0.523015	15.1292
Nonane	0.480368	0.204929	13.1759	0.328552	13.1759
Benzene	0.0554532	0.053958	0.124371	0.0124296	0.124371
Toluene	0.158241	0.139228	1.03462	0.0586506	1.03462
Ethylbenzene	0.00927924	0.00634831	0.144371	0.00508264	0.144371
o-Xylene	0.125091	0.0780095	2.29516	0.0743929	2.29516
n-Hexane	1.18188	1.15316	2.50538	0.158636	2.50538
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.226881	0.0235209	9.6001	0.175045	9.6001
Decanes Plus Sat	0	0	0	0	0

Stream Properties						
Property	Units	6	7	8	9	10
Temperature	°F	99.4476	83 *	83	83	82.5225
Pressure	psig	48	48	48	16	16 *
Molecular Weight	lb/lbmol	22.4612	22.2722	36.8787	18.38	36.8787
Mass Flow	lb/h	605785	592921	12863.9	7792.06	12863.9
Std Vapor Volumetric Flow	MMSCFD	245.635	242.459	3.17689	3.8611	3.17689
Std Liquid Volumetric Flow	sgpm	3311.28	3279.05	32.2347	15.7481	32.2347
API Gravity				44.7038	11.5075	
Net Ideal Gas Heating Value	Btu/ft^3	1197.66	1198.36	1144.19	22.6049	1144.19

**Remarks**

\* User Specified Values  
 ? Extrapolated or Approximate Values



**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	

**Connections**

	11	12	13	14	15
From Block	SPLT-104	RCYL-1	MIX-108	RCYL-10	VRU
To Block	RCYL-10	MIX-101	VLVE-107	MIX-101	MIX-103

**Stream Composition**

Mass Flow	11 lb/h	12 lb/h	13 lb/h	14 lb/h	15 lb/h
Triethylene Glycol	3.63696E-13	0	3.64094E-13	0	1.22979E-08
Water	1777.11	0	1782.61	1777.1	11.6962
Hydrogen Sulfide	0.0012213	0	0.0889862	0.00122117	0.029832
Carbon Dioxide	0.072354	0	8.32573	0.0723417	2.53826
Nitrogen	0.00270781	0	4.78081	0.00270782	1.11928
Methane	0.614716	0	782.57	0.614716	216.914
Ethane	0.274955	0	745.325	0.274955	214.175
Propane	0.110454	0	1124.57	0.110454	243.07
Isobutane	0.0123856	0	470.207	0.0123856	66.0947
n-Butane	0.0375728	0	1268.07	0.0375728	141.469
Isopentane	0.00642267	0	767.709	0.00642267	48.8422
n-Pentane	0.00369741	0	1086.89	0.00369741	56.7021
i-C6	0.003524	0	2018.24	0.003524	54.991
i-C7	0.000980058	0	2967.92	0.000980052	40.0174
Octane	3.19503E-05	0	1218.52	3.19498E-05	8.71489
Nonane	1.5714E-06	0	261.832	1.57137E-06	1.74077
Benzene	0.0229467	0	55.4877	0.0229461	1.72374
Toluene	0.022181	0	218.503	0.0221812	2.7209
Ethylbenzene	0.000295319	0	10.5422	0.000295328	0.0780583
o-Xylene	0.00425943	0	125.016	0.00425961	0.889378
n-Hexane	0.000786287	0	1183.13	0.000786285	25.2349
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	2.00163E-06	0	9.71392	1.95738E-06	0.147899
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	11 %	12 %	13 %	14 %	15 %
Triethylene Glycol	2.4538E-15	8.20676E-13	7.17527E-16	0	2.45037E-10
Water	99.9459	23.6004	29.2842	99.9459	1.94266
Hydrogen Sulfide	3.63081E-05	0.000814536	0.000772731	3.63042E-05	0.00261918
Carbon Dioxide	0.00166575	0.0527788	0.0559877	0.00166546	0.172577
Nitrogen	9.79367E-05	0.146682	0.0505071	9.79369E-05	0.119555
Methane	0.0388236	19.1534	14.4367	0.0388236	40.4586
Ethane	0.00926476	10.2694	7.33573	0.00926477	21.3129
Propane	0.00253792	11.6167	7.54759	0.00253792	16.4941
Isobutane	0.000215907	2.73797	2.39422	0.000215908	3.40265
n-Butane	0.000654974	8.8775	6.45682	0.000654975	7.28305
Isopentane	9.01942E-05	3.33175	3.14909	9.01944E-05	2.02563
n-Pentane	5.19232E-05	4.66764	4.45835	5.19232E-05	2.3516
i-C6	4.14329E-05	2.81714	6.93117	4.14329E-05	1.90942
i-C7	9.90987E-06	6.16513	8.76582	9.90983E-06	1.195
Octane	2.83395E-07	2.61371	3.15699	2.83392E-07	0.228287
Nonane	1.24138E-08	0.356182	0.604178	1.24136E-08	0.0406124
Benzene	0.000297643	0.164297	0.210231	0.000297635	0.0660311
Toluene	0.000243912	0.401253	0.701832	0.000243914	0.0883618
Ethylbenzene	2.8184E-06	0.0259811	0.0293877	2.81849E-06	0.00220004
o-Xylene	4.06502E-05	0.218441	0.348498	4.0652E-05	0.0250668
n-Hexane	9.24465E-06	2.52742	4.06317	9.24463E-06	0.876216
2,2,4-Trimethylpentane	0	0.255304	0	0	0
Decanes Plus	1.32206E-08	0.000144212	0.0187407	1.29284E-08	0.00288492
Decanes Plus Sat	0	0	0	0	0

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	

Mass Fraction	11 %	12 %	13 %	14 %	15 %
Triethylene Glycol	2.04519E-14	2.8399E-12	2.26004E-15	0	1.0798E-09
Water	99.933	9.79715	11.0652	99.933	1.02696
Hydrogen Sulfide	6.8678E-05	0.000639677	0.000552364	6.86705E-05	0.00261935
Carbon Dioxide	0.00406872	0.0535236	0.0516804	0.00406803	0.222868
Nitrogen	0.00015227	0.094685	0.0296759	0.00015227	0.0982766
Methane	0.0345676	7.08037	4.85765	0.0345677	19.0458
Ethane	0.0154617	7.11547	4.62646	0.0154617	18.8053
Propane	0.0062112	11.8037	6.98056	0.00621122	21.3423
Isobutane	0.000696485	3.667	2.91872	0.000696487	5.80333
n-Butane	0.00211285	11.8897	7.8713	0.00211286	12.4215
Isopentane	0.000361169	5.53913	4.76541	0.00036117	4.2885
n-Pentane	0.000207918	7.76009	6.74667	0.000207919	4.97863
i-C6	0.000198167	5.59411	12.5278	0.000198167	4.82839
i-C7	5.51121E-05	14.235	18.4228	5.51119E-05	3.51366
Octane	1.79668E-06	6.87975	7.5637	1.79665E-06	0.765195
Nonane	8.83655E-08	1.05266	1.62527	8.8364E-08	0.152845
Benzene	0.00129037	0.295725	0.344429	0.00129034	0.15135
Toluene	0.00124732	0.85192	1.35631	0.00124733	0.238904
Ethylbenzene	1.66068E-05	0.0635593	0.0654384	1.66073E-05	0.00685378
o-Xylene	0.000239523	0.534387	0.776012	0.000239533	0.0780903
n-Hexane	4.42157E-05	5.01881	7.34403	4.42156E-05	2.2157
2,2,4-Trimethylpentane	0	0.672004	0	0	0
Decanes Plus	1.12559E-07	0.000509763	0.0602972	1.10071E-07	0.012986
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	11	12	13	14	15
Temperature	°F	104.468		111.158	104.468	184.602
Pressure	psig	400	500	718	400	70 *
Molecular Weight	lb/lbmol	18.0176	43.397	47.6775	18.0176	34.0787
Mass Flow	lb/h	1778.3	0	16110.1	1778.3	1138.91
Std Vapor Volumetric Flow	MMSCFD	0.898902	0	3.07743	0.898901	0.304377
Std Liquid Volumetric Flow	sgpm	3.55916	0	52.8443	3.55916	5.09538
API Gravity		10.0377			10.0377	
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	0.619497	2025.92	2178.85	0.619497	1784.74

**Remarks**

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	

**Connections**

	16	17	18	19	20
From Block	MIX-103	3516 LPS	VLVE-107	MIX-106	DRY GAS 1
To Block	GAS TO COMPRESSIO N	RCYL-5	SPLT-101	Low Pressure Separator	MIX-105

**Stream Composition**

Mass Flow	16 lb/h	17 lb/h	18 lb/h	19 lb/h	20 lb/h
Triethylene Glycol	1.7111E-06	1.12775E-07	3.64094E-13	0.89096	1.4518
Water	4485.2	197.846	1782.61	7615.81	6.23046
Hydrogen Sulfide	9.11733	0.00355324	0.0889862	0.0442661	2.90055
Carbon Dioxide	1765.36	0.284996	8.32573	2.96052	575.722
Nitrogen	4738.19	0.113	4.78081	1.13715	1561.41
Methane	326688	22.7017	782.57	229.299	107418
Ethane	89719.9	28.7105	745.325	289.395	29234.9
Propane	59889.5	52.5737	1124.57	537.535	19200.3
Isobutane	13881	25.5673	470.207	262.103	4343.67
n-Butane	28878.4	72.8935	1268.07	751.463	8878.78
Isopentane	10554.2	52.3279	767.709	559.985	3072.57
n-Pentane	12549.3	77.5293	1086.89	839.822	3550.9
i-C6	13785.7	171.832	2018.24	1930.72	3386.63
i-C7	12883.7	328.238	2967.92	4153.29	2311.29
Octane	4361.81	213.314	1218.52	4084.05	331.209
Nonane	1216.81	74.0474	261.832	2561.83	29.0157
Benzene	321.652	5.10733	55.4877	87.0874	62.4533
Toluene	828.232	27.1215	218.503	446.167	96.2195
Ethylbenzene	37.7185	1.89426	10.5422	39.3471	2.09566
o-Xylene	463.424	24.786	125.016	574.86	19.2344
n-Hexane	6862.59	109.046	1183.13	1261.09	1560.62
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	139.608	9.15196	9.71392	1364.03	0.247175
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	16 %	17 %	18 %	19 %	20 %
Triethylene Glycol	4.2747E-11	2.71113E-09	7.17527E-16	0.000911834	0.000112704
Water	0.934035	39.6474	29.2842	64.9717	0.00403185
Hydrogen Sulfide	0.00100364	0.000376394	0.000772731	0.000199622	0.000992191
Carbon Dioxide	0.15049	0.0233788	0.0559877	0.0103388	0.152508
Nitrogen	0.634554	0.0145627	0.0505071	0.00623882	0.649797
Methane	76.3985	5.10878	14.4367	2.19675	78.0609
Ethane	11.1942	3.44707	7.33573	1.47918	11.3346
Propane	5.09539	4.3043	7.54759	1.87353	5.07621
Isobutane	0.895985	1.58808	2.39422	0.693073	0.871245
n-Butane	1.86403	4.52768	6.45682	1.98708	1.78089
Isopentane	0.548808	2.61838	3.14909	1.19288	0.496477
n-Pentane	0.652551	3.87941	4.45835	1.78899	0.573766
i-C6	0.600163	7.19863	6.93117	3.44339	0.458153
i-C7	0.482379	11.8261	8.76582	6.37038	0.268908
Octane	0.143257	6.74177	3.15699	5.49498	0.0338029
Nonane	0.0355935	2.08432	0.604178	3.06991	0.00263745
Benzene	0.0154487	0.236051	0.210231	0.171351	0.00932104
Toluene	0.0337236	1.06268	0.701832	0.744228	0.0121744
Ethylbenzene	0.00133289	0.0644151	0.0293877	0.0569614	0.000230126
o-Xylene	0.0163764	0.842856	0.348498	0.832204	0.00211214
n-Hexane	0.298763	4.56831	4.06317	2.24911	0.211126
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.00341435	0.215386	0.0187407	1.36662	1.87847E-05
Decanes Plus Sat	0	0	0	0	0

\* User Specified Values

? Extrapolated or Approximate Values

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<b>Process Streams Report</b>		
<b>All Streams</b>		
Tabulated by Total Phase		

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	

Mass Fraction	16	17	18	19	20
	%	%	%	%	%
Triethylene Glycol	2.88035E-10	7.54302E-09	2.26004E-15	0.00322894	0.000782024
Water	0.755008	13.233	11.0652	27.6006	0.00335609
Hydrogen Sulfide	0.00153475	0.000237661	0.000552364	0.000160425	0.00156241
Carbon Dioxide	0.297168	0.0190622	0.0516804	0.0107293	0.310118
Nitrogen	0.797594	0.00755807	0.0296759	0.00412118	0.841069
Methane	54.9925	1.51842	4.85765	0.831007	57.8619
Ethane	15.1028	1.92032	4.62646	1.0488	15.7476
Propane	10.0814	3.51642	6.98056	1.94809	10.3424
Isobutane	2.33663	1.71008	2.91872	0.949892	2.33975
n-Butane	4.8612	4.87552	7.8713	2.72339	4.78263
Isopentane	1.77663	3.49998	4.76541	2.02945	1.65507
n-Pentane	2.11247	5.18559	6.74667	3.04361	1.91272
i-C6	2.3206	11.4931	12.5278	6.99717	1.82424
i-C7	2.16876	21.9544	18.4228	15.052	1.245
Octane	0.734238	14.2676	7.5637	14.8011	0.178409
Nonane	0.204829	4.9527	1.62527	9.28438	0.0156295
Benzene	0.0541447	0.341607	0.344429	0.315615	0.033641
Toluene	0.139419	1.81404	1.35631	1.61696	0.0518295
Ethylbenzene	0.00634928	0.126699	0.0654384	0.142599	0.00112885
o-Xylene	0.0780096	1.65782	0.776012	2.08336	0.0103608
n-Hexane	1.1552	7.2936	7.34403	4.57033	0.840644
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.0235007	0.612134	0.0602972	4.9434	0.000133143
Decanes Plus Sat	0	0	0	0	0

Stream Properties						
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Property	Units	16	17	18	19	20
Temperature	°F	83.1825	99.3328	104.468	89.7689	90
Pressure	psig	48	141	400 *	16	1286
Molecular Weight	lb/lbmol	22.2871	53.9755	47.6775	42.4079	21.6427
Mass Flow	lb/h	594060	1495.09	16110.1	27592.9	185646
Std Vapor Volumetric Flow	MMSCFD	242.763	0.252276	3.07743	5.92592	78.123
Std Liquid Volumetric Flow	sgpm	3284.14	4.44564	52.8443	74.9401	1051.2
API Gravity						
Net Ideal Gas Heating Value	Btu/ft^3	1199.1	2382.55	2178.85	1554.16	1176.43

**Remarks**

\* User Specified Values  
 ? Extrapolated or Approximate Values

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan 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-107	VLVE-102	Discharge Separator Scrubber	VLVE-105	MIX-108

**Stream Composition**

Mass Flow	21 lb/h	22 lb/h	23 lb/h	24 lb/h	25 lb/h
Triethylene Glycol	1.12775E-07	0.167262	0.167262	0.00109758	3.63572E-13
Water	197.846	0.718511	0.718511	0.703909	1715.35
Hydrogen Sulfide	0.00355324	0.334225	0.334225	0.317758	0.0842428
Carbon Dioxide	0.284996	66.3279	66.3279	64.854	7.81746
Nitrogen	0.113	179.878	179.878	179.203	4.39542
Methane	22.7017	12374.9	12374.9	12247.3	728.361
Ethane	28.7105	3367.96	3367.96	3221.93	704.555
Propane	52.5737	2211.96	2211.96	1971.12	1072.49
Isobutane	25.5673	500.409	500.409	399.536	451.141
n-Butane	72.8935	1022.88	1022.88	758.131	1219.23
Isopentane	52.3279	353.978	353.978	210.939	741.98
n-Pentane	77.5293	409.087	409.087	221.031	1051.72
i-C6	171.832	390.165	390.165	139.242	1961.8
i-C7	328.238	266.283	266.283	49.8764	2900.93
Octane	213.314	38.1599	38.1599	2.5282	1200.56
Nonane	74.0474	3.34311	3.34311	0.0820406	259.466
Benzene	5.10733	7.20644	7.20644	2.24537	54.0113
Toluene	27.1215	11.1082	11.1082	1.53833	213.918
Ethylbenzene	1.89426	0.241878	0.241878	0.0147448	10.3861
o-Xylene	24.786	2.2206	2.2206	0.111541	123.328
n-Hexane	109.046	179.797	179.797	52.2186	1151.89
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	9.15196	0.0284883	0.0284883	0.000178722	9.68342
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	21 %	22 %	23 %	24 %	25 %
Triethylene Glycol	2.71113E-09	0.000112711	0.000112711	7.67809E-07	7.46629E-16
Water	39.6474	0.00403603	0.00403603	0.00410474	29.3642
Hydrogen Sulfide	0.000376394	0.000992409	0.000992409	0.000979481	0.000762303
Carbon Dioxide	0.0233788	0.152515	0.152515	0.154811	0.0547803
Nitrogen	0.0145627	0.649792	0.649792	0.67203	0.0483883
Methane	5.10878	78.0606	78.0606	80.2011	14.0017
Ethane	3.44707	11.3347	11.3347	11.2566	7.22605
Propane	4.3043	5.07626	5.07626	4.69599	7.50075
Isobutane	1.58808	0.871255	0.871255	0.722144	2.39374
n-Butane	4.52768	1.78093	1.78093	1.37029	6.46919
Isopentane	2.61838	0.496488	0.496488	0.307141	3.17153
n-Pentane	3.87941	0.573785	0.573785	0.321835	4.49549
i-C6	7.19863	0.45817	0.45817	0.169745	7.02064
i-C7	11.8261	0.268924	0.268924	0.0522913	8.92825
Octane	6.74177	0.0338061	0.0338061	0.00232512	3.24127
Nonane	2.08432	0.00263778	0.00263778	6.71992E-05	0.623895
Benzene	0.236051	0.00933611	0.00933611	0.00301982	0.213242
Toluene	1.06268	0.0122002	0.0122002	0.00175396	0.715998
Ethylbenzene	0.0644151	0.000230557	0.000230557	1.45904E-05	0.03017
o-Xylene	0.842856	0.00211666	0.00211666	0.000110373	0.358249
n-Hexane	4.56831	0.211135	0.211135	0.0636578	4.12226
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.215386	1.87933E-05	1.87933E-05	1.22395E-07	0.0194675
Decanes Plus Sat	0	0	0	0	0

\* 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:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	

Mass Fraction	21 %	22 %	23 %	24 %	25 %
Triethylene Glycol	7.54302E-09	0.000782067	0.000782067	5.62198E-06	2.33312E-15
Water	13.233	0.00335955	0.00335955	0.00360555	11.0078
Hydrogen Sulfide	0.000237661	0.00156274	0.00156274	0.00162761	0.000540604
Carbon Dioxide	0.0190622	0.31013	0.31013	0.332194	0.0501662
Nitrogen	0.00755807	0.841057	0.841057	0.917908	0.0282063
Methane	1.51842	57.8613	57.8613	62.733	4.67404
Ethane	1.92032	15.7476	15.7476	16.5033	4.52128
Propane	3.51642	10.3425	10.3425	10.0964	6.88241
Isobutane	1.71008	2.33977	2.33977	2.04649	2.89507
n-Butane	4.87552	4.7827	4.7827	3.88328	7.82407
Isopentane	3.49998	1.6551	1.6551	1.08047	4.76144
n-Pentane	5.18559	1.91277	1.91277	1.13216	6.7491
i-C6	11.4931	1.8243	1.8243	0.713221	12.5893
i-C7	21.9544	1.24506	1.24506	0.255476	18.6158
Octane	14.2676	0.178425	0.178425	0.0129499	7.70426
Nonane	4.9527	0.0156314	0.0156314	0.000420226	1.66505
Benzene	0.341607	0.0336952	0.0336952	0.0115012	0.346601
Toluene	1.81404	0.0519387	0.0519387	0.00787961	1.37276
Ethylbenzene	0.126699	0.00113095	0.00113095	7.55253E-05	0.0666496
o-Xylene	1.65782	0.0103829	0.0103829	0.000571334	0.79142
n-Hexane	7.2936	0.840677	0.840677	0.267473	7.39194
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.612134	0.000133203	0.000133203	9.15444E-07	0.0621405
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	21	22	23	24	25
Temperature	°F	99.3328	93.2685	63.3013	120 *	111.92
Pressure	psig	141	1281	700 *	690	718
Molecular Weight	lb/lbmol	53.9755	21.6429	21.6429	20.5095	48.0573
Mass Flow	lb/h	1495.09	21387.1	21387.1	19522.9	15583.1
Std Vapor Volumetric Flow	MMSCFD	0.252276	9 *	9	8.66951	2.95324
Std Liquid Volumetric Flow	sgpm	4.44564	121.102	121.102	114.232	50.9466
API Gravity						
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	2382.55	1176.43	1176.43	1119.76	2196.79

**Remarks**

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	

**Connections**

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

**Stream Composition**

Mass Flow	26 lb/h	27 lb/h	28 lb/h	29 lb/h	30 lb/h
Triethylene Glycol	1.4518	0.166164	0.00109758	1.4961	0.166164
Water	6.23046	0.0146013	0.703909	6.439	0.0146013
Hydrogen Sulfide	2.90055	0.0164671	0.317758	2.99046	0.0164671
Carbon Dioxide	575.722	1.4739	64.854	593.264	1.4739
Nitrogen	1561.41	0.675223	179.203	1608.74	0.675223
Methane	107418	127.534	12247.3	110675	127.534
Ethane	29234.9	146.035	3221.93	30122	146.035
Propane	19200.3	240.842	1971.12	19783.3	240.842
Isobutane	4343.67	100.873	399.536	4475.56	100.873
n-Butane	8878.78	264.751	758.131	9148.63	264.751
Isopentane	3072.57	143.039	210.939	3165.98	143.039
n-Pentane	3550.9	188.056	221.031	3658.95	188.056
i-C6	3386.63	250.923	139.242	3489.74	250.923
i-C7	2311.29	216.406	49.8764	2381.8	216.406
Octane	331.209	35.6317	2.5282	341.351	35.6317
Nonane	29.0157	3.26107	0.0820406	29.9067	3.26107
Benzene	62.4533	4.96107	2.24537	64.6537	4.96107
Toluene	96.2195	9.56987	1.53833	99.7542	9.56987
Ethylbenzene	2.09566	0.227134	0.0147448	2.17112	0.227134
o-Xylene	19.2344	2.10906	0.111541	19.9425	2.10906
n-Hexane	1560.62	127.578	52.2186	1608.18	127.578
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.247175	0.0283095	0.000178722	0.255013	0.0283095
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	26 %	27 %	28 %	29 %	30 %
Triethylene Glycol	0.000112704	0.00304928	7.67809E-07	0.000112724	0.00304928
Water	0.00403185	0.00223358	0.00410474	0.00404414	0.00223358
Hydrogen Sulfide	0.00092191	0.00133156	0.000979481	0.000992833	0.00133156
Carbon Dioxide	0.152508	0.0922942	0.154811	0.152528	0.0922942
Nitrogen	0.649797	0.0664253	0.67203	0.649782	0.0664253
Methane	78.0609	21.9082	80.2011	78.06	21.9082
Ethane	11.3346	13.3841	11.2566	11.3348	13.3841
Propane	5.07621	15.0518	4.69599	5.07637	15.0518
Isobutane	0.871245	4.78282	0.722144	0.871274	4.78282
n-Butane	1.78089	12.553	1.37029	1.781	12.553
Isopentane	0.496477	5.46357	0.307141	0.496511	5.46357
n-Pentane	0.573766	7.18309	0.321835	0.573821	7.18309
i-C6	0.458153	8.02434	0.169745	0.458205	8.02434
i-C7	0.268908	5.95176	0.0522913	0.268954	5.95176
Octane	0.0338029	0.859636	0.00232512	0.0338124	0.859636
Nonane	0.00263745	0.0700708	6.71992E-05	0.00263841	0.0700708
Benzene	0.00932104	0.175029	0.00301982	0.00936538	0.175029
Toluene	0.0121744	0.286231	0.00175396	0.0122501	0.286231
Ethylbenzene	0.000230126	0.00589593	1.45904E-05	0.000231394	0.00589593
o-Xylene	0.00211214	0.0547469	0.000110373	0.00212544	0.0547469
n-Hexane	0.211126	4.07986	0.0636578	0.211154	4.07986
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	1.87847E-05	0.00050858	1.22395E-07	1.88099E-05	0.00050858
Decanes Plus Sat	0	0	0	0	0

\* 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:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	

Mass Fraction	26 %	27 %	28 %	29 %	30 %
Triethylene Glycol	0.000782024	0.00891356	5.62198E-06	0.00078215	0.00891356
Water	0.00335609	0.000783259	0.00360555	0.00336626	0.000783259
Hydrogen Sulfide	0.00156241	0.000883349	0.00162761	0.00156339	0.000883349
Carbon Dioxide	0.310118	0.0790648	0.332194	0.310154	0.0790648
Nitrogen	0.841069	0.0362211	0.917908	0.841035	0.0362211
Methane	57.8619	6.84133	62.733	57.8602	6.84133
Ethane	15.7476	7.83376	16.5033	15.7476	7.83376
Propane	10.3424	12.9195	10.0964	10.3426	12.9195
Isobutane	2.33975	5.41114	2.04649	2.33979	5.41114
n-Butane	4.78263	14.2021	3.88328	4.78284	14.2021
Isopentane	1.65507	7.67304	1.08047	1.65515	7.67304
n-Pentane	1.91272	10.0879	1.13216	1.91287	10.0879
i-C6	1.82424	13.4603	0.713221	1.82441	13.4603
i-C7	1.245	11.6087	0.255476	1.24518	11.6087
Octane	0.178409	1.9114	0.0129499	0.178456	1.9114
Nonane	0.0156295	0.174934	0.000420226	0.015635	0.174934
Benzene	0.033641	0.266127	0.0115012	0.0338005	0.266127
Toluene	0.0518295	0.513358	0.00787961	0.0521508	0.513358
Ethylbenzene	0.00112885	0.0121842	7.55253E-05	0.00113505	0.0121842
o-Xylene	0.0103608	0.113137	0.000571334	0.0104258	0.113137
n-Hexane	0.840644	6.84369	0.267473	0.840743	6.84369
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.000133143	0.00151861	9.15444E-07	0.000133319	0.00151861
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	26	27	28	29	30
Temperature	°F	95	63.3013	63.3013	95	15.6923
Pressure	psig	1281	700	700	1281	55 *
Molecular Weight	lb/lbmol	21.6427	51.3733	20.5095	21.6431	51.3733
Mass Flow	lb/h	185646	1864.17	19522.9	191280	1864.17
Std Vapor Volumetric Flow	MMSCFD	78.123	0.330486	8.66951	80.4926	0.330486
Std Liquid Volumetric Flow	sgpm	1051.2	6.87026	114.232	1083.09	6.87026
API Gravity			122.791			
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	1176.43	2663.11	1119.76	1176.44	2663.11

**Remarks**



**Process Streams Report**  
**All Streams**  
Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan 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**

Mass Flow	31 lb/h	32 lb/h	33 lb/h	34 lb/h	35 lb/h
Triethylene Glycol	0.166164	0.166135	0.00109758	0.010583	0
Water	0.0146013	0.014598	0.703909	0.750143	0
Hydrogen Sulfide	0.0164671	0.0164609	0.317758	0.0246325	0
Carbon Dioxide	1.4739	1.47363	64.854	2.35023	0
Nitrogen	0.675223	0.675014	179.203	0.258251	0
Methane	127.534	127.498	12247.3	58.3575	0
Ethane	146.035	145.996	3221.93	36.0472	0
Propane	240.842	240.764	1971.12	30.3511	0
Isobutane	100.873	100.833	399.536	6.49601	0
n-Butane	264.751	264.641	758.131	17.1004	0
Isopentane	143.039	142.982	210.939	5.29965	0
n-Pentane	188.056	187.986	221.031	7.14755	0
i-C6	250.923	250.871	139.242	5.8276	0
i-C7	216.406	216.436	49.8764	4.09456	0
Octane	35.6317	35.6623	2.5282	0.491456	0
Nonane	3.26107	3.26651	0.0820406	0.0337787	0
Benzene	4.96107	4.95948	2.24537	0.41926	0
Toluene	9.56987	9.57239	1.53833	0.531422	0
Ethylbenzene	0.227134	0.227333	0.0147448	0.00768648	0
o-Xylene	2.10906	2.11111	0.111541	0.0745228	0
n-Hexane	127.578	127.563	52.2186	2.67335	0
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.0283095	0.0283892	0.000178722	0.000238971	0
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	31 %	32 %	33 %	34 %	35 %
Triethylene Glycol	0.00304928	0.00304957	7.67809E-07	0.00110729	
Water	0.00223358	0.00223368	0.00410474	0.654258	
Hydrogen Sulfide	0.00133156	0.00133141	0.000979481	0.0113565	
Carbon Dioxide	0.0922942	0.0923022	0.154811	0.839093	
Nitrogen	0.0664253	0.0664227	0.67203	0.144851	
Methane	21.9082	21.9079	80.2011	57.1573	
Ethane	13.3841	13.3841	11.2566	18.8364	
Propane	15.0518	15.051	4.69599	10.815	
Isobutane	4.78282	4.78223	0.722144	1.75611	
n-Butane	12.553	12.5512	1.37029	4.62284	
Isopentane	5.46357	5.46288	0.307141	1.15415	
n-Pentane	7.18309	7.18235	0.321835	1.55659	
i-C6	8.02434	8.02486	0.169745	1.06256	
i-C7	5.95176	5.9542	0.0522913	0.642062	
Octane	0.859636	0.860607	0.00232512	0.0676014	
Nonane	0.0700708	0.0702067	6.71992E-05	0.00413823	
Benzene	0.175029	0.17502	0.00301982	0.084336	
Toluene	0.286231	0.286384	0.00175396	0.0906244	
Ethylbenzene	0.00589593	0.0059027	1.45904E-05	0.00113761	
o-Xylene	0.0547469	0.0548149	0.000110373	0.0110295	
n-Hexane	4.07986	4.08047	0.0636578	0.487437	
2,2,4-Trimethylpentane	0	0	0	0	
Decanes Plus	0.00050858	0.000510149	1.22395E-07	2.44774E-05	
Decanes Plus Sat	0	0	0	0	

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	

Mass Fraction	31 %	32 %	33 %	34 %	35 %
Triethylene Glycol	0.00891356	0.00891405	5.62198E-06	0.00593391	
Water	0.000783259	0.000783262	0.00360555	0.420609	
Hydrogen Sulfide	0.000883349	0.000883215	0.00162761	0.0138116	
Carbon Dioxide	0.0790648	0.0790684	0.332194	1.31778	
Nitrogen	0.0362211	0.0362182	0.917908	0.144802	
Methane	6.84133	6.84095	62.733	32.7213	
Ethane	7.83376	7.83348	16.5033	20.2118	
Propane	12.9195	12.9183	10.0964	17.018	
Isobutane	5.41114	5.41025	2.04649	3.64234	
n-Butane	14.2021	14.1994	3.88328	9.58824	
Isopentane	7.67304	7.67176	1.08047	2.97153	
n-Pentane	10.0879	10.0865	1.13216	4.00766	
i-C6	13.4603	13.4606	0.713221	3.26756	
i-C7	11.6087	11.613	0.255476	2.29584	
Octane	1.9114	1.91348	0.0129499	0.275561	
Nonane	0.174934	0.175266	0.000420226	0.0189399	
Benzene	0.266127	0.266103	0.0115012	0.235081	
Toluene	0.513358	0.513611	0.00787961	0.297971	
Ethylbenzene	0.0121842	0.0121977	7.55253E-05	0.00430984	
o-Xylene	0.113137	0.113273	0.000571334	0.0417853	
n-Hexane	6.84369	6.84444	0.267473	1.49896	
2,2,4-Trimethylpentane	0	0	0	0	
Decanes Plus	0.00151861	0.00152324	9.15444E-07	0.000133992	
Decanes Plus Sat	0	0	0	0	

**Stream Properties**

Property	Units	31	32	33	34	35
Temperature	°F	15.6923	15.6942	78.4346	159.542	
Pressure	psig	55	55	120 *	55	120
Molecular Weight	lb/lbmol	51.3733	51.3754	20.5095	28.0228	
Mass Flow	lb/h	1864.17	1863.74	19522.9	178.347	0
Std Vapor Volumetric Flow	MMSCFD	0.330486	0.330396	8.66951	0.0579641	0
Std Liquid Volumetric Flow	sgpm	6.87026	6.86857	114.232	0.881668	0
API Gravity						
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	2663.11	2663.21	1119.76	1479.77	

**Remarks**

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan 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-100	SPLT-100

**Stream Composition**

Mass Flow	36 lb/h	37 lb/h	38 lb/h	39 lb/h	40 lb/h
Triethylene Glycol	0	1.59832E-06	0.0105675	0.0105829	4.3997
Water	0	2047.8	0.76173	0.750141	18.8999
Hydrogen Sulfide	0	0.0289578	0.0246502	0.0246324	8.79156
Carbon Dioxide	0	2.33019	2.35222	2.34991	1744.71
Nitrogen	0	0.94783	0.258554	0.258251	4731.56
Methane	0	187.955	58.4094	58.3575	325512
Ethane	0	229.452	36.07	36.0471	88591.8
Propane	0	411.03	30.3648	30.351	58184
Isobutane	0	195.219	6.49847	6.49598	13162.9
n-Butane	0	551.007	17.1066	17.1003	26906.2
Isopentane	0	393.087	5.30137	5.29962	9311.13
n-Pentane	0	580.064	7.14861	7.14752	10760.7
i-C6	0	1284.31	5.82945	5.82757	10263
i-C7	0	2537.76	4.09582	4.09453	7004.38
Octane	0	1916.11	0.491524	0.491452	1003.77
Nonane	0	791.862	0.0337886	0.0337784	87.938
Benzene	0	38.8971	0.419917	0.419257	189.56
Toluene	0	219.894	0.532598	0.531419	292.193
Ethylbenzene	0	17.4022	0.00770349	0.00768642	6.36244
o-Xylene	0	236.701	0.0747522	0.0745223	58.4113
n-Hexane	0	815.465	2.67396	2.67333	4729.42
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0	119.954	0.000239094	0.000238969	0.749364
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	36 %	37 %	38 %	39 %	40 %
Triethylene Glycol		4.30108E-09	0.00110476	0.00110729	0.000112711
Water		45.9359	0.663816	0.654258	0.00403603
Hydrogen Sulfide		0.000343367	0.0113552	0.0113565	0.000992409
Carbon Dioxide		0.0213968	0.839112	0.838982	0.152515
Nitrogen		0.0136732	0.144901	0.144852	0.649792
Methane		4.73463	57.1609	57.1574	78.0606
Ethane		3.08374	18.8327	18.8364	11.3347
Propane		3.76689	10.8109	10.815	5.07626
Isobutane		1.35733	1.75532	1.7561	0.871255
n-Butane		3.83107	4.62073	4.62284	1.78093
Isopentane		2.20173	1.15358	1.15415	0.496488
n-Pentane		3.24901	1.55554	1.55659	0.573785
i-C6		6.02269	1.06202	1.06256	0.45817
i-C7		10.2348	0.64173	0.642059	0.268924
Octane		6.77875	0.0675551	0.0676011	0.0338061
Nonane		2.49505	0.00413602	0.0041382	0.00263778
Benzene		0.201235	0.0843984	0.0843357	0.00933611
Toluene		0.964443	0.09075	0.090624	0.0122002
Ethylbenzene		0.0662411	0.00113918	0.0011376	0.000230557
o-Xylene		0.900998	0.0110543	0.0110294	0.00211666
n-Hexane		3.82408	0.487147	0.487435	0.211135
2,2,4-Trimethylpentane		0	0	0	0
Decanes Plus		0.316004	2.44698E-05	2.44773E-05	1.87933E-05
Decanes Plus Sat		0	0	0	0

**Process Streams Report**  
**All Streams**  
Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	

Mass Fraction	36 %	37 %	38 %	39 %	40 %
Triethylene Glycol		1.2708E-08	0.00592125	0.00593392	0.000782067
Water		16.2818	0.426819	0.420609	0.00335955
Hydrogen Sulfide		0.000230239	0.0138122	0.0138116	0.00156274
Carbon Dioxide		0.018527	1.31802	1.31761	0.31013
Nitrogen		0.00753605	0.144875	0.144803	0.841057
Methane		1.4944	32.7285	32.7214	57.8613
Ethane		1.82434	20.211	20.2119	15.7476
Propane		3.26804	17.0142	17.018	10.3425
Isobutane		1.55216	3.64128	3.64234	2.33977
n-Butane		4.38097	9.58534	9.58825	4.7827
Isopentane		3.12538	2.97051	2.97153	1.6551
n-Pentane		4.612	4.00557	4.00766	1.91277
i-C6		10.2113	3.26641	3.26756	1.8243
i-C7		20.1774	2.29501	2.29583	1.24506
Octane		15.2347	0.275415	0.27556	0.178425
Nonane		6.29597	0.0189327	0.0189398	0.0156314
Benzene		0.309265	0.235292	0.235081	0.0336952
Toluene		1.74834	0.29843	0.29797	0.0519387
Ethylbenzene		0.138362	0.00431648	0.00430983	0.00113095
o-Xylene		1.88198	0.0418858	0.0417852	0.0103829
n-Hexane		6.48364	1.4983	1.49896	0.840677
2,2,4-Trimethylpentane		0	0	0	0
Decanes Plus		0.953733	0.000133971	0.000133991	0.000133203
Decanes Plus Sat		0	0	0	0

**Stream Properties**

Property	Units	36	37	38	39	40
Temperature	°F		115.749	159.54	159.542	93.2685
Pressure	psig	0.25 *	158	55	55	1281
Molecular Weight	lb/lbmol		50.8266	28.0185	28.0228	21.6429
Mass Flow	lb/h	0	12577.3	178.467	178.346	562573
Std Vapor Volumetric Flow	MMSCFD	0	2.25372	0.0580119	0.0579639	236.739
Std Liquid Volumetric Flow	sgpm	0	36.7987	0.88228	0.881666	3185.5
API Gravity						
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>		2163.33	1479.46	1479.77	1176.43

**Remarks**

**Process Streams Report**  
**All Streams**  
Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	

**Connections**

	41	43	44	45	46
From Block	RCYL-4	MIX-100	RCYL-6	RCYL-7	BTEX LIQUIDS 1
To Block	MIX-100	SPLT-105	MIX-100	MIX-107	MIX-107

**Stream Composition**

Mass Flow	41 lb/h	43 lb/h	44 lb/h	45 lb/h	46 lb/h
Triethylene Glycol	0.0105829	0.0317333	0.0105674	1.59832E-06	0.229918
Water	0.750141	2.26201	0.761728	2047.8	143.356
Hydrogen Sulfide	0.0246324	0.0739149	0.0246501	0.0289578	0.00235285
Carbon Dioxide	2.34991	7.05174	2.35191	2.33019	0.0143648
Nitrogen	0.258251	0.775055	0.258553	0.94783	2.87685E-06
Methane	58.3575	175.124	58.4093	187.955	0.00995652
Ethane	36.0471	108.164	36.0699	229.452	0.138523
Propane	30.351	91.0667	30.3647	411.03	0.717864
Isobutane	6.49598	19.4904	6.49845	195.219	0.50586
n-Butane	17.1003	51.3071	17.1066	551.007	2.67083
Isopentane	5.29962	15.9006	5.30134	393.087	2.29175
n-Pentane	7.14752	21.4436	7.14858	580.064	4.25124
i-C6	5.82757	17.4846	5.82942	1284.31	7.74352
i-C7	4.09453	12.2849	4.09579	2537.76	10.0507
Octane	0.491452	1.47442	0.49152	1916.11	2.82647
Nonane	0.0337784	0.101345	0.0337883	791.862	0.340663
Benzene	0.419257	1.25843	0.419914	38.8971	9.02164
Toluene	0.531419	1.59543	0.532595	219.894	21.9909
Ethylbenzene	0.00768642	0.0230763	0.00770344	17.4022	0.491796
o-Xylene	0.0745223	0.223796	0.0747516	236.701	6.01959
n-Hexane	2.67333	8.02061	2.67395	815.465	4.76646
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.000238969	0.000717029	0.000239091	119.954	0.01278
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	41 %	43 %	44 %	45 %	46 %
Triethylene Glycol	0.00110729	0.00110645	0.00110476	4.30108E-09	0.0173689
Water	0.654258	0.657446	0.663816	45.9359	90.275
Hydrogen Sulfide	0.0113565	0.0113561	0.0113552	0.000343367	0.000783204
Carbon Dioxide	0.838982	0.838989	0.839002	0.0213968	0.00370291
Nitrogen	0.144852	0.144868	0.144902	0.0136732	1.16504E-06
Methane	57.1574	57.1586	57.1611	4.73463	0.0070409
Ethane	18.8364	18.8352	18.8328	3.08374	0.0522629
Propane	10.815	10.8136	10.8109	3.76689	0.184688
Isobutane	1.7561	1.75584	1.75532	1.35733	0.0987369
n-Butane	4.62284	4.62213	4.62072	3.83107	0.52131
Isopentane	1.15415	1.15396	1.15357	2.20173	0.360354
n-Pentane	1.55659	1.55624	1.55553	3.24901	0.668464
i-C6	1.06256	1.06238	1.06202	6.02269	1.01941
i-C7	0.642059	0.641949	0.641728	10.2348	1.13792
Octane	0.0676011	0.0675856	0.0675547	6.77875	0.280713
Nonane	0.0041382	0.00413746	0.00413599	2.49505	0.0301329
Benzene	0.0843357	0.0843565	0.0843981	0.201235	1.31027
Toluene	0.090624	0.0906659	0.0907496	0.964443	2.70766
Ethylbenzene	0.0011376	0.00113813	0.00113918	0.0662411	0.0525527
o-Xylene	0.0110294	0.0110377	0.0110542	0.900998	0.643246
n-Hexane	0.487435	0.487339	0.487145	3.82408	0.627486
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	2.44773E-05	2.44747E-05	2.44696E-05	0.316004	0.000945139
Decanes Plus Sat	0	0	0	0	0

\* 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:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	

Mass Fraction	41 %	43 %	44 %	45 %	46 %
Triethylene Glycol	0.00593392	0.0059297	0.00592127	1.2708E-08	0.105732
Water	0.420609	0.42268	0.42682	16.2818	65.925
Hydrogen Sulfide	0.0138116	0.0138118	0.0138122	0.000230239	0.001082
Carbon Dioxide	1.31761	1.31769	1.31785	0.018527	0.0066059
Nitrogen	0.144803	0.144827	0.144875	0.00753605	1.32297E-06
Methane	32.7214	32.7238	32.7286	1.4944	0.00457869
Ethane	20.2119	20.2116	20.2111	1.82434	0.0637023
Propane	17.018	17.0168	17.0143	3.26804	0.330123
Isobutane	3.64234	3.64199	3.64128	1.55216	0.232629
n-Butane	9.58825	9.58728	9.58534	4.38097	1.22823
Isopentane	2.97153	2.97119	2.97051	3.12538	1.0539
n-Pentane	4.00766	4.00696	4.00557	4.612	1.95501
i-C6	3.26756	3.26717	3.26641	10.2113	3.561
i-C7	2.29583	2.29555	2.295	20.1774	4.62199
Octane	0.27556	0.275511	0.275414	15.2347	1.29981
Nonane	0.0189398	0.0189374	0.0189326	6.29597	0.15666
Benzene	0.235081	0.235151	0.235291	0.309265	4.14877
Toluene	0.29797	0.298123	0.298429	1.74834	10.1129
Ethylbenzene	0.00430983	0.00431205	0.00431647	0.138362	0.226161
o-Xylene	0.0417852	0.0418187	0.0418857	1.88198	2.76822
n-Hexane	1.49896	1.49874	1.4983	6.48364	2.19194
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.000133991	0.000133984	0.00013397	0.953733	0.0058771
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	41	43	44	45	46
Temperature	°F	159.542	159.541	159.54	115.749	84.4694
Pressure	psig	55	55	55	158	16
Molecular Weight	lb/lbmol	28.0228	28.0213	28.0185	50.8266	24.6694
Mass Flow	lb/h	178.346	535.159	178.466	12577.3	217.454
Std Vapor Volumetric Flow	MMSCFD	0.0579639	0.17394	0.0580117	2.25372	0.0802811
Std Liquid Volumetric Flow	sgpm	0.881666	2.64561	0.882277	36.7987	0.484237
API Gravity						25.5291
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	1479.77	1479.67	1479.46	2163.33	408.058

**Remarks**

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	

**Connections**

	47	48	49	50	51
From Block	BTEX LIQUIDS 2	BTEX LIQUIDS 3	MIX-107	RCYL-8	SPLT-103
To Block	MIX-107	MIX-107	RCYL-8	MIX-106	SAT-1

**Stream Composition**

Mass Flow	47 lb/h	48 lb/h	49 lb/h	50 lb/h	51 lb/h
Triethylene Glycol	0.229918	0.233256	0.693094	0.693093	0
Water	143.356	147.707	2680.07	2680.06	0
Hydrogen Sulfide	0.00235285	0.00237415	0.0395909	0.0395869	8.98076
Carbon Dioxide	0.0143648	0.014509	2.65842	2.65795	1751.16
Nitrogen	2.87685E-06	2.89319E-06	1.06084	1.06084	4731.8
Methane	0.00995652	0.00999798	210.686	210.685	325712
Ethane	0.138523	0.138874	258.579	258.576	89092.8
Propane	0.717864	0.719097	465.759	465.755	59260.8
Isobutane	0.50586	0.506563	222.305	222.303	13707.8
n-Butane	2.67083	2.67441	631.917	631.912	28487.7
Isopentane	2.29175	2.29348	452.292	452.288	10437.7
n-Pentane	4.25124	4.25253	670.348	670.342	12433.9
i-C6	7.74352	7.74343	1479.37	1479.35	13897.5
i-C7	10.0507	10.045	2896.15	2896.11	13862.4
Octane	2.82647	2.82352	2137.9	2137.85	6260.95
Nonane	0.340663	0.340294	866.931	866.901	2906.53
Benzene	9.02164	9.04272	71.0904	71.0884	329.336
Toluene	21.9909	22.0798	313.077	313.075	946.907
Ethylbenzene	0.491796	0.495047	20.7751	20.7753	55.9517
o-Xylene	6.01959	6.07964	279.606	279.612	755.348
n-Hexane	4.76646	4.76451	938.808	938.798	7016.87
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.01278	0.0128255	129.144	129.079	1374.38
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	47 %	48 %	49 %	50 %	51 %
Triethylene Glycol	0.0173689	0.0171476	0.00152905	0.00152906	0
Water	90.275	90.5152	49.2863	49.2865	0
Hydrogen Sulfide	0.000783204	0.00076906	0.000384862	0.000384827	0.00099999
Carbon Dioxide	0.00370291	0.00363959	0.0200124	0.020009	0.150998
Nitrogen	1.16504E-06	1.14018E-06	0.012546	0.0125461	0.640994
Methane	0.0070409	0.00688024	4.35097	4.35099	77.0472
Ethane	0.0522629	0.0509874	2.84901	2.84901	11.2439
Propane	0.184688	0.180034	3.49935	3.49935	5.09995
Isobutane	0.0987369	0.0962174	1.26715	1.26715	0.894991
n-Butane	0.52131	0.507983	3.60196	3.60197	1.85998
Isopentane	0.360354	0.350936	2.07688	2.07688	0.548995
n-Pentane	0.668464	0.6507	3.07817	3.07817	0.653993
i-C6	1.01941	0.992002	5.68741	5.68741	0.611994
i-C7	1.13792	1.10671	9.5756	9.57556	0.524995
Octane	0.280713	0.272884	6.2006	6.20052	0.207998
Nonane	0.0301329	0.0292915	2.2394	2.23934	0.0859991
Benzene	1.31027	1.27804	0.301519	0.301514	0.0159998
Toluene	2.70766	2.64556	1.12572	1.12573	0.0389996
Ethylbenzene	0.0525527	0.0514787	0.064831	0.0648324	0.00199998
o-Xylene	0.643246	0.632206	0.872542	0.87257	0.0269997
n-Hexane	0.627486	0.610376	3.60923	3.60923	0.308997
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.000945139	0.000923019	0.278914	0.278777	0.0339997
Decanes Plus Sat	0	0	0	0	0

\* 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:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	

Mass Fraction	47 %	48 %	49 %	50 %	51 %
Triethylene Glycol	0.105732	0.10508	0.00470556	0.00470564	0
Water	65.925	66.541	18.1956	18.1958	0
Hydrogen Sulfide	0.001082	0.00106954	0.000268791	0.000268768	0.00151438
Carbon Dioxide	0.0066059	0.0065362	0.0180486	0.0180457	0.295289
Nitrogen	1.32297E-06	1.30336E-06	0.00720225	0.00720235	0.7979
Methane	0.00457869	0.00450403	1.43039	1.43041	54.9233
Ethane	0.0637023	0.0625617	1.75554	1.75556	15.0233
Propane	0.330123	0.323949	3.16214	3.16216	9.99287
Isobutane	0.232629	0.228203	1.50927	1.50929	2.31148
n-Butane	1.22823	1.20481	4.29022	4.29025	4.80374
Isopentane	1.0539	1.0332	3.07071	3.07073	1.76005
n-Pentane	1.95501	1.91574	4.55113	4.55117	2.09668
i-C6	3.561	3.48837	10.0437	10.0438	2.34347
i-C7	4.62199	4.5252	19.6626	19.6626	2.33754
Octane	1.29981	1.27198	14.5146	14.5146	1.05575
Nonane	0.15666	0.1533	5.88578	5.88567	0.490115
Benzene	4.14877	4.07369	0.482648	0.482642	0.0555343
Toluene	10.1129	9.94683	2.12555	2.12557	0.159672
Ethylbenzene	0.226161	0.223016	0.141047	0.14105	0.00943487
o-Xylene	2.76822	2.73884	1.8983	1.89838	0.127371
n-Hexane	2.19194	2.14638	6.37377	6.3738	1.18322
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.0058771	0.0057778	0.876786	0.876362	0.231755
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	47	48	49	50	51
Temperature	°F	77.2136	77.0379	92.5284	92.5281	100
Pressure	psig	16	16	16	16	48
Molecular Weight	lb/lbmol	24.6694	24.5061	48.798	48.7977	22.5046
Mass Flow	lb/h	217.454	221.979	14729.3	14729	593031
Std Vapor Volumetric Flow	MMSCFD	0.0802811	0.0824978	2.74906	2.74903	240
Std Liquid Volumetric Flow	sgpm	0.484237	0.493334	42.7061	42.7054	3277.73
API Gravity		25.4919	25.1905			
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	408.058	397.981	2027.95	2027.93	1219.09

**Remarks**



<b>Process Streams Report</b>	
<b>All Streams</b>	
Tabulated by Total Phase	

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	

Connections					
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	52	53	54	55	56
From Block	SPLT-105	SPLT-105	SPLT-101	HP Separator	RCYL-9
To Block	MIX-101	XFS2	HP Separator	RCYL-9	MIX-101

Stream Composition					
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	52 lb/h	53 lb/h	54 lb/h	55 lb/h	56 lb/h
<b>Mass Flow</b>					
Triethylene Glycol	0.0317333	0.0317333	3.64094E-13	3.57638E-20	0
Water	2.26201	2.26201	1782.61	2.13379	2.13541
Hydrogen Sulfide	0.0739149	0.0739149	0.0889862	0.0198097	0.0198263
Carbon Dioxide	7.05174	7.05174	8.32573	3.36313	3.36558
Nitrogen	0.775055	0.775055	4.78081	3.89192	3.89547
Methane	175.124	175.124	782.57	473.841	474.265
Ethane	108.164	108.164	745.325	189.181	189.357
Propane	91.0667	91.0667	1124.57	125.271	125.396
Isobutane	19.4904	19.4904	470.207	26.5495	26.577
n-Butane	51.3071	51.3071	1268.07	52.7932	52.8481
Isopentane	15.9006	15.9006	767.709	16.5192	16.5358
n-Pentane	21.4436	21.4436	1086.89	18.7337	18.7521
i-C6	17.4846	17.4846	2018.24	16.2537	16.2679
i-C7	12.2849	12.2849	2967.92	9.80952	9.81611
Octane	1.47442	1.47442	1218.52	1.22048	1.22083
Nonane	0.101345	0.101345	261.832	0.0987335	0.0987229
Benzene	1.25843	1.25843	55.4877	0.350229	0.350543
Toluene	1.59543	1.59543	218.503	0.505417	0.505731
Ethylbenzene	0.0230763	0.0230763	10.5422	0.00981279	0.00981587
o-Xylene	0.223796	0.223796	125.016	0.0946456	0.0946694
n-Hexane	8.02061	8.02061	1183.13	7.17716	7.18303
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.000717029	0.000717029	9.71392	0.000848511	0.000846369
Decanes Plus Sat	0	0	0	0	0

	52 %	53 %	54 %	55 %	56 %
<b>Mole Fraction</b>					
Triethylene Glycol	0.00110645	0.00110645	7.17527E-16	5.77343E-22	0
Water	0.657446	0.657446	29.2842	0.28714	0.287096
Hydrogen Sulfide	0.0113561	0.0113561	0.000772731	0.00140913	0.00140902
Carbon Dioxide	0.838989	0.838989	0.0559877	0.185259	0.185225
Nitrogen	0.144868	0.144868	0.0505071	0.336806	0.336807
Methane	57.1586	57.1586	14.4367	71.605	71.6039
Ethane	18.8352	18.8352	7.33573	15.2525	15.2527
Propane	10.8136	10.8136	7.54759	6.88713	6.8877
Isobutane	1.75584	1.75584	2.39422	1.10738	1.10752
n-Butane	4.62213	4.62213	6.45682	2.20201	2.20229
Isopentane	1.15396	1.15396	3.14909	0.555062	0.555115
n-Pentane	1.55624	1.55624	4.45835	0.629471	0.629517
i-C6	1.06238	1.06238	6.93117	0.457247	0.457231
i-C7	0.641949	0.641949	8.76582	0.23733	0.237274
Octane	0.0675856	0.0675856	3.15699	0.0259022	0.0258861
Nonane	0.00413746	0.00413746	0.604178	0.00186626	0.00186436
Benzene	0.0843565	0.0843565	0.210231	0.0108697	0.0108695
Toluene	0.0906659	0.0906659	0.701832	0.0132981	0.0132943
Ethylbenzene	0.00113813	0.00113813	0.0293877	0.000224075	0.000223941
o-Xylene	0.0110377	0.0110377	0.348498	0.00216123	0.00215981
n-Hexane	0.487339	0.487339	4.06317	0.201907	0.201888
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	2.44747E-05	2.44747E-05	0.0187407	1.34096E-05	1.33635E-05
Decanes Plus Sat	0	0	0	0	0

\* User Specified Values  
 ? Extrapolated or Approximate Values

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	

Mass Fraction	52 %	53 %	54 %	55 %	56 %
Triethylene Glycol	0.0059297	0.0059297	2.26004E-15	3.77328E-21	0
Water	0.42268	0.42268	11.0652	0.225127	0.225089
Hydrogen Sulfide	0.0138118	0.0138118	0.000552364	0.00209004	0.00208985
Carbon Dioxide	1.31769	1.31769	0.0516804	0.354829	0.354759
Nitrogen	0.144827	0.144827	0.0296759	0.410618	0.410614
Methane	32.7238	32.7238	4.85765	49.9928	49.9913
Ethane	20.2116	20.2116	4.62646	19.9597	19.9597
Propane	17.0168	17.0168	6.98056	13.2168	13.2177
Isobutane	3.64199	3.64199	2.91872	2.80112	2.80143
n-Butane	9.58728	9.58728	7.8713	5.56998	5.57062
Isopentane	2.97119	2.97119	4.76541	1.74286	1.743
n-Pentane	4.00696	4.00696	6.74667	1.9765	1.97662
i-C6	3.26717	3.26717	12.5278	1.71485	1.71477
i-C7	2.29555	2.29555	18.4228	1.03496	1.0347
Octane	0.275511	0.275511	7.5637	0.128767	0.128685
Nonane	0.0189374	0.0189374	1.62527	0.0104169	0.0104062
Benzene	0.235151	0.235151	0.344429	0.036951	0.03695
Toluene	0.298123	0.298123	1.35631	0.0533242	0.0533081
Ethylbenzene	0.00431205	0.00431205	0.0654384	0.0010353	0.00103467
o-Xylene	0.0418187	0.0418187	0.776012	0.00998563	0.00997891
n-Hexane	1.49874	1.49874	7.34403	0.75723	0.757149
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.000133984	0.000133984	0.0602972	8.95225E-05	8.92141E-05
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	52	53	54	55	56
Temperature	°F	159.541	159.541	104.468	104.468	104.463
Pressure	psig	55	55	400	400	400
Molecular Weight	lb/lbmol	28.0213	28.0213	47.6775	22.9777	22.9781
Mass Flow	lb/h	535.159	535.159	16110.1	947.818	948.695
Std Vapor Volumetric Flow	MMSCFD	0.17394	0.17394	3.07743	0.375684	0.376026
Std Liquid Volumetric Flow	sgpm	2.64561	2.64561	52.8443	5.22913	5.23392
API Gravity						
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	1479.67	1479.67	2178.85	1244.62	1244.64

**Remarks**

<b>Process Streams Report</b> <b>All Streams</b> Tabulated by Total Phase		
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Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	

Connections					
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	60				
From Block	Low Pressure Separator				
To Block	SPLT-102				

Stream Composition					
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	60 lb/h				
<b>Mass Flow</b>					
Triethylene Glycol	1.22979E-08				
Water	11.6962				
Hydrogen Sulfide	0.029832				
Carbon Dioxide	2.53826				
Nitrogen	1.11928				
Methane	216.914				
Ethane	214.175				
Propane	243.07				
Isobutane	66.0947				
n-Butane	141.469				
Isopentane	48.8422				
n-Pentane	56.7021				
i-C6	54.991				
i-C7	40.0174				
Octane	8.71489				
Nonane	1.74077				
Benzene	1.72374				
Toluene	2.7209				
Ethylbenzene	0.0780583				
o-Xylene	0.889378				
n-Hexane	25.2349				
2,2,4-Trimethylpentane	0				
Decanes Plus	0.147899				
Decanes Plus Sat	0				

	60 %				
<b>Mole Fraction</b>					
Triethylene Glycol	2.45037E-10				
Water	1.94266				
Hydrogen Sulfide	0.00261918				
Carbon Dioxide	0.172577				
Nitrogen	0.119555				
Methane	40.4586				
Ethane	21.3129				
Propane	16.4941				
Isobutane	3.40265				
n-Butane	7.28305				
Isopentane	2.02563				
n-Pentane	2.3516				
i-C6	1.90942				
i-C7	1.195				
Octane	0.228287				
Nonane	0.0406124				
Benzene	0.0660311				
Toluene	0.0883618				
Ethylbenzene	0.00220004				
o-Xylene	0.0250668				
n-Hexane	0.876216				
2,2,4-Trimethylpentane	0				
Decanes Plus	0.00288492				
Decanes Plus Sat	0				

\* User Specified Values  
 ? Extrapolated or Approximate Values

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Inlet	

Mass Fraction	60 %			
Triethylene Glycol	1.0798E-09			
Water	1.02696			
Hydrogen Sulfide	0.00261935			
Carbon Dioxide	0.222868			
Nitrogen	0.0982766			
Methane	19.0458			
Ethane	18.8053			
Propane	21.3423			
Isobutane	5.80333			
n-Butane	12.4215			
Isopentane	4.2885			
n-Pentane	4.97863			
i-C6	4.82839			
i-C7	3.51366			
Octane	0.765195			
Nonane	0.152845			
Benzene	0.15135			
Toluene	0.238904			
Ethylbenzene	0.00685378			
o-Xylene	0.0780903			
n-Hexane	2.2157			
2,2,4-Trimethylpentane	0			
Decanes Plus	0.012986			
Decanes Plus Sat	0			

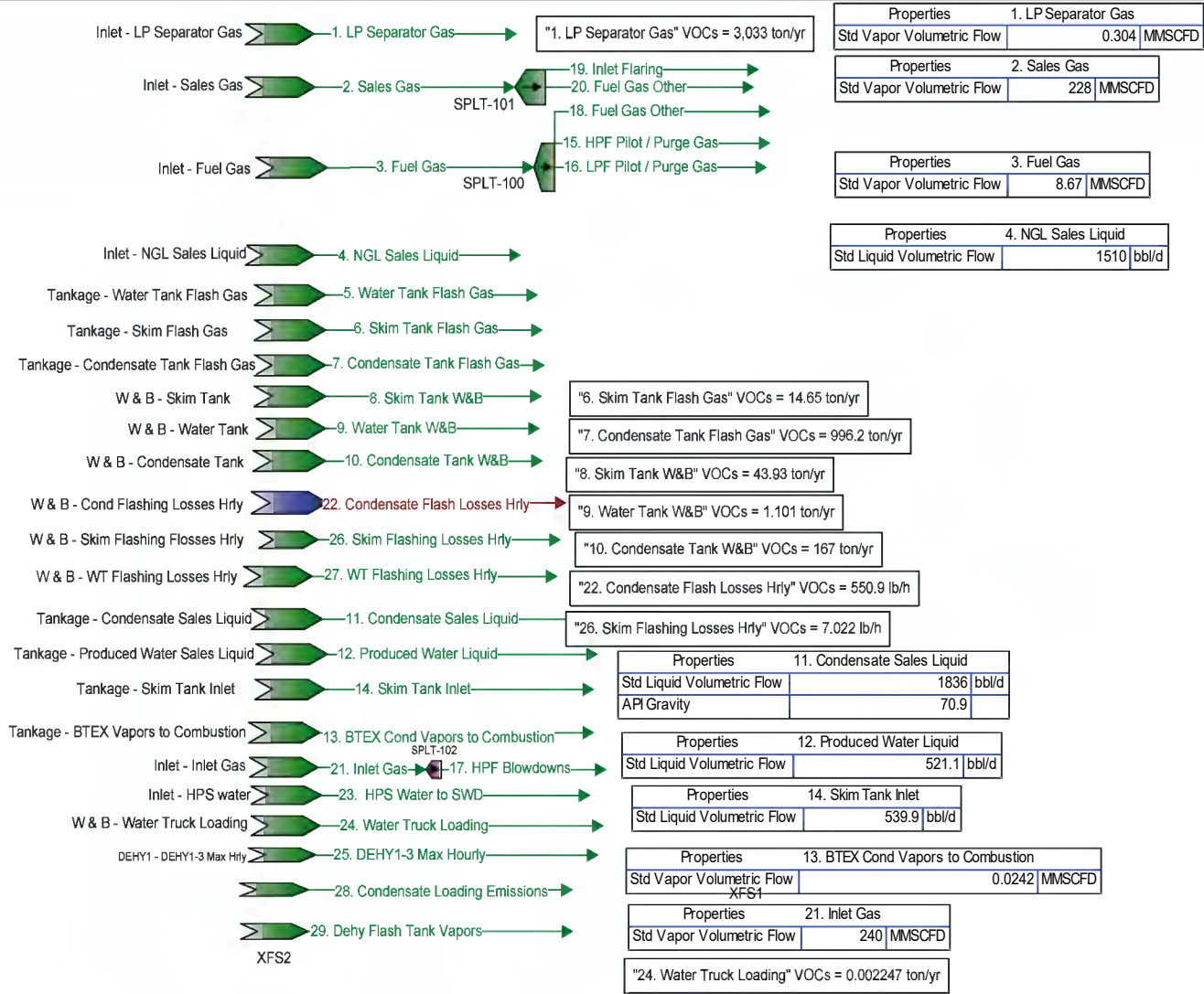
**Stream Properties**

Property	Units	60		
Temperature	°F	83 *		
Pressure	psig	16		
Molecular Weight	lb/lbmol	34.0787		
Mass Flow	lb/h	1138.91		
Std Vapor Volumetric Flow	MMSCFD	0.304377		
Std Liquid Volumetric Flow	sgpm	5.09538		
API Gravity				
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	1784.74		

**Remarks**

## Output Plant Schematic

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Output	



\* User Specified Values  
? Extrapolated or Approximate Values

## Process Streams Report All Streams Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Output	

### Connections

	1. LP Separator Gas	2. Sales Gas	3. Fuel Gas	4. NGL Sales Liquid	5. Water Tank Flash Gas
From Block	Inlet - LP Separator Gas	Inlet - Sales Gas	Inlet - Fuel Gas	Inlet - NGL Sales Liquid	Tankage - Water Tank Flash Gas
To Block	--	SPLT-101	SPLT-100	--	--

### Stream Composition

	1. LP Separator Gas lb/h	2. Sales Gas lb/h	3. Fuel Gas lb/h	4. NGL Sales Liquid lb/h	5. Water Tank Flash Gas lb/h
<b>Mass Flow</b>					
Triethylene Glycol	1.22979E-08	4.23244	0.00109758	3.97916E-16	4.96717E-12
Water	11.6962	18.1814	0.703909	3.37229	0.0020019
Hydrogen Sulfide	0.029832	8.45733	0.317758	0.0679552	3.09179E-06
Carbon Dioxide	2.53826	1678.38	64.854	4.89025	0.000207183
Nitrogen	1.11928	4551.68	179.203	0.886183	6.18512E-06
Methane	216.914	313137	12247.3	308.115	0.00329957
Ethane	214.175	85223.8	3221.93	555.869	0.00965401
Propane	243.07	55972.1	1971.12	999.189	0.0168575
Isobutane	66.0947	12662.5	399.536	443.645	0.00557622
n-Butane	141.469	25883.3	758.131	1215.24	0.0122013
Isopentane	48.8422	8957.15	210.939	751.184	0.00437871
n-Pentane	56.7021	10351.7	221.031	1068.15	0.00341129
i-C6	54.991	9872.84	139.242	2001.98	0.00396962
i-C7	40.0174	6738.09	49.8764	2958.11	0.00263151
Octane	8.71489	965.61	2.5282	1217.3	0.00020204
Nonane	1.74077	84.5949	0.0820406	261.733	4.05838E-05
Benzene	1.72374	182.354	2.24537	55.1145	0.000235854
Toluene	2.7209	281.085	1.53833	217.975	0.000364757
Ethylbenzene	0.0780583	6.12056	0.0147448	10.5321	1.10327E-05
o-Xylene	0.889378	56.1907	0.111541	124.917	0.000123997
n-Hexane	25.2349	4549.63	52.2186	1175.95	0.00130264
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.147899	0.720875	0.000178722	9.71307	2.10851E-05
Decanes Plus Sat	0	0	0	0	0

	1. LP Separator Gas %	2. Sales Gas %	3. Fuel Gas %	4. NGL Sales Liquid %	5. Water Tank Flash Gas %
<b>Mole Fraction</b>					
Triethylene Glycol	2.45037E-10	0.000112711	7.67809E-07	1.33859E-18	2.15211E-09
Water	1.94266	0.00403603	0.00410474	0.0945652	7.23016
Hydrogen Sulfide	0.00261918	0.000992409	0.000979481	0.0010073	0.00590264
Carbon Dioxide	0.172577	0.152515	0.154811	0.0561347	0.306305
Nitrogen	0.119555	0.649792	0.67203	0.015981	0.0143658
Methane	40.4586	78.0606	80.2011	9.70261	13.3824
Ethane	21.3129	11.3347	11.2566	9.33899	20.8899
Propane	16.4941	5.07626	4.69599	11.4472	24.8739
Isobutane	3.40265	0.871255	0.722144	3.85603	6.2423
n-Butane	7.28305	1.78093	1.37029	10.5625	13.6588
Isopentane	2.02563	0.496488	0.307141	5.25974	3.94879
n-Pentane	2.3516	0.573785	0.321835	7.47915	3.07636
i-C6	1.90942	0.45817	0.169745	11.7361	2.99718
i-C7	1.195	0.268924	0.0522913	14.9137	1.70874
Octane	0.228287	0.0338061	0.00232512	5.38355	0.115082
Nonane	0.0406124	0.00263778	6.71992E-05	1.03093	0.0205885
Benzene	0.0660311	0.00933611	0.00301982	0.356448	0.19646
Toluene	0.0883618	0.0122002	0.00175396	1.19513	0.257579
Ethylbenzene	0.00220004	0.000230557	1.45904E-05	0.0501163	0.00676159
o-Xylene	0.0250668	0.00211666	0.000110373	0.594411	0.0759933
n-Hexane	0.876216	0.211135	0.0636578	6.8937	0.983534
2,2,4-Trimethylpentane	0	0	0	0	0

\* User Specified Values  
? Extrapolated or Approximate Values

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Output	

	1. LP Separator Gas %	2. Sales Gas %	3. Fuel Gas %	4. NGL Sales Liquid %	5. Water Tank Flash Gas %
<b>Mole Fraction</b>					
Decanes Plus	0.00288492	1.87933E-05	1.22395E-07	0.0319873	0.00894328
Decanes Plus Sat	0	0	0	0	0

	1. LP Separator Gas %	2. Sales Gas %	3. Fuel Gas %	4. NGL Sales Liquid %	5. Water Tank Flash Gas %
<b>Mass Fraction</b>					
Triethylene Glycol	1.0798E-09	0.000782067	5.62198E-06	2.97308E-18	7.46942E-09
Water	1.02696	0.00335955	0.00360555	0.0251966	3.01037
Hydrogen Sulfide	0.00261935	0.00156274	0.00162761	0.000507737	0.0046493
Carbon Dioxide	0.222868	0.31013	0.332194	0.0365382	0.311553
Nitrogen	0.0982766	0.841057	0.917908	0.00662124	0.00930093
Methane	19.0458	57.8613	62.733	2.30212	4.96175
Ethane	18.8053	15.7476	16.5033	4.15325	14.5173
Propane	21.3423	10.3425	10.0964	7.46559	25.3496
Isobutane	5.80333	2.33977	2.04649	3.31476	8.38528
n-Butane	12.4215	4.7827	3.88328	9.07984	18.3478
Isopentane	4.2885	1.6551	1.08047	5.61258	6.58452
n-Pentane	4.97863	1.91277	1.13216	7.98087	5.12976
i-C6	4.82839	1.8243	0.713221	14.9581	5.96934
i-C7	3.51366	1.24506	0.255476	22.1019	3.95716
Octane	0.765195	0.178425	0.0129499	9.0952	0.303819
Nonane	0.152845	0.0156314	0.000420226	1.95558	0.0610282
Benzene	0.15135	0.0336952	0.0115012	0.411796	0.354667
Toluene	0.238904	0.0519387	0.00787961	1.62863	0.548506
Ethylbenzene	0.00685378	0.00113095	7.55253E-05	0.0786918	0.0165905
o-Xylene	0.0780903	0.0103829	0.000571334	0.933335	0.186461
n-Hexane	2.2157	0.840677	0.267473	8.78628	1.95886
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.012986	0.000133203	9.15444E-07	0.0725726	0.0317068
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	1. LP Separator Gas	2. Sales Gas	3. Fuel Gas	4. NGL Sales Liquid	5. Water Tank Flash Gas
Temperature	°F	83	93.2685	78.4346	104.468	100
Pressure	psig	16	1281	120	400	0.25
Molecular Weight	lb/lbmol	34.0787	21.6429	20.5095	67.6131	43.2683
Mass Flow	lb/h	1138.91	541186	19522.9	13383.9	0.0665001
Std Vapor Volumetric Flow	MMSCFD	0.304377	227.739	8.66951	1.80284	1.39977E-05
Std Liquid Volumetric Flow	sgpm	5.09538	3064.4	114.232	44.056	0.000259607
API Gravity					94.2821	
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	1784.74	1176.43	1119.76	3459.59	2186.58

Remarks

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Output	

**Connections**

	6. Skim Tank Flash Gas	7. Condensate Tank Flash Gas	8. Skim Tank W&B	9. Water Tank W&B	10. Condensate Tank W&B
From Block	Tankage - Skim Flash Gas	Tankage - Condensate Tank Flash Gas	W & B - Skim Tank	W & B - Water Tank	W & B - Condensate Tank
To Block	--	--	--	--	--

**Stream Composition**

	6. Skim Tank Flash Gas	7. Condensate Tank Flash Gas	8. Skim Tank W&B	9. Water Tank W&B	10. Condensate Tank W&B
Mass Flow	lb/h	Gas lb/h	lb/h	lb/h	lb/h
Triethylene Glycol	5.30911E-11	4.10867E-09	1.48553E-10	1.34291E-10	4.48083E-13
Water	0.0630678	1.55884	0.213633	0.200926	0.00013176
Hydrogen Sulfide	0.000149152	0.00619247	0.00051495	0.000516711	0.000799283
Carbon Dioxide	0.0100756	0.281138	0.0197378	0.0129385	0.0372506
Nitrogen	0.000456711	0.0167436	2.53968E-05	1.44943E-05	0.000113698
Methane	0.207603	10.6444	0.0306119	0.013513	0.359939
Ethane	0.536155	39.2077	0.318916	0.0508582	7.55616
Propane	0.977101	70.267	1.86064	0.0649821	12.6855
Isobutane	0.321983	22.0382	1.08603	0.0145103	3.66533
n-Butane	0.722971	48.6933	2.47365	0.0439748	8.12732
Isopentane	0.264479	17.4227	0.921101	0.0111485	2.78292
n-Pentane	0.309524	20.309	1.07962	0.00540084	3.20249
i-C6	0.304037	19.7903	1.0629	0.00712792	3.226
i-C7	0.219788	14.261	0.76305	0.00337612	2.2127
Octane	0.0468776	3.03921	0.160248	0.00017121	0.427106
Nonane	0.00925025	0.599107	0.0312695	3.24935E-05	0.0716235
Benzene	0.00948652	0.618356	0.033083	0.0316162	0.0659982
Toluene	0.0148872	0.966437	0.0515155	0.0497139	0.102683
Ethylbenzene	0.000420647	0.0272918	0.00143901	0.00138328	0.0030196
o-Xylene	0.0047802	0.310144	0.016322	0.0157628	0.0307698
n-Hexane	0.139255	9.04973	0.485215	0.00163448	1.52406
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.000764393	0.0495751	0.00253756	0.000540429	0.00532095
Decanes Plus Sat	0	0	0	0	0

	6. Skim Tank Flash Gas	7. Condensate Tank Flash Gas	8. Skim Tank W&B	9. Water Tank W&B	10. Condensate Tank W&B
Mole Fraction	%	Gas %	%	%	%
Triethylene Glycol	3.89473E-10	4.61786E-10	5.36447E-10	4.98126E-09	3.20162E-13
Water	3.85668	1.46046	6.43079	62.1265	0.000784774
Hydrogen Sulfide	0.00482133	0.00306679	0.0081939	0.0844538	0.00251648
Carbon Dioxide	0.252216	0.107821	0.243214	1.63764	0.0908218
Nitrogen	0.0179607	0.0100882	0.000491643	0.00288214	0.000435503
Methane	14.2564	11.1991	1.0348	4.69204	2.40747
Ethane	19.6435	22.0081	5.75166	9.42158	26.964
Propane	24.4113	26.896	22.8825	8.20882	30.8684
Isobutane	6.10293	6.39977	10.133	1.39064	6.76666
n-Butane	13.7033	14.1403	23.0798	4.21448	15.0041
Isopentane	4.0384	4.07583	6.92333	0.860732	4.13881
n-Pentane	4.72621	4.75105	8.11482	0.416979	4.76279
i-C6	3.88679	3.87614	6.68876	0.460747	4.01684
i-C7	2.41644	2.40218	4.12965	0.187683	2.36947
Octane	0.452104	0.449073	0.76077	0.00834904	0.401204
Nonane	0.0794559	0.0788425	0.132216	0.00141125	0.0599217
Benzene	0.133794	0.133614	0.229681	2.25463	0.0906605
Toluene	0.178	0.177037	0.303203	3.00552	0.11958

\* 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:
Location:	Spartan Compressor Station	
Flowsheet:	Output	

	6. Skim Tank Flash Gas	7. Condensate Tank Flash Gas	8. Skim Tank W&B	9. Water Tank W&B	10. Condensate Tank W&B
Mole Fraction	%	%	%	%	%
Ethylbenzene	0.004365	0.00433892	0.00735056	0.0725788	0.00305191
o-Xylene	0.0496035	0.0493075	0.0833739	0.827055	0.031099
n-Hexane	1.78023	1.77249	3.05343	0.105652	1.89768
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.00548958	0.00545468	0.00897073	0.0196244	0.00372192
Decanes Plus Sat	0	0	0	0	0

	6. Skim Tank Flash Gas	7. Condensate Tank Flash Gas	8. Skim Tank W&B	9. Water Tank W&B	10. Condensate Tank W&B
Mass Fraction	%	%	%	%	%
Triethylene Glycol	1.27528E-09	1.47182E-09	1.39985E-09	2.53312E-08	9.7225E-13
Water	1.51492	0.55841	2.01312	37.9004	0.000285892
Hydrogen Sulfide	0.00358271	0.00221828	0.00485249	0.0974665	0.00173428
Carbon Dioxide	0.242021	0.10071	0.185994	2.44057	0.0808264
Nitrogen	0.0109704	0.00599794	0.00023932	0.00273405	0.000246702
Methane	4.98672	3.81308	0.288463	2.54893	0.780995
Ethane	12.8787	14.0451	3.00522	9.59331	16.3954
Propane	23.4704	25.1712	17.5333	12.2575	27.5249
Isobutane	7.7342	7.89456	10.234	2.73705	7.95303
n-Butane	17.3661	17.443	23.3098	8.29491	17.6347
Isopentane	6.35291	6.24118	8.67976	2.10292	6.03838
n-Pentane	7.43493	7.27512	10.1735	1.01875	6.94875
i-C6	7.30312	7.08931	10.016	1.34453	6.99978
i-C7	5.27942	5.10861	7.19041	0.636833	4.80112
Octane	1.12602	1.08871	1.51005	0.0322951	0.926735
Nonane	0.222196	0.214613	0.29466	0.00612921	0.155409
Benzene	0.227871	0.221509	0.311749	5.96373	0.143203
Toluene	0.357597	0.346199	0.485443	9.37748	0.222801
Ethylbenzene	0.0101042	0.00977652	0.0135602	0.260926	0.00655193
o-Xylene	0.114823	0.1111	0.153807	2.97332	0.0667643
n-Hexane	3.34497	3.24181	4.5723	0.308311	3.30691
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.0183611	0.0177589	0.0239121	0.10194	0.0115454
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	6. Skim Tank Flash Gas	7. Condensate Tank Flash Gas	8. Skim Tank W&B	9. Water Tank W&B	10. Condensate Tank W&B
Temperature	°F	80	80	86.1583	85.2658	84.5378
Pressure	psig	0.25	0.25	-3.75267	-11.9113	3.04322
Molecular Weight	lb/lbmol	45.8633	47.1171	57.5488	29.5308	49.452
Mass Flow	lb/h	4.16311	279.156	10.6121	0.530142	46.0872
Std Vapor Volumetric Flow	MMSCFD	0.000826718	0.0539602	0.00167945	0.000163502	0.00848792
Std Liquid Volumetric Flow	sgpm	0.0160538	1.08062	0.0361955	0.00158362	0.177515
API Gravity						
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	2351.2	2441.75	2904.15	892.096	2574.72

**Remarks**

<h2 style="margin:0;">Process Streams Report</h2> <h3 style="margin:0;">All Streams</h3> <p style="margin:0;">Tabulated by Total Phase</p>	
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Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Output	

<b>Connections</b>					
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	11. Condensate Sales Liquid	12. Produced Water Liquid	13. BTEX Cond Vapors to Combustion	14. Skim Tank Inlet	15. HPF Pilot / Purge Gas
From Block	Tankage - Condensate Sales Liquid	Tankage - Produced Water Sales Liquid	Tankage - BTEX Vapors to Combustion	Tankage - Skim Tank Inlet	SPLT-100
To Block	--	--	--	--	--

<b>Stream Composition</b>					
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	11. Condensate Sales Liquid	12. Produced Water Liquid	13. BTEX Cond Vapors to Combustion	14. Skim Tank Inlet	15. HPF Pilot / Purge Gas
<b>Mass Flow</b>	<b>lb/h</b>	<b>lb/h</b>	<b>lb/h</b>	<b>lb/h</b>	<b>lb/h</b>
Triethylene Glycol	0.000106308	0.890854	8.49722E-09	0.890855	1.51922E-05
Water	0.814934	7601.68	1.35171	7601.76	0.00974324
Hydrogen Sulfide	0.00721203	0.000877291	0.123282	0.00114196	0.00439828
Carbon Dioxide	0.111515	0.0193181	2.61217	0.0321856	0.897684
Nitrogen	0.000649383	1.5688E-05	0.00955884	0.000490019	2.48045
Methane	1.51234	0.0170926	7.96437	0.24705	169.523
Ethane	35.3992	0.0670952	16.0553	0.92585	44.5966
Propane	223.123	0.0812059	24.0306	3.0817	27.2834
Isobutane	173.626	0.016321	6.09304	1.98476	5.53022
n-Butane	560.511	0.0541603	20.95	6.17251	10.4938
Isopentane	493.439	0.0124452	7.2047	5.12847	2.91973
n-Pentane	762.493	0.00473902	9.9204	7.8396	3.05942
i-C6	1855.63	0.00678701	7.65147	18.7681	1.92733
i-C7	4098.78	0.00246333	3.01924	41.1376	0.69037
Octane	4072.25	5.63301E-05	0.155893	40.7536	0.0349943
Nonane	2559.48	8.45161E-06	0.00639944	25.601	0.00113557
Benzene	84.6186	0.11695	4.26488	0.968518	0.0310796
Toluene	442.327	0.137764	2.92344	4.57009	0.021293
Ethylbenzene	39.2379	0.0034131	0.0186748	0.396042	0.000204091
o-Xylene	573.597	0.0578997	0.211619	5.79674	0.00154391
n-Hexane	1226.66	0.00116393	3.20625	12.361	0.722789
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	1363.83	0.000794467	3.17602E-05	13.6396	2.4738E-06
Decanes Plus Sat	0	0	0	0	0

	11. Condensate Sales Liquid	12. Produced Water Liquid	13. BTEX Cond Vapors to Combustion	14. Skim Tank Inlet	15. HPF Pilot / Purge Gas
<b>Mole Fraction</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>
Triethylene Glycol	3.74068E-07	0.00140582	2.12527E-09	0.00139929	7.67809E-07
Water	0.0239033	99.996	2.81819	99.5329	0.00410474
Hydrogen Sulfide	0.000111821	6.10025E-06	0.135868	7.90374E-06	0.000979481
Carbon Dioxide	0.00133895	0.000104024	2.22938	0.000172508	0.154811
Nitrogen	1.22493E-05	1.32714E-07	0.0128164	4.12611E-06	0.67203
Methane	0.0498144	0.000252494	18.647	0.00363252	80.2011
Ethane	0.622088	0.000528794	20.0552	0.00726297	11.2566
Propane	2.67378	0.000436422	20.4691	0.016485	4.69599
Isobutane	1.57852	6.65455E-05	3.9375	0.00805489	0.722144
n-Butane	5.09588	0.000220828	13.5385	0.0250503	1.37029
Isopentane	3.61395	4.08779E-05	3.75073	0.0167669	0.307141
n-Pentane	5.5845	1.55659E-05	5.1645	0.0256306	0.321835
i-C6	11.3785	1.86642E-05	3.33496	0.0513724	0.169745
i-C7	21.6151	5.82587E-06	1.13175	0.0968404	0.0522913
Octane	18.8381	1.16864E-07	0.0512603	0.084156	0.00232512

\* User Specified Values  
 ? Extrapolated or Approximate Values

**Process Streams Report**  
**All Streams**  
Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Output	

	11. Condensate Sales Liquid	12. Produced Water Liquid	13. BTEX Cond Vapors to Combustion	14. Skim Tank Inlet	15. HPF Pilot / Purge Gas
Mole Fraction	%	%	%	%	%
Nonane	10.5452	1.56163E-08	0.00187411	0.0470842	6.71992E-05
Benzene	0.572436	0.00035481	2.05078	0.00292472	0.00301982
Toluene	2.53676	0.000354331	1.19174	0.0116998	0.00175396
Ethylbenzene	0.1953	7.61872E-06	0.00660699	0.00087994	1.45904E-05
o-Xylene	2.85498	0.000129244	0.0748691	0.0128794	0.000110373
n-Hexane	7.52175	3.20079E-06	1.39747	0.0338348	0.0636578
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	4.69799	1.22734E-06	7.77653E-06	0.0209734	1.22395E-07
Decanes Plus Sat	0	0	0	0	0

	11. Condensate Sales Liquid	12. Produced Water Liquid	13. BTEX Cond Vapors to Combustion	14. Skim Tank Inlet	15. HPF Pilot / Purge Gas
Mass Fraction	%	%	%	%	%
Triethylene Glycol	5.72549E-07	0.0117169	7.21491E-09	0.0114329	5.62198E-06
Water	0.00438904	99.9804	1.14772	97.5578	0.00360555
Hydrogen Sulfide	3.88423E-05	1.15385E-05	0.104678	1.46554E-05	0.00162761
Carbon Dioxide	0.000600594	0.000254079	2.21797	0.000413057	0.332194
Nitrogen	3.49742E-06	2.06335E-07	0.00811632	6.2887E-06	0.917908
Methane	0.0081451	0.000224809	6.76247	0.00317054	62.733
Ethane	0.190652	0.000882464	13.6324	0.011882	16.5033
Propane	1.20169	0.00106805	20.4042	0.0395493	10.0964
Isobutane	0.93511	0.00021466	5.17354	0.0254716	2.04649
n-Butane	3.01878	0.000712339	17.7884	0.0792154	3.88328
Isopentane	2.65755	0.000163685	6.11745	0.0658166	1.08047
n-Pentane	4.10661	6.23295E-05	8.42332	0.10061	1.13216
i-C6	9.99398	8.92656E-05	6.4968	0.240862	0.713221
i-C7	22.0751	3.23987E-05	2.56361	0.527943	0.255476
Octane	21.9322	7.40876E-07	0.132368	0.523015	0.0129499
Nonane	13.7848	1.11159E-07	0.0054337	0.328552	0.000420226
Benzene	0.455736	0.00153817	3.62127	0.0124296	0.0115012
Toluene	2.38227	0.00181193	2.48227	0.0586506	0.00787961
Ethylbenzene	0.211326	4.48905E-05	0.0158566	0.00508264	7.55253E-05
o-Xylene	3.08926	0.000761521	0.179684	0.0743929	0.000571334
n-Hexane	6.60651	1.53085E-05	2.7224	0.158636	0.267473
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	7.34526	1.04492E-05	2.69673E-05	0.175045	9.15444E-07
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	11. Condensate Sales Liquid	12. Produced Water Liquid	13. BTEX Cond Vapors to Combustion	14. Skim Tank Inlet	15. HPF Pilot / Purge Gas
Temperature	°F	80	100	70	83	78.4346
Pressure	psig	0.25	0.25	0	16	120
Molecular Weight	lb/lbmol	98.1137	18.0181	44.2358	18.38	20.5095
Mass Flow	lb/h	18567.5	7603.17	117.773	7792.06	270.229
Std Vapor Volumetric Flow	MMSCFD	1.72356	3.84318	0.024248	3.8611	0.12 *
Std Liquid Volumetric Flow	sgpm	53.548	15.1998	0.454192	15.7481	1.58115
API Gravity		70.8677	9.99769		11.5075	
Net Ideal Gas Heating Value	Btu/ft^3	4950.43	0.120851	2221.84	22.6049	1119.76

\* 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:
Location:	Spartan Compressor Station	
Flowsheet:	Output	

**Connections**

	16. LPF Pilot / Purge Gas	17. HPF Blowdowns	18. Fuel Gas Other	19. Inlet Flaring	20. Fuel Gas Other
From Block	SPLT-100	SPLT-102	SPLT-100	SPLT-101	SPLT-101
To Block	--	--	--	--	--

**Stream Composition**

Mass Flow	16. LPF Pilot / Purge Gas lb/h	17. HPF Blowdowns lb/h	18. Fuel Gas Other lb/h	19. Inlet Flaring lb/h	20. Fuel Gas Other lb/h
Triethylene Glycol	1.26602E-05	0	0.00161851	1.30092	2.93151
Water	0.00811936	0	1.038	5.58842	12.593
Hydrogen Sulfide	0.00366524	0.000854582	0.468574	2.59953	5.8578
Carbon Dioxide	0.74807	0.166635	95.6353	515.884	1162.5
Nitrogen	2.06704	0.450263	264.257	1399.05	3152.63
Methane	141.269	30.9938	18060.2	96248.9	216888
Ethane	37.1639	8.4778	4751.13	26195.2	59028.6
Propane	22.7362	5.63908	2906.66	17204.1	38767.9
Isobutane	4.60851	1.30439	589.165	3892.07	8770.42
n-Butane	8.7448	2.7108	1117.96	7955.75	17927.6
Isopentane	2.43311	0.993217	311.056	2753.16	6203.99
n-Pentane	2.54952	1.18318	325.937	3181.79	7169.87
i-C6	1.60611	1.32244	205.329	3034.61	6838.22
i-C7	0.575308	1.3191	73.5489	2071.09	4667.01
Octane	0.0291619	0.595773	3.72814	296.799	668.811
Nonane	0.000946311	0.276577	0.120979	26.0019	58.593
Benzene	0.0258996	0.0313386	3.31108	56.0501	126.304
Toluene	0.0177442	0.0901049	2.26846	86.3971	194.688
Ethylbenzene	0.000170076	0.0053242	0.021743	1.88128	4.23929
o-Xylene	0.00128659	0.0718767	0.164481	17.2713	38.9194
n-Hexane	0.602324	0.667705	77.0027	1398.42	3151.21
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	2.0615E-06	0.130782	0.000263547	0.221575	0.4993
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	16. LPF Pilot / Purge Gas %	17. HPF Blowdowns %	18. Fuel Gas Other %	19. Inlet Flaring %	20. Fuel Gas Other %
Triethylene Glycol	7.67809E-07	0	7.67809E-07	0.000112711	0.000112711
Water	0.00410474	0	0.00410474	0.00403603	0.00403603
Hydrogen Sulfide	0.000979481	0.000999999	0.000979481	0.000992409	0.000992409
Carbon Dioxide	0.154811	0.150998	0.154811	0.152515	0.152515
Nitrogen	0.67203	0.640994	0.67203	0.649792	0.649792
Methane	80.2011	77.0472	80.2011	78.0606	78.0606
Ethane	11.2566	11.2439	11.2566	11.3347	11.3347
Propane	4.69599	5.09995	4.69599	5.07626	5.07626
Isobutane	0.722144	0.894991	0.722144	0.871255	0.871255
n-Butane	1.37029	1.85998	1.37029	1.78093	1.78093
Isopentane	0.307141	0.548995	0.307141	0.496488	0.496488
n-Pentane	0.321835	0.653993	0.321835	0.573785	0.573785
i-C6	0.169745	0.611994	0.169745	0.45817	0.45817
i-C7	0.0522913	0.524995	0.0522913	0.268924	0.268924
Octane	0.00232512	0.207998	0.00232512	0.0338061	0.0338061
Nonane	6.71992E-05	0.0859991	6.71992E-05	0.00263778	0.00263778
Benzene	0.00301982	0.0159998	0.00301982	0.00933611	0.00933611
Toluene	0.00175396	0.0389996	0.00175396	0.0122002	0.0122002
Ethylbenzene	1.45904E-05	0.00199998	1.45904E-05	0.000230557	0.000230557
o-Xylene	0.000110373	0.0269997	0.000110373	0.00211666	0.00211666
n-Hexane	0.0636578	0.308997	0.0636578	0.211135	0.211135
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	1.22395E-07	0.0339997	1.22395E-07	1.87933E-05	1.87933E-05
Decanes Plus Sat	0	0	0	0	0

\* 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:
Location:	Spartan Compressor Station	
Flowsheet:	Output	

Mass Fraction	16. LPF Pilot / Purge Gas %	17. HPF Blowdowns %	18. Fuel Gas Other %	19. Inlet Flaring %	20. Fuel Gas Other %
Triethylene Glycol	5.62198E-06	0	5.62198E-06	0.000782067	0.000782067
Water	0.00360555	0	0.00360555	0.00335955	0.00335955
Hydrogen Sulfide	0.00162761	0.00151438	0.00162761	0.00156274	0.00156274
Carbon Dioxide	0.332194	0.295289	0.332194	0.31013	0.31013
Nitrogen	0.917908	0.7979	0.917908	0.841057	0.841057
Methane	62.733	54.9233	62.733	57.8613	57.8613
Ethane	16.5033	15.0233	16.5033	15.7476	15.7476
Propane	10.0964	9.99287	10.0964	10.3425	10.3425
Isobutane	2.04649	2.31148	2.04649	2.33977	2.33977
n-Butane	3.88328	4.80374	3.88328	4.7827	4.7827
Isopentane	1.08047	1.76005	1.08047	1.6551	1.6551
n-Pentane	1.13216	2.09668	1.13216	1.91277	1.91277
i-C6	0.713221	2.34347	0.713221	1.8243	1.8243
i-C7	0.255476	2.33754	0.255476	1.24506	1.24506
Octane	0.0129499	1.05575	0.0129499	0.178425	0.178425
Nonane	0.000420226	0.490115	0.000420226	0.0156314	0.0156314
Benzene	0.0115012	0.0555343	0.0115012	0.0336952	0.0336952
Toluene	0.00787961	0.159672	0.00787961	0.0519387	0.0519387
Ethylbenzene	7.55253E-05	0.00943487	7.55253E-05	0.00113095	0.00113095
o-Xylene	0.000571334	0.127371	0.000571334	0.0103829	0.0103829
n-Hexane	0.267473	1.18322	0.267473	0.840677	0.840677
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	9.15444E-07	0.231755	9.15444E-07	0.000133203	0.000133203
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	16. LPF Pilot / Purge Gas	17. HPF Blowdowns	18. Fuel Gas Other	19. Inlet Flaring	20. Fuel Gas Other
Temperature	°F	78.4346	100	78.4346	93.2685	93.2685
Pressure	psig	120	48	120	1281	1281
Molecular Weight	lb/lbmol	20.5095	22.5046	20.5095	21.6429	21.6429
Mass Flow	lb/h	225.191	56.4311	28789	166344	374842
Std Vapor Volumetric Flow	MMSCFD	0.1 *	0.0228377 *	12.7843	70 *	157.739
Std Liquid Volumetric Flow	sgpm	1.31763	0.311899	168.449	941.904	2122.5
API Gravity						
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	1119.76	1219.09	1119.76	1176.43	1176.43

**Remarks**

<b>Process Streams Report</b>		
<b>All Streams</b>		
Tabulated by Total Phase		

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Output	

Connections					
	21. Inlet Gas	22. Condensate Flash Losses Hrly	23. HPS Water to SWD	24. Water Truck Loading	25. DEHY1-3 Max Hourly
From Block	Inlet - Inlet Gas	W & B - Cond Flashing Losses Hrly	Inlet - HPS water	W & B - Water Truck Loading	DEHY1 - DEHY1-3 Max Hrly
To Block	SPLT-102	--	--	--	--

Stream Composition					
	21. Inlet Gas	22. Condensate Flash Losses Hrly	23. HPS Water to SWD	24. Water Truck Loading	25. DEHY1-3 Max Hourly
Mass Flow	lb/h	lb/h	lb/h	lb/h	lb/h
Triethylene Glycol	0	1.08732E-11	3.63696E-13	5.54624E-10	9.69277E-07
Water	0	0.000383157	1777.11	0.147892	10.6034
Hydrogen Sulfide	8.98076	0.00520047	0.0012213	8.80524E-06	0.128663
Carbon Dioxide	1751.16	0.117608	0.072354	0.000612451	2.644
Nitrogen	4731.8	0.000774963	0.00270781	2.29223E-07	0.00956034
Methane	325712	1.3073	0.614716	0.000337817	7.98439
Ethane	89092.8	43.6476	0.274955	0.00126926	16.3894
Propane	59260.8	149.07	0.110454	0.000396273	25.8255
Isobutane	13707.8	49.8763	0.0123856	2.92772E-05	7.3583
n-Butane	28487.7	157.241	0.0375728	6.66546E-05	27.5934
Isopentane	10437.7	52.0431	0.00642267	6.06183E-06	12.6647
n-Pentane	12433.9	61.9424	0.00369741	1.73634E-06	19.8254
i-C6	13897.5	25.0364	0.003524	1.05345E-06	23.7985
i-C7	13862.4	27.4026	0.000980058	1.23599E-07	18.2947
Octane	6260.95	5.06515	3.19503E-05	5.88657E-10	1.86991
Nonane	2906.53	0.559906	1.5714E-06	2.36783E-11	0.106043
Benzene	329.336	1.89558	0.0229467	8.40848E-06	19.1243
Toluene	946.907	1.56789	0.022181	3.05746E-06	23.8182
Ethylbenzene	55.9517	0.0457585	0.000295319	2.61735E-08	0.232233
o-Xylene	755.348	0.309433	0.00425943	3.13168E-07	2.66196
n-Hexane	7016.87	17.782	0.000786287	1.30803E-07	12.4561
2,2,4-Trimethylpentane	0	1.09206	0	0	0
Decanes Plus	1374.38	0.000369404	2.00163E-06	3.45955E-10	0.000705663
Decanes Plus Sat	0	0	0	0	0

	21. Inlet Gas	22. Condensate Flash Losses Hrly	23. HPS Water to SWD	24. Water Truck Loading	25. DEHY1-3 Max Hourly
Mole Fraction	%	%	%	%	%
Triethylene Glycol	0	6.62247E-13	2.4538E-15	4.45095E-08	1.43944E-07
Water	0	0.000194532	99.9459	98.9352	13.1263
Hydrogen Sulfide	0.000999999	0.00139568	3.63081E-05	0.0031137	0.0841939
Carbon Dioxide	0.150998	0.0244426	0.00166575	0.167715	1.33984
Nitrogen	0.640994	0.000253029	9.79367E-05	9.86138E-05	0.00761108
Methane	77.0472	0.745348	0.0388236	0.25378	11.0997
Ethane	11.2439	13.2769	0.00926476	0.50872	12.1558
Propane	5.09995	30.9207	0.00253792	0.108304	13.0615
Isobutane	0.894991	7.84887	0.000215907	0.00607062	2.82341
n-Butane	1.85998	24.7445	0.000654974	0.0138208	10.5877
Isopentane	0.548995	6.59765	9.01942E-05	0.00101256	3.91474
n-Pentane	0.653993	7.85262	5.19232E-05	0.000290035	6.12817
i-C6	0.611994	2.65732	4.14329E-05	0.000147325	6.15894
i-C7	0.524995	2.50133	9.90987E-06	1.48657E-05	4.07182
Octane	0.207998	0.405576	2.83395E-07	6.2106E-08	0.365077
Nonane	0.0859991	0.0399297	1.24138E-08	2.22496E-09	0.0184393

\* User Specified Values  
 ? Extrapolated or Approximate Values

## Process Streams Report All Streams Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Output	

	21. Inlet Gas	22. Condensate Flash Losses Hrly	23. HPS Water to SWD	24. Water Truck Loading	25. DEHY1-3 Max Hourly
Mole Fraction	%	%	%	%	%
Benzene	0.0159998	0.221963	0.000297643	0.00129732	5.46017
Toluene	0.0389996	0.155643	0.000243912	0.000399914	5.7651
Ethylbenzene	0.00199998	0.00394226	2.8184E-06	2.97117E-06	0.0487844
o-Xylene	0.0269997	0.0266588	4.06502E-05	3.55502E-05	0.55919
n-Hexane	0.308997	1.88736	9.24465E-06	1.82928E-05	3.22356
2,2,4-Trimethylpentane	0	0.0874435	0	0	0
Decanes Plus	0.0339997	2.20258E-05	1.32206E-08	2.71794E-08	0.000102591
Decanes Plus Sat	0	0	0	0	0

	21. Inlet Gas	22. Condensate Flash Losses Hrly	23. HPS Water to SWD	24. Water Truck Loading	25. DEHY1-3 Max Hourly
Mass Fraction	%	%	%	%	%
Triethylene Glycol	0	1.82433E-12	2.04519E-14	3.68193E-07	4.15305E-07
Water	0	6.42871E-05	99.933	98.1799	4.54321
Hydrogen Sulfide	0.00151438	0.00087255	6.8678E-05	0.00584546	0.055128
Carbon Dioxide	0.295289	0.0197327	0.00406872	0.406582	1.13287
Nitrogen	0.7979	0.000130026	0.00015227	0.000152172	0.00409631
Methane	54.9233	0.219342	0.0345676	0.224264	3.42106
Ethane	15.0233	7.32333	0.0154617	0.842615	7.02234
Propane	9.99287	25.0113	0.0062112	0.26307	11.0654
Isobutane	2.31148	8.36839	0.000696485	0.019436	3.1528
n-Butane	4.80374	26.3823	0.00211285	0.0442493	11.8229
Isopentane	1.76005	8.73194	0.000361169	0.00402421	5.42641
n-Pentane	2.09668	10.3929	0.000207918	0.00115268	8.49455
i-C6	2.34347	4.20068	0.000198167	0.000699343	10.1969
i-C7	2.33754	4.59769	5.51121E-05	8.20525E-05	7.83872
Octane	1.05575	0.849845	1.79668E-06	3.90786E-07	0.801198
Nonane	0.490115	0.0939427	8.83655E-08	1.57191E-08	0.0454361
Benzene	0.0555343	0.318045	0.00129037	0.00558206	8.19415
Toluene	0.159672	0.263065	0.00124732	0.00202973	10.2053
Ethylbenzene	0.00943487	0.00767749	1.66068E-05	1.73756E-05	0.0995046
o-Xylene	0.127371	0.0519176	0.000239523	0.0002079	1.14057
n-Hexane	1.18322	2.98352	4.42157E-05	8.6835E-05	5.33703
2,2,4-Trimethylpentane	0	0.183229	0	0	0
Decanes Plus	0.231755	6.19796E-05	1.12559E-07	2.29666E-07	0.000302355
Decanes Plus Sat	0	0	0	0	0

Stream Properties						
Property	Units	21. Inlet Gas	22. Condensate Flash Losses Hrly	23. HPS Water to SWD	24. Water Truck Loading	25. DEHY1-3 Max Hourly
Temperature	°F	100		104.468	97.1838	120
Pressure	psig	48	8.20393	400	-11.998	0
Molecular Weight	lb/lbmol	22.5046	54.5139	18.0176	18.1539	52.0498
Mass Flow	lb/h	593031	596.008	1778.3	0.150634	233.389
Std Vapor Volumetric Flow	MMSCFD	240	0.0995748	0.898902	7.55716E-05	0.0408381
Std Liquid Volumetric Flow	sgpm	3277.73	2.15692	3.55916	0.000308492	0.772193
API Gravity				10.0377		
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	1219.09	2826.67	0.619497	13.7896	2489.25

**Remarks**

\* User Specified Values  
? Extrapolated or Approximate Values

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Output	

**Connections**

	26. Skim Flashing Losses Hrly	27. WT Flashing Losses Hrly	28. Condensate Loading Emissions	29. Dehy Flash Tank Vapors	
From Block	W & B - Skim Flashing Flosses Hrly	W & B - WT Flashing Losses Hrly	XFS1	XFS2	
To Block	--	--	--	--	

**Stream Composition**

	26. Skim Flashing Losses Hrly	27. WT Flashing Losses Hrly	28. Condensate Loading Emissions	29. Dehy Flash Tank Vapors	
<b>Mass Flow</b>	<b>lb/h</b>	<b>lb/h</b>	<b>lb/h</b>	<b>lb/h</b>	
Triethylene Glycol	3.8728E-10	2.78052E-12	2.52203E-13	0.0317333	
Water	0.188594	0.00146023	7.12895E-05	2.26201	
Hydrogen Sulfide	0.000276474	2.50871E-06	0.000451819	0.0739149	
Carbon Dioxide	0.0157901	0.000168254	0.0191024	7.05174	
Nitrogen	0.00047212	5.39528E-06	2.0203E-05	0.775055	
Methane	0.225231	0.00281356	0.135602	175.124	
Ethane	0.689228	0.00803461	4.22112	108.164	
Propane	1.57114	0.0141246	7.1645	91.0667	
Isobutane	0.619634	0.00465282	2.03919	19.4904	
n-Butane	1.48278	0.0102626	4.49788	51.3071	
Isopentane	0.610029	0.00368353	1.52885	15.9006	
n-Pentane	0.736768	0.0030475	1.75755	21.4436	
i-C6	0.777082	0.0034638	1.76701	17.4846	
i-C7	0.602997	0.00231188	1.21289	12.2849	
Octane	0.139872	0.000192909	0.234902	1.47442	
Nonane	0.029372	3.86277E-05	0.0394006	0.101345	
Benzene	0.0246204	0.000182888	0.0361913	1.25843	
Toluene	0.0415334	0.000283859	0.0563606	1.59543	
Ethylbenzene	0.00124899	8.44632E-06	0.00166087	0.0230763	
o-Xylene	0.0143233	9.51635E-05	0.0169353	0.223796	
n-Hexane	0.367854	0.00118103	0.83484	8.02061	
2,2,4-Trimethylpentane	0	0	0	0	
Decanes Plus	0.00261821	1.59583E-05	0.00294568	0.000717029	
Decanes Plus Sat	0	0	0	0	

	26. Skim Flashing Losses Hrly	27. WT Flashing Losses Hrly	28. Condensate Loading Emissions	29. Dehy Flash Tank Vapors	
<b>Mole Fraction</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>	
Triethylene Glycol	1.61211E-09	1.44266E-09	3.25649E-13	0.00110645	
Water	6.54409	6.31551	0.000767319	0.657446	
Hydrogen Sulfide	0.00507113	0.00573545	0.00257066	0.0113561	
Carbon Dioxide	0.224284	0.297884	0.0841654	0.838989	
Nitrogen	0.0105353	0.0150064	0.000139843	0.144868	
Methane	8.77642	13.6651	1.63903	57.1586	
Ethane	14.3286	20.8197	27.2207	18.8352	
Propane	22.2731	24.9579	31.5052	10.8136	
Isobutane	6.6643	6.23739	6.80309	1.75584	
n-Butane	15.9476	13.7576	15.0057	4.62213	
Isopentane	5.28546	3.978	4.10892	1.15396	
n-Pentane	6.38356	3.29111	4.72356	1.55624	
i-C6	5.63696	3.13183	3.97602	1.06238	
i-C7	3.76184	1.7977	2.34712	0.641949	
Octane	0.76545	0.131585	0.398752	0.0675856	
Nonane	0.14316	0.0234667	0.0595689	0.00413746	

\* 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:
Location:	Spartan Compressor Station	
Flowsheet:	Output	

	26. Skim Flashing Losses Hrlly	27. WT Flashing Losses Hrlly	28. Condensate Loading Emissions	29. Dehy Flash Tank Vapors	
Mole Fraction	%	%	%	%	
Benzene	0.197033	0.182431	0.0898419	0.0843565	
Toluene	0.281785	0.240044	0.118611	0.0906659	
Ethylbenzene	0.00735426	0.0061989	0.00303352	0.00113813	
o-Xylene	0.0843382	0.0698421	0.0309317	0.0110377	
n-Hexane	2.66842	1.06784	1.8785	0.487339	
2,2,4-Trimethylpentane	0	0	0	0	
Decanes Plus	0.0106694	0.00810571	0.00372351	2.44747E-05	
Decanes Plus Sat	0	0	0	0	

	26. Skim Flashing Losses Hrlly	27. WT Flashing Losses Hrlly	28. Condensate Loading Emissions	29. Dehy Flash Tank Vapors	
Mass Fraction	%	%	%	%	
Triethylene Glycol	4.75689E-09	4.96255E-09	9.8642E-13	0.0059297	
Water	2.31647	2.60615	0.000278829	0.42268	
Hydrogen Sulfide	0.00339588	0.00447743	0.00176716	0.0138118	
Carbon Dioxide	0.193946	0.300291	0.0747138	1.31769	
Nitrogen	0.00579897	0.00962924	7.90184E-05	0.144827	
Methane	2.76647	5.02152	0.530369	32.7238	
Ethane	8.46566	14.3398	16.5097	20.2116	
Propane	19.298	25.2089	28.0219	17.0168	
Isobutane	7.61085	8.30415	7.97571	3.64199	
n-Butane	18.2127	18.3162	17.5922	9.58728	
Isopentane	7.49287	6.57421	5.97968	2.97119	
n-Pentane	9.04958	5.43903	6.87415	4.00696	
i-C6	9.54476	6.18203	6.91118	3.26717	
i-C7	7.4065	4.12614	4.74387	2.29555	
Octane	1.71802	0.344294	0.918753	0.275511	
Nonane	0.360771	0.0689409	0.154104	0.0189374	
Benzene	0.302408	0.326411	0.141552	0.235151	
Toluene	0.510147	0.506619	0.220439	0.298123	
Ethylbenzene	0.0153411	0.0150746	0.00649604	0.00431205	
o-Xylene	0.175931	0.169843	0.0662379	0.0418187	
n-Hexane	4.51828	2.10785	3.26524	1.49874	
2,2,4-Trimethylpentane	0	0	0	0	
Decanes Plus	0.032159	0.0284817	0.0115212	0.000133984	
Decanes Plus Sat	0	0	0	0	

### Stream Properties

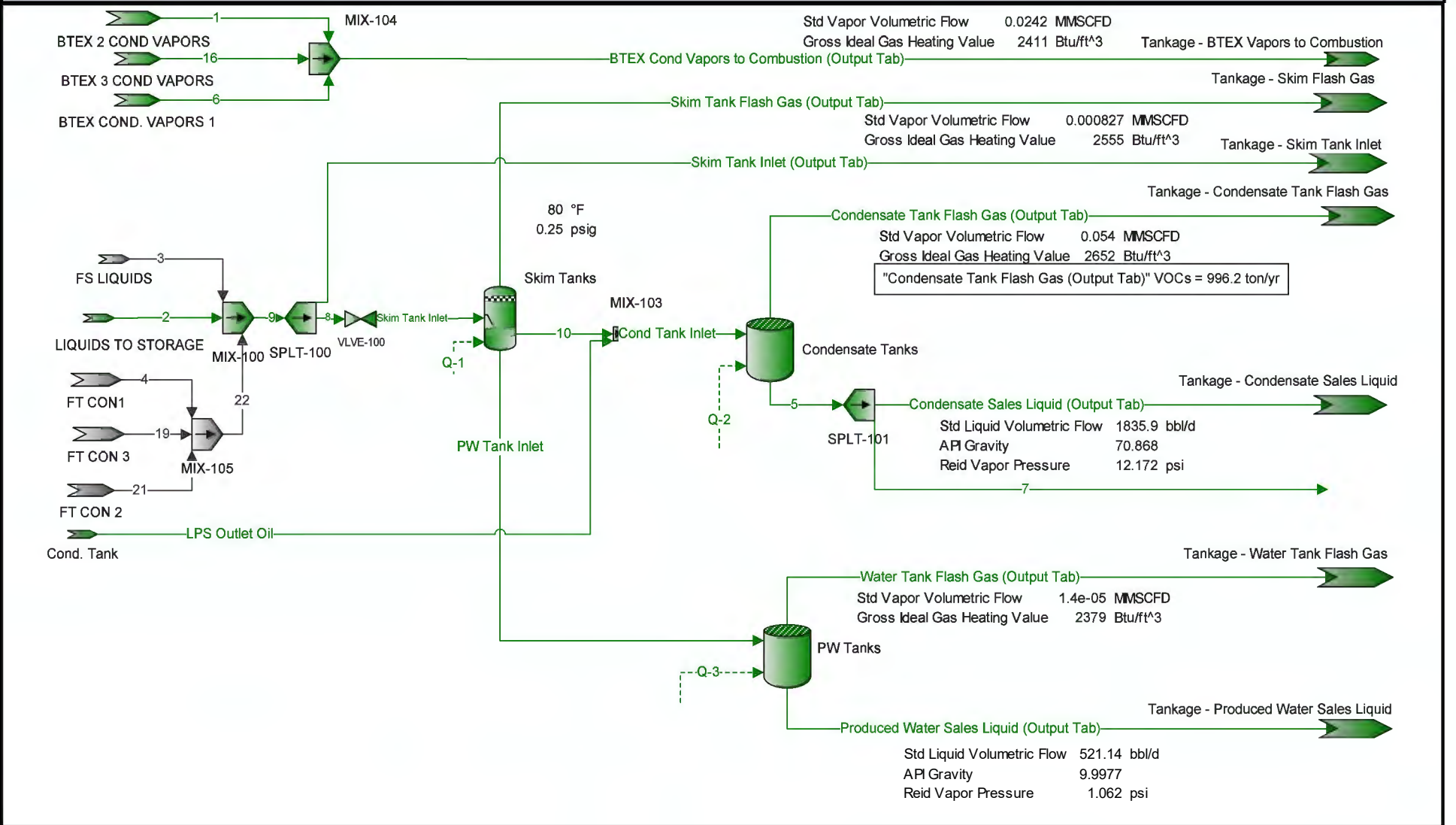
Property	Units	26. Skim Flashing Losses Hrlly	27. WT Flashing Losses Hrlly	28. Condensate Loading Emissions	29. Dehy Flash Tank Vapors	
Temperature	°F	96.163	94.9252	85.2658	159.541	
Pressure	psig	-6.32587E-07	9.6198E-07	3.45592	55	
Molecular Weight	lb/lbmol	50.8936	43.6566	49.5769	28.0213	
Mass Flow	lb/h	8.14146	0.0560301	25.5675	535.159	
Std Vapor Volumetric Flow	MMSCFD	0.00145695	1.1689E-05	0.00469692	0.17394	
Std Liquid Volumetric Flow	sgpm	0.0294421	0.000218778	0.0984342	2.64561	
API Gravity						
Net Ideal Gas Heating Value	Btu/ft^3	2573.03	2215.44	2581.2	1479.67	

**Remarks**

\* User Specified Values  
? Extrapolated or Approximate Values

# Tankage Plant Schematic

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Tankage	



\* User Specified Values  
 ? Extrapolated or Approximate Values

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Tankage	

**Connections**

	BTEX Cond Vapors to Combustion (Output Tab)	Cond Tank Inlet	Condensate Sales Liquid (Output Tab)	Condensate Tank Flash Gas (Output Tab)	LPS Outlet Oil
From Block	MIX-104	MIX-103	SPLT-101	Condensate Tanks	Cond. Tank
To Block	Tankage - BTEX Vapors to Combustion	Condensate Tanks	Tankage - Condensate Sales Liquid	Tankage - Condensate Tank Flash Gas	MIX-103

**Stream Composition**

	BTEX Cond Vapors to Combustion (Output Tab)	Cond Tank Inlet	Condensate Sales Liquid (Output Tab)	Condensate Tank Flash Gas (Output Tab)	LPS Outlet Oil
Mass Flow	lb/h	lb/h	lb/h	lb/h	lb/h
Triethylene Glycol	8.49722E-09	0.000106312	0.000106308	4.10867E-09	0.000105418
Water	1.35171	2.37377	0.814934	1.55884	2.35238
Hydrogen Sulfide	0.123282	0.0134045	0.00721203	0.00619247	0.0132921
Carbon Dioxide	2.61217	0.392653	0.111515	0.281138	0.390069
Nitrogen	0.00955884	0.017393	0.000649383	0.0167436	0.0173816
Methane	7.96437	12.1568	1.51234	10.6444	12.1377
Ethane	16.0553	74.6069	35.3992	39.2077	74.294
Propane	24.0306	293.39	223.123	70.267	291.383
Isobutane	6.09304	195.664	173.626	22.0382	194.023
n-Butane	20.95	609.204	560.511	48.6933	603.821
Isopentane	7.2047	510.862	493.439	17.4227	506.015
n-Pentane	9.9204	782.802	762.493	20.309	775.28
i-C6	7.65147	1875.42	1855.63	19.7903	1856.96
i-C7	3.01924	4113.05	4098.78	14.261	4072.13
Octane	0.155893	4075.29	4072.25	3.03921	4034.58
Nonane	0.00639944	2560.08	2559.48	0.599107	2534.49
Benzene	4.26488	85.237	84.6186	0.618356	84.3951
Toluene	2.92344	443.293	442.327	0.966437	438.876
Ethylbenzene	0.0186748	39.2652	39.2379	0.0272918	38.873
o-Xylene	0.211619	573.908	573.597	0.310144	568.174
n-Hexane	3.20625	1235.71	1226.66	9.04973	1223.49
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	3.17602E-05	1363.88	1363.83	0.0495751	1350.24
Decanes Plus Sat	0	0	0	0	0

	BTEX Cond Vapors to Combustion (Output Tab)	Cond Tank Inlet	Condensate Sales Liquid (Output Tab)	Condensate Tank Flash Gas (Output Tab)	LPS Outlet Oil
Mole Fraction	%	%	%	%	%
Triethylene Glycol	2.12527E-09	3.62726E-07	3.74068E-07	4.61786E-10	3.63168E-07
Water	2.81819	0.0675129	0.0239033	1.46046	0.067554
Hydrogen Sulfide	0.135868	0.000201525	0.000111821	0.00306679	0.000201774
Carbon Dioxide	2.22938	0.00457143	0.00133895	0.107821	0.00458542
Nitrogen	0.0128164	0.000318125	1.22493E-05	0.0100882	0.000321002
Methane	18.647	0.388273	0.0498144	11.1991	0.391427
Ethane	20.0552	1.2713	0.622088	22.0081	1.27826
Propane	20.4691	3.4091	2.67378	26.896	3.41864
Isobutane	3.9375	1.72488	1.57852	6.39977	1.72702
n-Butane	13.5385	5.37044	5.09588	14.1403	5.37465
Isopentane	3.75073	3.62797	3.61395	4.07583	3.62843
n-Pentane	5.1645	5.5592	5.5845	4.75105	5.55922
i-C6	3.33496	11.1508	11.3785	3.87614	11.1482
i-C7	1.13175	21.0318	21.6151	2.40218	21.0247
Octane	0.0512603	18.2799	18.8381	0.449073	18.2729

\* 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:
Location:	Spartan Compressor Station	
Flowsheet:	Tankage	

	BTEX Cond Vapors to Combustion (Output Tab)	Cond Tank Inlet	Condensate Sales Liquid (Output Tab)	Condensate Tank Flash Gas (Output Tab)	LPS Outlet Oil
Mole Fraction	%	%	%	%	%
Nonane	0.00187411	10.2275	10.5452	0.0788425	10.2235
Benzene	2.05078	0.559114	0.572436	0.133614	0.558965
Toluene	1.19174	2.46513	2.53676	0.177037	2.46425
Ethylbenzene	0.00660699	0.189503	0.1953	0.00433892	0.189431
o-Xylene	0.0748691	2.76981	2.85498	0.0493075	2.76875
n-Hexane	1.39747	7.34722	7.52175	1.77249	7.34517
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	7.77653E-06	4.55554	4.69799	0.00545468	4.55376
Decanes Plus Sat	0	0	0	0	0

	BTEX Cond Vapors to Combustion (Output Tab)	Cond Tank Inlet	Condensate Sales Liquid (Output Tab)	Condensate Tank Flash Gas (Output Tab)	LPS Outlet Oil
Mass Fraction	%	%	%	%	%
Triethylene Glycol	7.21491E-09	5.6409E-07	5.72549E-07	1.47182E-09	5.64882E-07
Water	1.14772	0.0125952	0.00438904	0.55841	0.0126052
Hydrogen Sulfide	0.104678	7.11242E-05	3.88423E-05	0.00221828	7.12256E-05
Carbon Dioxide	2.21797	0.00208342	0.000600594	0.10071	0.00209018
Nitrogen	0.00811632	9.22871E-05	3.49742E-06	0.00599794	9.3139E-05
Methane	6.76247	0.0645038	0.0081451	3.81308	0.06504
Ethane	13.6324	0.395864	0.190652	14.0451	0.398104
Propane	20.4042	1.55673	1.20169	25.1712	1.56138
Isobutane	5.17354	1.03819	0.93511	7.89456	1.03967
n-Butane	17.7884	3.23243	3.01878	17.443	3.23557
Isopentane	6.11745	2.71063	2.65755	6.24118	2.71148
n-Pentane	8.42332	4.15354	4.10661	7.27512	4.15434
i-C6	6.4968	9.95096	9.99398	7.08931	9.95054
i-C7	2.56361	21.8238	22.0751	5.10861	21.8205
Octane	0.132368	21.6235	21.9322	1.08871	21.6193
Nonane	0.0054337	13.5838	13.7848	0.214613	13.5811
Benzene	3.62127	0.452267	0.455736	0.221509	0.452231
Toluene	2.48227	2.35211	2.38227	0.346199	2.35172
Ethylbenzene	0.0158566	0.208341	0.211326	0.00977652	0.208301
o-Xylene	0.179684	3.04515	3.08926	0.1111	3.04456
n-Hexane	2.7224	6.55667	6.60651	3.24181	6.55608
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	2.69673E-05	7.23673	7.34526	0.0177589	7.23526
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	BTEX Cond Vapors to Combustion (Output Tab)	Cond Tank Inlet	Condensate Sales Liquid (Output Tab)	Condensate Tank Flash Gas (Output Tab)	LPS Outlet Oil
Temperature	°F	70	78.7783	80	80 *	83
Pressure	psig	0	0.25	0.25	0.25 *	16
Molecular Weight	lb/lbmol	44.2358	96.5656	98.1137	47.1171	96.5475
Mass Flow	lb/h	117.773	18846.6	18567.5	279.156	18661.9
Std Vapor Volumetric Flow	MMSCFD	0.024248	1.77752	1.72356	0.0539602	1.76044
Std Liquid Volumetric Flow	sgpm	0.454192	54.6286	53.548	1.08062	54.0967
API Gravity				70.8677		71.5
Net Ideal Gas Heating Value	Btu/ft^3	2221.84	4874.27	4950.43	2441.75	4873.39

**Remarks**

\* User Specified Values  
 ? Extrapolated or Approximate Values

<b>Process Streams Report</b>		
<b>All Streams</b>		
Tabulated by Total Phase		

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Tankage	

<b>Connections</b>
--------------------

	Produced Water Sales Liquid (Output Tab)	PW Tank Inlet	Skim Tank Flash Gas (Output Tab)	Skim Tank Inlet	Skim Tank Inlet (Output Tab)
From Block	PW Tanks	Skim Tanks	Skim Tanks	VLVE-100	SPLT-100
To Block	Tankage - Produced Water Sales Liquid	PW Tanks	Tankage - Skim Flash Gas	Skim Tanks	Tankage - Skim Tank Inlet

<b>Stream Composition</b>
---------------------------

	Produced Water Sales Liquid (Output Tab) lb/h	PW Tank Inlet lb/h	Skim Tank Flash Gas (Output Tab) lb/h	Skim Tank Inlet lb/h	Skim Tank Inlet (Output Tab) lb/h
<b>Mass Flow</b>					
Triethylene Glycol	0.890854	0.890854	5.30911E-11	0.890855	0.890855
Water	7601.68	7601.68	0.0630678	7601.76	7601.76
Hydrogen Sulfide	0.000877291	0.000880383	0.000149152	0.00114196	0.00114196
Carbon Dioxide	0.0193181	0.0195253	0.0100756	0.0321856	0.0321856
Nitrogen	1.5688E-05	2.18732E-05	0.000456711	0.000490019	0.000490019
Methane	0.0170926	0.0203922	0.207603	0.24705	0.24705
Ethane	0.0670952	0.0767492	0.536155	0.92585	0.92585
Propane	0.0812059	0.0980633	0.977101	3.0817	3.0817
Isobutane	0.016321	0.0218972	0.321983	1.98476	1.98476
n-Butane	0.0541603	0.0663616	0.722971	6.17251	6.17251
Isopentane	0.0124452	0.0168239	0.264479	5.12847	5.12847
n-Pentane	0.00473902	0.00815031	0.309524	7.8396	7.8396
i-C6	0.00678701	0.0107566	0.304037	18.7681	18.7681
i-C7	0.00246333	0.00509484	0.219788	41.1376	41.1376
Octane	5.63301E-05	0.00025837	0.0468776	40.7536	40.7536
Nonane	8.45161E-06	4.90354E-05	0.00925025	25.601	25.601
Benzene	0.11695	0.117185	0.00948652	0.968518	0.968518
Toluene	0.137764	0.138129	0.0148872	4.57009	4.57009
Ethylbenzene	0.0034131	0.00342413	0.000420647	0.396042	0.396042
o-Xylene	0.0578997	0.0580237	0.0047802	5.79674	5.79674
n-Hexane	0.00116393	0.00246657	0.139255	12.361	12.361
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.000794467	0.000815552	0.000764393	13.6396	13.6396
Decanes Plus Sat	0	0	0	0	0

	Produced Water Sales Liquid (Output Tab) %	PW Tank Inlet %	Skim Tank Flash Gas (Output Tab) %	Skim Tank Inlet %	Skim Tank Inlet (Output Tab) %
<b>Mole Fraction</b>					
Triethylene Glycol	0.00140582	0.00140581	3.89473E-10	0.00139929	0.00139929
Water	99.996	99.9957	3.85668	99.5329	99.5329
Hydrogen Sulfide	6.10025E-06	6.12172E-06	0.00482133	7.90374E-06	7.90374E-06
Carbon Dioxide	0.000104024	0.000105139	0.252216	0.000172508	0.000172508
Nitrogen	1.32714E-07	1.85037E-07	0.0179607	4.12611E-06	4.12611E-06
Methane	0.000252494	0.000301235	14.2564	0.00363252	0.00363252
Ethane	0.000528794	0.000604877	19.6435	0.00726297	0.00726297
Propane	0.000436422	0.000527016	24.4113	0.016485	0.016485
Isobutane	6.65455E-05	8.9281E-05	6.10293	0.00805489	0.00805489
n-Butane	0.000220828	0.000270575	13.7033	0.0250503	0.0250503
Isopentane	4.08779E-05	5.52601E-05	4.0384	0.0167669	0.0167669
n-Pentane	1.55659E-05	2.67706E-05	4.72621	0.0256306	0.0256306
i-C6	1.86642E-05	2.95805E-05	3.88679	0.0513724	0.0513724
i-C7	5.82587E-06	1.20495E-05	2.41644	0.0968404	0.0968404
Octane	1.16864E-07	5.36019E-07	0.452104	0.084156	0.084156

\* User Specified Values  
 ? Extrapolated or Approximate Values

## Process Streams Report All Streams Tabulated by Total Phase

Client Name: DELAWARE DIVISION Job:  
 Location: Spartan Compressor Station  
 Flowsheet: Tankage

	Produced Water Sales Liquid (Output Tab)	PW Tank Inlet	Skim Tank Flash Gas (Output Tab)	Skim Tank Inlet	Skim Tank Inlet (Output Tab)
Mole Fraction	%	%	%	%	%
Nonane	1.56163E-08	9.06041E-08	0.0794559	0.0470842	0.0470842
Benzene	0.00035481	0.000355524	0.133794	0.00292472	0.00292472
Toluene	0.000354331	0.000355268	0.178	0.0116998	0.0116998
Ethylbenzene	7.61872E-06	7.64332E-06	0.004365	0.00087994	0.00087994
o-Xylene	0.000129244	0.00012952	0.0496035	0.0128794	0.0128794
n-Hexane	3.20079E-06	6.78302E-06	1.78023	0.0338348	0.0338348
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	1.22734E-06	1.25991E-06	0.00548958	0.0209734	0.0209734
Decanes Plus Sat	0	0	0	0	0

	Produced Water Sales Liquid (Output Tab)	PW Tank Inlet	Skim Tank Flash Gas (Output Tab)	Skim Tank Inlet	Skim Tank Inlet (Output Tab)
Mass Fraction	%	%	%	%	%
Triethylene Glycol	0.0117169	0.0117168	1.27528E-09	0.0114329	0.0114329
Water	99.9804	99.9795	1.51492	97.5578	97.5578
Hydrogen Sulfide	1.15385E-05	1.15791E-05	0.00358271	1.46554E-05	1.46554E-05
Carbon Dioxide	0.000254079	0.000256802	0.242021	0.000413057	0.000413057
Nitrogen	2.06335E-07	2.87682E-07	0.0109704	6.2887E-06	6.2887E-06
Methane	0.000224809	0.000268204	4.98672	0.00317054	0.00317054
Ethane	0.000882464	0.00100943	12.8787	0.011882	0.011882
Propane	0.00106805	0.00128976	23.4704	0.0395493	0.0395493
Isobutane	0.00021466	0.000287998	7.7342	0.0254716	0.0254716
n-Butane	0.000712339	0.000872808	17.3661	0.0792154	0.0792154
Isopentane	0.000163685	0.000221273	6.35291	0.0658166	0.0658166
n-Pentane	6.23295E-05	0.000107195	7.43493	0.10061	0.10061
i-C6	8.92656E-05	0.000141474	7.30312	0.240862	0.240862
i-C7	3.23987E-05	6.70089E-05	5.27942	0.527943	0.527943
Octane	7.40876E-07	3.39815E-06	1.12602	0.523015	0.523015
Nonane	1.11159E-07	6.44928E-07	0.222196	0.328552	0.328552
Benzene	0.00153817	0.00154126	0.227871	0.0124296	0.0124296
Toluene	0.00181193	0.00181671	0.357597	0.0586506	0.0586506
Ethylbenzene	4.48905E-05	4.50352E-05	0.0101042	0.00508264	0.00508264
o-Xylene	0.000761521	0.000763145	0.114823	0.0743929	0.0743929
n-Hexane	1.53085E-05	3.24411E-05	3.34497	0.158636	0.158636
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	1.04492E-05	1.07264E-05	0.0183611	0.175045	0.175045
Decanes Plus Sat	0	0	0	0	0

### Stream Properties

Property	Units	Produced Water Sales Liquid (Output Tab)	PW Tank Inlet	Skim Tank Flash Gas (Output Tab)	Skim Tank Inlet	Skim Tank Inlet (Output Tab)
Temperature	°F	100	80	80 *	82.9391	83
Pressure	psig	0.25	0.25	0.25 *	0.25 *	16
Molecular Weight	lb/lbmol	18.0181	18.0182	45.8633	18.38	18.38
Mass Flow	lb/h	7603.17	7603.23	4.16311	7792.06	7792.06
Std Vapor Volumetric Flow	MMSCFD	3.84318	3.84319	0.000826718	3.8611	3.8611
Std Liquid Volumetric Flow	sgpm	15.1998	15.2	0.0160538	15.7481	15.7481
API Gravity		9.99769	9.99818			11.5075
Net Ideal Gas Heating Value	Btu/ft^3	0.120851	0.128814	2351.2	22.6049	22.6049

Remarks

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Tankage	

**Connections**

	Water Tank Flash Gas (Output Tab)	1	2	3	4
From Block	PW Tanks	BTEX 2 COND VAPORS	LIQUIDS TO STORAGE	FS LIQUIDS	FT CON1
To Block	Tankage - Water Tank Flash Gas	MIX-104	MIX-100	MIX-100	MIX-105

**Stream Composition**

	Water Tank Flash Gas (Output Tab) lb/h	1 lb/h	2 lb/h	3 lb/h	4 lb/h
Triethylene Glycol	4.96717E-12	2.84705E-09	0.890855	0	0
Water	0.0020019	0.450577	7601.76	0	0
Hydrogen Sulfide	3.09179E-06	0.0410911	0.00114196	0	0
Carbon Dioxide	0.000207183	0.870473	0.0321856	0	0
Nitrogen	6.18512E-06	0.0031847	0.000490019	0	0
Methane	0.00329957	2.65393	0.24705	0	0
Ethane	0.00965401	5.351	0.92585	0	0
Propane	0.0168575	8.01028	3.0817	0	0
Isobutane	0.00557622	2.03135	1.98476	0	0
n-Butane	0.0122013	6.98469	6.17251	0	0
Isopentane	0.00437871	2.40259	5.12847	0	0
n-Pentane	0.00341129	3.30874	7.8396	0	0
i-C6	0.00396962	2.55199	18.7681	0	0
i-C7	0.00263151	1.00713	41.1376	0	0
Octane	0.00020204	0.0520159	40.7536	0	0
Nonane	4.05838E-05	0.00213516	25.601	0	0
Benzene	0.000235854	1.42186	0.968518	0	0
Toluene	0.000364757	0.974053	4.57009	0	0
Ethylbenzene	1.10327E-05	0.00621697	0.396042	0	0
o-Xylene	0.000123997	0.0703699	5.79674	0	0
n-Hexane	0.00130264	1.06953	12.361	0	0
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	2.10851E-05	1.05807E-05	13.6396	0	0
Decanes Plus Sat	0	0	0	0	0

	Water Tank Flash Gas (Output Tab) %	1 %	2 %	3 %	4 %
Triethylene Glycol	2.15211E-09	2.13621E-09	0.00139929		
Water	7.23016	2.81818	99.5329		
Hydrogen Sulfide	0.00590264	0.135856	7.90374E-06		
Carbon Dioxide	0.306305	2.22869	0.000172508		
Nitrogen	0.0143658	0.0128098	4.12611E-06		
Methane	13.3824	18.6406	0.00363252		
Ethane	20.8899	20.0519	0.00726297		
Propane	24.8739	20.4688	0.016485		
Isobutane	6.2423	3.93806	0.00805489		
n-Butane	13.6588	13.5408	0.0250503		
Isopentane	3.94879	3.75225	0.0167669		
n-Pentane	3.07636	5.16742	0.0256306		
i-C6	2.99718	3.33685	0.0513724		
i-C7	1.70874	1.13253	0.0968404		
Octane	0.115082	0.05131	0.084156		
Nonane	0.0205885	0.00187584	0.0470842		
Benzene	0.19646	2.05107	0.00292472		
Toluene	0.257579	1.19119	0.0116998		

\* 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:
Location:	Spartan Compressor Station	
Flowsheet:	Tankage	

	Water Tank Flash Gas (Output Tab) %	1 %	2 %	3 %	4 %
<b>Mole Fraction</b>					
Ethylbenzene	0.00676159	0.00659839	0.00087994		
o-Xylene	0.0759933	0.0746871	0.0128794		
n-Hexane	0.983534	1.39846	0.0338348		
2,2,4-Trimethylpentane	0	0	0		
Decanes Plus	0.00894328	7.77195E-06	0.0209734		
Decanes Plus Sat	0	0	0		

	Water Tank Flash Gas (Output Tab) %	1 %	2 %	3 %	4 %
<b>Mass Fraction</b>					
Triethylene Glycol	7.46942E-09	7.2512E-09	0.0114329		
Water	3.01037	1.14758	97.5578		
Hydrogen Sulfide	0.0046493	0.104655	1.46554E-05		
Carbon Dioxide	0.311553	2.21702	0.000413057		
Nitrogen	0.00930093	0.00811116	6.2887E-06		
Methane	4.96175	6.75933	0.00317054		
Ethane	14.5173	13.6285	0.011882		
Propane	25.3496	20.4015	0.0395493		
Isobutane	8.38528	5.17367	0.0254716		
n-Butane	18.3478	17.7894	0.0792154		
Isopentane	6.58452	6.11919	0.0658166		
n-Pentane	5.12976	8.42707	0.10061		
i-C6	5.96934	6.49969	0.240862		
i-C7	3.95716	2.56508	0.527943		
Octane	0.303819	0.13248	0.523015		
Nonane	0.0610282	0.00543806	0.328552		
Benzene	0.354667	3.62136	0.0124296		
Toluene	0.548506	2.48083	0.0586506		
Ethylbenzene	0.0165905	0.0158341	0.00508264		
o-Xylene	0.186461	0.179226	0.0743929		
n-Hexane	1.95886	2.724	0.158636		
2,2,4-Trimethylpentane	0	0	0		
Decanes Plus	0.0317068	2.69481E-05	0.175045		
Decanes Plus Sat	0	0	0		

Stream Properties						
Property	Units	Water Tank Flash Gas (Output Tab)	1	2	3	4
Temperature	°F	100 *	70	83		
Pressure	psig	0.25 *	0	16	0.25	55
Molecular Weight	lb/lbmol	43.2683	44.2412	18.38		
Mass Flow	lb/h	0.0665001	39.2632	7792.06	0	0
Std Vapor Volumetric Flow	MMSCFD	1.39977E-05	0.00808285	3.8611	0	0
Std Liquid Volumetric Flow	sgpm	0.000259607	0.151411	15.7481	0	0
API Gravity				11.5075		
Net Ideal Gas Heating Value	Btu/ft^3	2186.58	2222.12	22.6049		

**Remarks**

\* User Specified Values  
? Extrapolated or Approximate Values



**Process Streams Report**  
**All Streams**  
Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Tankage	

**Connections**

	5	6	7	8	9
From Block	Condensate Tanks	BTEX COND. VAPORS 1	SPLT-101	SPLT-100	MIX-100
To Block	SPLT-101	MIX-104	--	VLVE-100	SPLT-100

**Stream Composition**

Mass Flow	5 lb/h	6 lb/h	7 lb/h	8 lb/h	9 lb/h
Triethylene Glycol	0.000106308	2.84705E-09	0.000106308	0.890855	0.890855
Water	0.814934	0.450577	0.814934	7601.76	7601.76
Hydrogen Sulfide	0.00721203	0.0410911	0.00721203	0.00114196	0.00114196
Carbon Dioxide	0.111515	0.870473	0.111515	0.0321856	0.0321856
Nitrogen	0.000649383	0.0031847	0.000649383	0.000490019	0.000490019
Methane	1.51234	2.65393	1.51234	0.24705	0.24705
Ethane	35.3992	5.351	35.3992	0.92585	0.92585
Propane	223.123	8.01028	223.123	3.0817	3.0817
Isobutane	173.626	2.03135	173.626	1.98476	1.98476
n-Butane	560.511	6.98469	560.511	6.17251	6.17251
Isopentane	493.439	2.40259	493.439	5.12847	5.12847
n-Pentane	762.493	3.30874	762.493	7.8396	7.8396
i-C6	1855.63	2.55199	1855.63	18.7681	18.7681
i-C7	4098.78	1.00713	4098.78	41.1376	41.1376
Octane	4072.25	0.0520159	4072.25	40.7536	40.7536
Nonane	2559.48	0.00213516	2559.48	25.601	25.601
Benzene	84.6186	1.42186	84.6186	0.968518	0.968518
Toluene	442.327	0.974053	442.327	4.57009	4.57009
Ethylbenzene	39.2379	0.00621697	39.2379	0.396042	0.396042
o-Xylene	573.597	0.0703699	573.597	5.79674	5.79674
n-Hexane	1226.66	1.06953	1226.66	12.361	12.361
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	1363.83	1.05807E-05	1363.83	13.6396	13.6396
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	5 %	6 %	7 %	8 %	9 %
Triethylene Glycol	3.74068E-07	2.13621E-09	3.74068E-07	0.00139929	0.00139929
Water	0.0239033	2.81818	0.0239033	99.5329	99.5329
Hydrogen Sulfide	0.000111821	0.135856	0.000111821	7.90374E-06	7.90374E-06
Carbon Dioxide	0.00133895	2.22869	0.00133895	0.000172508	0.000172508
Nitrogen	1.22493E-05	0.0128098	1.22493E-05	4.12611E-06	4.12611E-06
Methane	0.0498144	18.6406	0.0498144	0.00363252	0.00363252
Ethane	0.622088	20.0519	0.622088	0.00726297	0.00726297
Propane	2.67378	20.4688	2.67378	0.016485	0.016485
Isobutane	1.57852	3.93806	1.57852	0.00805489	0.00805489
n-Butane	5.09588	13.5408	5.09588	0.0250503	0.0250503
Isopentane	3.61395	3.75225	3.61395	0.0167669	0.0167669
n-Pentane	5.5845	5.16742	5.5845	0.0256306	0.0256306
i-C6	11.3785	3.33685	11.3785	0.0513724	0.0513724
i-C7	21.6151	1.13253	21.6151	0.0968404	0.0968404
Octane	18.8381	0.05131	18.8381	0.084156	0.084156
Nonane	10.5452	0.00187584	10.5452	0.0470842	0.0470842
Benzene	0.572436	2.05107	0.572436	0.00292472	0.00292472
Toluene	2.53676	1.19119	2.53676	0.0116998	0.0116998
Ethylbenzene	0.1953	0.00659839	0.1953	0.00087994	0.00087994
o-Xylene	2.85498	0.0746871	2.85498	0.0128794	0.0128794
n-Hexane	7.52175	1.39846	7.52175	0.0338348	0.0338348
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	4.69799	7.77195E-06	4.69799	0.0209734	0.0209734
Decanes Plus Sat	0	0	0	0	0

\* User Specified Values

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**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Tankage	

Mass Fraction	5 %	6 %	7 %	8 %	9 %
Triethylene Glycol	5.72549E-07	7.2512E-09	5.72549E-07	0.0114329	0.0114329
Water	0.00438904	1.14758	0.00438904	97.5578	97.5578
Hydrogen Sulfide	3.88423E-05	0.104655	3.88423E-05	1.46554E-05	1.46554E-05
Carbon Dioxide	0.000600594	2.21702	0.000600594	0.000413057	0.000413057
Nitrogen	3.49742E-06	0.00811116	3.49742E-06	6.2887E-06	6.2887E-06
Methane	0.0081451	6.75933	0.0081451	0.00317054	0.00317054
Ethane	0.190652	13.6285	0.190652	0.011882	0.011882
Propane	1.20169	20.4015	1.20169	0.0395493	0.0395493
Isobutane	0.93511	5.17367	0.93511	0.0254716	0.0254716
n-Butane	3.01878	17.7894	3.01878	0.0792154	0.0792154
Isopentane	2.65755	6.11919	2.65755	0.0658166	0.0658166
n-Pentane	4.10661	8.42707	4.10661	0.10061	0.10061
i-C6	9.99398	6.49969	9.99398	0.240862	0.240862
i-C7	22.0751	2.56508	22.0751	0.527943	0.527943
Octane	21.9322	0.13248	21.9322	0.523015	0.523015
Nonane	13.7848	0.00543806	13.7848	0.328552	0.328552
Benzene	0.455736	3.62136	0.455736	0.0124296	0.0124296
Toluene	2.38227	2.48083	2.38227	0.0586506	0.0586506
Ethylbenzene	0.211326	0.0158341	0.211326	0.00508264	0.00508264
o-Xylene	3.08926	0.179226	3.08926	0.0743929	0.0743929
n-Hexane	6.60651	2.724	6.60651	0.158636	0.158636
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	7.34526	2.69481E-05	7.34526	0.175045	0.175045
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	5	6	7	8	9
Temperature	°F	80	70	80	83	83
Pressure	psig	0.25	0	0.25	16	16
Molecular Weight	lb/lbmol	98.1137	44.2412	98.1137	18.38	18.38
Mass Flow	lb/h	18567.5	39.2632	18567.5	7792.06	7792.06
Std Vapor Volumetric Flow	MMSCFD	1.72356	0.00808285	1.72356	3.8611	3.8611
Std Liquid Volumetric Flow	sgpm	53.548	0.151411	53.548	15.7481	15.7481
API Gravity		70.8677		70.8677	11.5075	11.5075
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	4950.43	2222.12	4950.43	22.6049	22.6049

Remarks

**Process Streams Report**  
**All Streams**  
Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	Tankage	

**Connections**

	10	16	19	21	22
From Block	Skim Tanks	BTEX 3 COND VAPORS	FT CON 3	FT CON 2	MIX-105
To Block	MIX-103	MIX-104	MIX-105	MIX-105	MIX-100

**Stream Composition**

Mass Flow	10 lb/h	16 lb/h	19 lb/h	21 lb/h	22 lb/h
Triethylene Glycol	8.93775E-07	2.80311E-09	0	0	0
Water	0.0213875	0.450552	0	0	0
Hydrogen Sulfide	0.000112423	0.0411	0	0	0
Carbon Dioxide	0.00258477	0.871224	0	0	0
Nitrogen	1.14348E-05	0.00318943	0	0	0
Methane	0.0190555	2.65651	0	0	0
Ethane	0.312946	5.35325	0	0	0
Propane	2.00654	8.01007	0	0	0
Isobutane	1.64088	2.03034	0	0	0
n-Butane	5.38318	6.98058	0	0	0
Isopentane	4.84717	2.39952	0	0	0
n-Pentane	7.52192	3.30292	0	0	0
i-C6	18.4533	2.54749	0	0	0
i-C7	40.9128	1.00498	0	0	0
Octane	40.7065	0.0518614	0	0	0
Nonane	25.5917	0.00212912	0	0	0
Benzene	0.841846	1.42116	0	0	0
Toluene	4.41707	0.975334	0	0	0
Ethylbenzene	0.392197	0.00624088	0	0	0
o-Xylene	5.73393	0.0708795	0	0	0
n-Hexane	12.2193	1.0672	0	0	0
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	13.638	1.05987E-05	0	0	0
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	10 %	16 %	19 %	21 %	22 %
Triethylene Glycol	3.17235E-07	2.10338E-09			
Water	0.0632795	2.8182			
Hydrogen Sulfide	0.000175828	0.135894			
Carbon Dioxide	0.00313054	2.23075			
Nitrogen	2.17575E-05	0.0128297			
Methane	0.0633133	18.6599			
Ethane	0.554747	20.0616			
Propane	2.42548	20.4696			
Isobutane	1.5048	3.93636			
n-Butane	4.93676	13.5337			
Isopentane	3.581	3.74769			
n-Pentane	5.55706	5.15866			
i-C6	11.4139	3.33118			
i-C7	21.7634	1.13018			
Octane	18.9948	0.0511609			
Nonane	10.6358	0.00187065			
Benzene	0.574461	2.05019			
Toluene	2.55528	1.19284			
Ethylbenzene	0.19691	0.00662419			
o-Xylene	2.87883	0.0752329			
n-Hexane	7.55801	1.3955			
2,2,4-Trimethylpentane	0	0			
Decanes Plus	4.73883	7.78568E-06			
Decanes Plus Sat	0	0			

\* 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:
Location:	Spartan Compressor Station	
Flowsheet:	Tankage	

Mass Fraction	10 %	16 %	19 %	21 %	22 %
Triethylene Glycol	4.84005E-07	7.14232E-09			
Water	0.0115819	1.14801			
Hydrogen Sulfide	6.08802E-05	0.104723			
Carbon Dioxide	0.00139972	2.21987			
Nitrogen	6.19228E-06	0.00812666			
Methane	0.0103191	6.76877			
Ethane	0.169469	13.6401			
Propane	1.0866	20.4096			
Isobutane	0.888584	5.1733			
n-Butane	2.91515	17.7865			
Isopentane	2.62488	6.11396			
n-Pentane	4.07334	8.41582			
i-C6	9.99298	6.49101			
i-C7	22.1554	2.56068			
Octane	22.0437	0.132143			
Nonane	13.8586	0.00542499			
Benzene	0.455884	3.6211			
Toluene	2.39197	2.48515			
Ethylbenzene	0.212386	0.0159017			
o-Xylene	3.10509	0.180601			
n-Hexane	6.6171	2.71921			
2,2,4-Trimethylpentane	0	0			
Decanes Plus	7.38538	2.70055E-05			
Decanes Plus Sat	0	0			

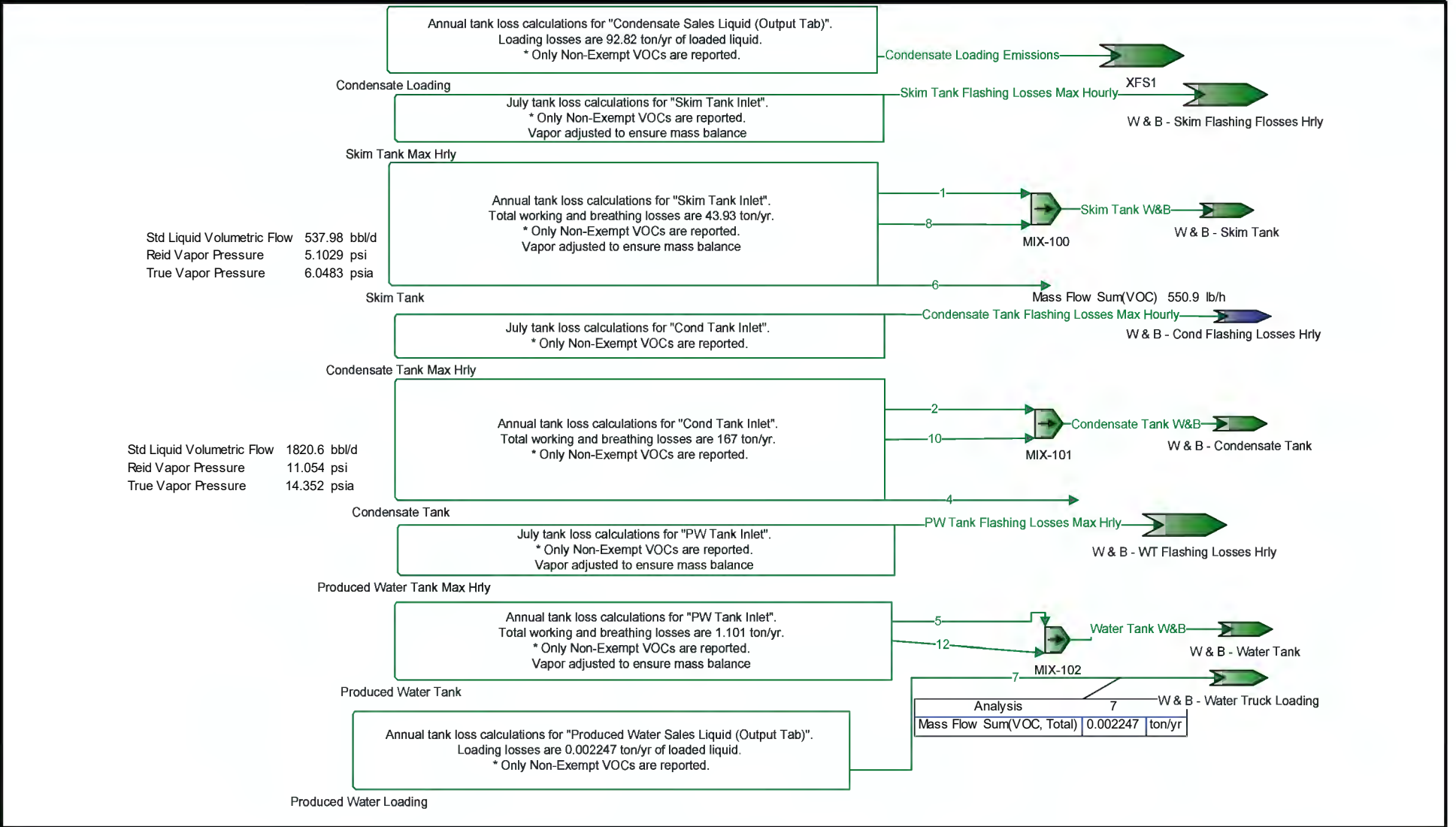
**Stream Properties**

Property	Units	10	16	19	21	22
Temperature	°F	80	70			
Pressure	psig	0.25	0	55	55	55
Molecular Weight	lb/lbmol	98.429	44.2252			
Mass Flow	lb/h	184.662	39.2465	0	0	0
Std Vapor Volumetric Flow	MMSCFD	0.0170868	0.00808233	0	0	0
Std Liquid Volumetric Flow	sgpm	0.531958	0.151371	0	0	0
API Gravity		70.6763				
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	4965.31	2221.27			

**Remarks**

## W & B Plant Schematic

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	W & B	



\* User Specified Values  
? Extrapolated or Approximate Values

## Process Streams Report All Streams

Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	W & B	

### Connections

	Condensate Loading Emissions	Condensate Tank Flashing Losses Max Hourly	Condensate Tank W&B	PW Tank Flashing Losses Max Hrlly	Skim Tank Flashing Losses Max Hourly
From Block	--	--	MIX-101	--	--
To Block	XFS1	W & B - Cond Flashing Losses Hrlly	W & B - Condensate Tank	W & B - WT Flashing Losses Hrlly	W & B - Skim Flashing Flosses Hrlly

### Stream Composition

	Condensate Loading Emissions lb/h	Condensate Tank Flashing Losses Max Hourly lb/h	Condensate Tank W&B lb/h	PW Tank Flashing Losses Max Hrlly lb/h	Skim Tank Flashing Losses Max Hourly lb/h
Triethylene Glycol	2.52203E-13 *	1.08732E-11	4.48083E-13	2.78052E-12 *	3.8728E-10 *
Water	7.12895E-05 *	0.000383157	0.00013176	0.00146023 *	0.188594 *
Hydrogen Sulfide	0.000451819 *	0.00520047	0.000799283	2.50871E-06 *	0.000276474 *
Carbon Dioxide	0.0191024 *	0.117608	0.0372506	0.000168254 *	0.0157901 *
Nitrogen	2.0203E-05 *	0.000774963	0.000113698	5.39528E-06 *	0.00047212 *
Methane	0.135602 *	1.3073	0.359939	0.00281356 *	0.225231 *
Ethane	4.22112 *	43.6476	7.55616	0.00803461 *	0.689228 *
Propane	7.1645 *	149.07	12.6855	0.0141246 *	1.57114 *
Isobutane	2.03919 *	49.8763	3.66533	0.00465282 *	0.619634 *
n-Butane	4.49788 *	157.241	8.12732	0.0102626 *	1.48278 *
Isopentane	1.52885 *	52.0431	2.78292	0.00368353 *	0.610029 *
n-Pentane	1.75755 *	61.9424	3.20249	0.0030475 *	0.736768 *
i-C6	1.76701 *	25.0364	3.226	0.0034638 *	0.777082 *
i-C7	1.21289 *	27.4026	2.2127	0.00231188 *	0.602997 *
Octane	0.234902 *	5.06515	0.427106	0.000192909 *	0.139872 *
Nonane	0.0394006 *	0.559906	0.0716235	3.86277E-05 *	0.029372 *
Benzene	0.0361913 *	1.89558	0.0659982	0.000182888 *	0.0246204 *
Toluene	0.0563606 *	1.56789	0.102683	0.000283859 *	0.0415334 *
Ethylbenzene	0.00166087 *	0.0457585	0.0030196	8.44632E-06 *	0.00124899 *
o-Xylene	0.0169353 *	0.309433	0.0307698	9.51635E-05 *	0.0143233 *
n-Hexane	0.83484 *	17.782	1.52406	0.00118103 *	0.367854 *
2,2,4-Trimethylpentane	0 *	1.09206	0	0 *	0 *
Decanes Plus	0.00294568 *	0.000369404	0.00532095	1.59583E-05 *	0.00261821 *
Decanes Plus Sat	0 *	0	0	0 *	0 *

	Condensate Loading Emissions %	Condensate Tank Flashing Losses Max Hourly %	Condensate Tank W&B %	PW Tank Flashing Losses Max Hrlly %	Skim Tank Flashing Losses Max Hourly %
Triethylene Glycol	3.25649E-13 *	6.62247E-13	3.20162E-13	1.44266E-09 *	1.61211E-09 *
Water	0.000767319 *	0.000194532	0.000784774	6.31551 *	6.54409 *
Hydrogen Sulfide	0.00257066 *	0.00139568	0.00251648	0.00573545 *	0.00507113 *
Carbon Dioxide	0.0841654 *	0.0244426	0.0908218	0.297884 *	0.224284 *
Nitrogen	0.000139843 *	0.000253029	0.000435503	0.0150064 *	0.0105353 *
Methane	1.63903 *	0.745348	2.40747	13.6651 *	8.77642 *
Ethane	27.2207 *	13.2769	26.964	20.8197 *	14.3286 *
Propane	31.5052 *	30.9207	30.8684	24.9579 *	22.2731 *
Isobutane	6.80309 *	7.84887	6.76666	6.23739 *	6.6643 *
n-Butane	15.0057 *	24.7445	15.0041	13.7576 *	15.9476 *
Isopentane	4.10892 *	6.59765	4.13881	3.978 *	5.28546 *
n-Pentane	4.72356 *	7.85262	4.76279	3.29111 *	6.38356 *
i-C6	3.97602 *	2.65732	4.01684	3.13183 *	5.63696 *
i-C7	2.34712 *	2.50133	2.36947	1.7977 *	3.76184 *
Octane	0.398752 *	0.405576	0.401204	0.131585 *	0.76545 *
Nonane	0.0595689 *	0.0399297	0.0599217	0.0234667 *	0.14316 *
Benzene	0.0898419 *	0.221963	0.0906605	0.182431 *	0.197033 *

\* 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:   
 Location: Spartan Compressor Station   
 Flowsheet: W & B

	Condensate Loading Emissions	Condensate Tank Flashing Losses Max Hourly	Condensate Tank W&B	PW Tank Flashing Losses Max Hrly	Skim Tank Flashing Losses Max Hourly
Mole Fraction	%	%	%	%	%
Toluene	0.118611 *	0.155643	0.11958	0.240044 *	0.281785 *
Ethylbenzene	0.00303352 *	0.00394226	0.00305191	0.0061989 *	0.00735426 *
o-Xylene	0.0309317 *	0.0266588	0.031099	0.0698421 *	0.0843382 *
n-Hexane	1.8785 *	1.88736	1.89768	1.06784 *	2.66842 *
2,2,4-Trimethylpentane	0 *	0.0874435	0	0 *	0 *
Decanes Plus	0.00372351 *	2.20258E-05	0.00372192	0.00810571 *	0.0106694 *
Decanes Plus Sat	0 *	0	0	0 *	0 *

	Condensate Loading Emissions	Condensate Tank Flashing Losses Max Hourly	Condensate Tank W&B	PW Tank Flashing Losses Max Hrly	Skim Tank Flashing Losses Max Hourly
Mass Fraction	%	%	%	%	%
Triethylene Glycol	9.8642E-13	1.82433E-12	9.7225E-13	4.96255E-09	4.75689E-09
Water	0.000278829	6.42871E-05	0.000285892	2.60615	2.31647
Hydrogen Sulfide	0.00176716	0.00087255	0.00173428	0.00447743	0.00339588
Carbon Dioxide	0.0747138	0.0197327	0.0808264	0.300291	0.193946
Nitrogen	7.90184E-05	0.000130026	0.000246702	0.00962924	0.00579897
Methane	0.530369	0.219342	0.780995	5.02152	2.76647
Ethane	16.5097	7.32333	16.3954	14.3398	8.46566
Propane	28.0219	25.0113	27.5249	25.2089	19.298
Isobutane	7.97571	8.36839	7.95303	8.30415	7.61085
n-Butane	17.5922	26.3823	17.6347	18.3162	18.2127
Isopentane	5.97968	8.73194	6.03838	6.57421	7.49287
n-Pentane	6.87415	10.3929	6.94875	5.43903	9.04958
i-C6	6.91118	4.20068	6.99978	6.18203	9.54476
i-C7	4.74387	4.59769	4.80112	4.12614	7.4065
Octane	0.918753	0.849845	0.926735	0.344294	1.71802
Nonane	0.154104	0.0939427	0.155409	0.0689409	0.360771
Benzene	0.141552	0.318045	0.143203	0.326411	0.302408
Toluene	0.220439	0.263065	0.222801	0.506619	0.510147
Ethylbenzene	0.00649604	0.00767749	0.00655193	0.0150746	0.0153411
o-Xylene	0.0662379	0.0519176	0.0667643	0.169843	0.175931
n-Hexane	3.26524	2.98352	3.30691	2.10785	4.51828
2,2,4-Trimethylpentane	0	0.183229	0	0	0
Decanes Plus	0.0115212	6.19796E-05	0.0115454	0.0284817	0.032159
Decanes Plus Sat	0	0	0	0	0

### Stream Properties

Property	Units	Condensate Loading Emissions	Condensate Tank Flashing Losses Max Hourly	Condensate Tank W&B	PW Tank Flashing Losses Max Hrly	Skim Tank Flashing Losses Max Hourly
Temperature	°F	85.2658	97.6568	84.5378	94.9252	96.163
Pressure	psig	3.45592	8.20393	3.04322	9.6198E-07	-6.32587E-07
Molecular Weight	lb/lbmol	49.5769	54.5139	49.452	43.6566	50.8936
Mass Flow	lb/h	25.5675	596.008	46.0872	0.0560301	8.14146
Std Vapor Volumetric Flow	MMSCFD	0.00469692	0.0995748	0.00848792	1.1689E-05	0.00145695
Std Liquid Volumetric Flow	sgpm	0.0984342	2.15692	0.177515	0.000218778	0.0294421
API Gravity						
Net Ideal Gas Heating Value	Btu/ft^3	2581.2	2826.67	2574.72	2215.44	2573.03

Remarks

## Process Streams Report All Streams Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	W & B	

### Connections

	Skim Tank W&B	Water Tank W&B	1	2	3
From Block	MIX-100	MIX-102	--	--	--
To Block	W & B - Skim Tank	W & B - Water Tank	MIX-100	MIX-101	--

### Stream Composition

	Skim Tank W&B lb/h	Water Tank W&B lb/h	1 lb/h	2 lb/h	3 lb/h
<b>Mass Flow</b>					
Triethylene Glycol	1.48553E-10	1.34291E-10	1.27651E-10 *	4.06413E-13 *	2.41106E-13 *
Water	0.213633	0.200926	0.183573 *	0.000119507 *	7.08976E-05 *
Hydrogen Sulfide	0.00051495	0.000516711	0.000442492 *	0.000724954 *	0.00043008 *
Carbon Dioxide	0.0197378	0.0129385	0.0169605 *	0.0337865 *	0.0200439 *
Nitrogen	2.53968E-05	1.44943E-05	2.18233E-05 *	0.000103125 *	6.11791E-05 *
Methane	0.0306119	0.013513	0.0263046 *	0.326466 *	0.193677 *
Ethane	0.318916	0.0508582	0.274042 *	6.85348 *	4.06584 *
Propane	1.86064	0.0649821	1.59883 *	11.5058 *	6.82583 *
Isobutane	1.08603	0.0145103	0.93322 *	3.32447 *	1.97225 *
n-Butane	2.47365	0.0439748	2.12558 *	7.37152 *	4.37317 *
Isopentane	0.921101	0.0111485	0.791495 *	2.52412 *	1.49744 *
n-Pentane	1.07962	0.00540084	0.927709 *	2.90467 *	1.7232 *
i-C6	1.0629	0.00712792	0.913341 *	2.926 *	1.73586 *
i-C7	0.76305	0.00337612	0.655683 *	2.00693 *	1.19062 *
Octane	0.160248	0.00017121	0.137699 *	0.387388 *	0.229819 *
Nonane	0.0312695	3.24935E-05	0.0268696 *	0.0649629 *	0.0385394 *
Benzene	0.033083	0.0316162	0.028428 *	0.0598607 *	0.0355125 *
Toluene	0.0515155	0.0497139	0.0442668 *	0.0931337 *	0.0552518 *
Ethylbenzene	0.00143901	0.00138328	0.00123653 *	0.00273879 *	0.0016248 *
o-Xylene	0.016322	0.0157628	0.0140254 *	0.0279083 *	0.0165567 *
n-Hexane	0.485215	0.00163448	0.416941 *	1.38233 *	0.820071 *
2,2,4-Trimethylpentane	0	0	0 *	0 *	0 *
Decanes Plus	0.00253756	0.000540429	0.00218051 *	0.00482613 *	0.00286311 *
Decanes Plus Sat	0	0	0 *	0 *	0 *

	Skim Tank W&B %	Water Tank W&B %	1 %	2 %	3 %
<b>Mole Fraction</b>					
Triethylene Glycol	5.36447E-10	4.98126E-09	5.36447E-10 *	3.20162E-13 *	3.20162E-13 *
Water	6.43079	62.1265	6.43079 *	0.000784774 *	0.000784774 *
Hydrogen Sulfide	0.0081939	0.0844538	0.0081939 *	0.00251648 *	0.00251648 *
Carbon Dioxide	0.243214	1.63764	0.243214 *	0.0908218 *	0.0908218 *
Nitrogen	0.000491643	0.00288214	0.000491643 *	0.000435503 *	0.000435503 *
Methane	1.0348	4.69204	1.0348 *	2.40747 *	2.40747 *
Ethane	5.75166	9.42158	5.75166 *	26.964 *	26.964 *
Propane	22.8825	8.20882	22.8825 *	30.8684 *	30.8684 *
Isobutane	10.133	1.39064	10.133 *	6.76666 *	6.76666 *
n-Butane	23.0798	4.21448	23.0798 *	15.0041 *	15.0041 *
Isopentane	6.92333	0.860732	6.92333 *	4.13881 *	4.13881 *
n-Pentane	8.11482	0.416979	8.11482 *	4.76279 *	4.76279 *
i-C6	6.68876	0.460747	6.68876 *	4.01684 *	4.01684 *
i-C7	4.12965	0.187683	4.12965 *	2.36947 *	2.36947 *
Octane	0.76077	0.00834904	0.76077 *	0.401204 *	0.401204 *
Nonane	0.132216	0.00141125	0.132216 *	0.0599217 *	0.0599217 *
Benzene	0.229681	2.25463	0.229681 *	0.0906605 *	0.0906605 *
Toluene	0.303203	3.00552	0.303203 *	0.11958 *	0.11958 *
Ethylbenzene	0.00735056	0.0725788	0.00735056 *	0.00305191 *	0.00305191 *
o-Xylene	0.0833739	0.827055	0.0833739 *	0.031099 *	0.031099 *
n-Hexane	3.05343	0.105652	3.05343 *	1.89768 *	1.89768 *
2,2,4-Trimethylpentane	0	0	0 *	0 *	0 *
Decanes Plus	0.00897073	0.0196244	0.00897073 *	0.00372192 *	0.00372192 *

\* User Specified Values  
? Extrapolated or Approximate Values



**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	W & B	

	Skim Tank W&B %	Water Tank W&B %	1 %	2 %	3 %
<b>Mole Fraction</b>					
Decanes Plus Sat	0	0	0 *	0 *	0 *

	Skim Tank W&B %	Water Tank W&B %	1 %	2 %	3 %
<b>Mass Fraction</b>					
Triethylene Glycol	1.39985E-09	2.53312E-08	1.39985E-09	9.7225E-13	9.7225E-13
Water	2.01312	37.9004	2.01312	0.000285892	0.000285892
Hydrogen Sulfide	0.00485249	0.0974665	0.00485249	0.00173428	0.00173428
Carbon Dioxide	0.185994	2.44057	0.185994	0.0808264	0.0808264
Nitrogen	0.00023932	0.00273405	0.00023932	0.000246702	0.000246702
Methane	0.288463	2.54893	0.288463	0.780995	0.780995
Ethane	3.00522	9.59331	3.00522	16.3954	16.3954
Propane	17.5333	12.2575	17.5333	27.5249	27.5249
Isobutane	10.234	2.73705	10.234	7.95303	7.95303
n-Butane	23.3098	8.29491	23.3098	17.6347	17.6347
Isopentane	8.67976	2.10292	8.67976	6.03838	6.03838
n-Pentane	10.1735	1.01875	10.1735	6.94875	6.94875
i-C6	10.016	1.34453	10.016	6.99978	6.99978
i-C7	7.19041	0.636833	7.19041	4.80112	4.80112
Octane	1.51005	0.0322951	1.51005	0.926735	0.926735
Nonane	0.29466	0.00612921	0.29466	0.155409	0.155409
Benzene	0.311749	5.96373	0.311749	0.143203	0.143203
Toluene	0.485443	9.37748	0.485443	0.222801	0.222801
Ethylbenzene	0.0135602	0.260926	0.0135602	0.00655193	0.00655193
o-Xylene	0.153807	2.97332	0.153807	0.0667643	0.0667643
n-Hexane	4.5723	0.308311	4.5723	3.30691	3.30691
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.0239121	0.10194	0.0239121	0.0115454	0.0115454
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	Skim Tank W&B	Water Tank W&B	1	2	3
Temperature	°F	86.1583	85.2658	86.1583	84.5378	84.5378
Pressure	psig	-3.75267	-11.9113	-3.75267	3.04322	3.04322
Molecular Weight	lb/lbmol	57.5488	29.5308	57.5488	49.452	49.452
Mass Flow	lb/h	10.6121	0.530142	9.11886	41.8013	24.7987
Std Vapor Volumetric Flow	MMSCFD	0.00167945	0.000163502	0.00144314	0.00769859	0.00456721
Std Liquid Volumetric Flow	sgpm	0.0361955	0.00158362	0.0311025	0.161007	0.0955176
API Gravity						
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	2904.15	892.096	2904.15	2574.72	2574.72

Remarks

## Process Streams Report All Streams Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	W & B	

### Connections

	4	5	6	7	8
From Block	--	--	--	--	--
To Block	--	MIX-102	--	W & B - Water Truck Loading	MIX-100

### Stream Composition

Mass Flow	4 lb/h	5 lb/h	6 lb/h	7 lb/h	8 lb/h
Triethylene Glycol	0.000106306 *	1.15395E-10 *	0.890855 *	5.54624E-10 *	2.09026E-11 *
Water	0.683233 *	0.172653 *	7601.45 *	0.147892 *	0.0300598 *
Hydrogen Sulfide	0.0055107 *	0.000444004 *	0.000429973 *	8.80524E-06 *	7.24574E-05 *
Carbon Dioxide	0.0548006 *	0.0111179 *	0 *	0.000612451 *	0.00277726 *
Nitrogen	0.000406962 *	1.24548E-05 *	0 *	2.29223E-07 *	3.57353E-06 *
Methane	0.858615 *	0.0116115 *	0 *	0.000337817 *	0.00430733 *
Ethane	22.9502 *	0.0437019 *	0 *	0.00126926 *	0.0448739 *
Propane	194.225 *	0.0558384 *	0 *	0.000396273 *	0.261807 *
Isobutane	163.492 *	0.0124685 *	0.46632 *	2.92772E-05 *	0.152813 *
n-Butane	537.115 *	0.0377871 *	2.70442 *	6.66546E-05 *	0.348061 *
Isopentane	484.574 *	0.00957975 *	3.8276 *	6.06183E-06 *	0.129606 *
n-Pentane	751.996 *	0.00464088 *	6.31038 *	1.73634E-06 *	0.151911 *
i-C6	1844.84 *	0.00612495 *	17.2521 *	1.05345E-06 *	0.149558 *
i-C7	4090.76 *	0.00290106 *	40.0383 *	1.23599E-07 *	0.107367 *
Octane	4070.49 *	0.000147119 *	40.5193 *	5.88657E-10 *	0.0225481 *
Nonane	2559.13 *	2.79213E-05 *	25.5547 *	2.36783E-11 *	0.00439986 *
Benzene	84.3116 *	0.0271675 *	0.921218 *	8.40848E-06 *	0.00465504 *
Toluene	441.823 *	0.0427187 *	4.49565 *	3.05746E-06 *	0.00724863 *
Ethylbenzene	39.2229 *	0.00118863 *	0.39394 *	2.61735E-08 *	0.000202481 *
o-Xylene	573.429 *	0.0135448 *	5.77285 *	3.13168E-07 *	0.00229664 *
n-Hexane	1221.57 *	0.00140449 *	11.6657 *	1.30803E-07 *	0.0682735 *
2,2,4-Trimethylpentane	0 *	0 *	0 *	0 *	0 *
Decanes Plus	1363.8 *	0.000464385 *	13.6358 *	3.45955E-10 *	0.000357055 *
Decanes Plus Sat	0 *	0 *	0 *	0 *	0 *

Mole Fraction	4 %	5 %	6 %	7 %	8 %
Triethylene Glycol	3.78577E-07 *	4.98126E-09 *	0.00140028 *	4.45095E-08 *	5.36447E-10 *
Water	0.0202823 *	62.1265 *	99.5993 *	98.9352 *	6.43079 *
Hydrogen Sulfide	8.64741E-05 *	0.0844538 *	2.97804E-06 *	0.0031137 *	0.0081939 *
Carbon Dioxide	0.000665931 *	1.63764 *	0 *	0.167715 *	0.243214 *
Nitrogen	7.76923E-06 *	0.00288214 *	0 *	9.86138E-05 *	0.000491643 *
Methane	0.0286232 *	4.69204 *	0 *	0.25378 *	1.0348 *
Ethane	0.408184 *	9.42158 *	0 *	0.50872 *	5.75166 *
Propane	2.35559 *	8.20882 *	0 *	0.108304 *	22.8825 *
Isobutane	1.50434 *	1.39064 *	0.00189384 *	0.00607062 *	10.133 *
n-Butane	4.94214 *	4.21448 *	0.0109833 *	0.0138208 *	23.0798 *
Isopentane	3.59187 *	0.860732 *	0.0125227 *	0.00101256 *	6.92333 *
n-Pentane	5.57412 *	0.416979 *	0.0206456 *	0.000290035 *	8.11482 *
i-C6	11.449 *	0.460747 *	0.0472562 *	0.000147325 *	6.68876 *
i-C7	21.8332 *	0.187683 *	0.0943193 *	1.48657E-05 *	4.12965 *
Octane	19.0573 *	0.00834904 *	0.0837315 *	6.2106E-08 *	0.76077 *
Nonane	10.6711 *	0.00141125 *	0.0470324 *	2.22496E-09 *	0.132216 *
Benzene	0.577245 *	2.25463 *	0.00278385 *	0.00129732 *	0.229681 *
Toluene	2.56447 *	3.00552 *	0.0115174 *	0.000399914 *	0.303203 *
Ethylbenzene	0.197582 *	0.0725788 *	0.000875889 *	2.97117E-06 *	0.00735056 *
o-Xylene	2.88861 *	0.827055 *	0.0128354 *	3.55502E-05 *	0.0833739 *
n-Hexane	7.58099 *	0.105652 *	0.0319542 *	1.82928E-05 *	3.05343 *
2,2,4-Trimethylpentane	0 *	0 *	0 *	0 *	0 *
Decanes Plus	4.75461 *	0.0196244 *	0.0209824 *	2.71794E-08 *	0.00897073 *
Decanes Plus Sat	0 *	0 *	0 *	0 *	0 *

\* User Specified Values  
? Extrapolated or Approximate Values

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	W & B	

Mass Fraction	4 %	5 %	6 %	7 %	8 %
Triethylene Glycol	5.76328E-07	2.53312E-08	0.0114566	3.68193E-07	1.39985E-09
Water	0.00370409	37.9004	97.7565	98.1799	2.01312
Hydrogen Sulfide	2.98758E-05	0.0974665	5.52956E-06	0.00584546	0.00485249
Carbon Dioxide	0.000297097	2.44057	0	0.406582	0.185994
Nitrogen	2.20631E-06	0.00273405	0	0.000152172	0.00023932
Methane	0.00465492	2.54893	0	0.224264	0.288463
Ethane	0.124423	9.59331	0	0.842615	3.00522
Propane	1.05298	12.2575	0	0.26307	17.5333
Isobutane	0.886362	2.73705	0.005997	0.019436	10.234
n-Butane	2.91193	8.29491	0.0347795	0.0442493	23.3098
Isopentane	2.62708	2.10292	0.0492239	0.00402421	8.67976
n-Pentane	4.07689	1.01875	0.0811531	0.00115268	10.1735
i-C6	10.0017	1.34453	0.221866	0.000699343	10.016
i-C7	22.1778	0.636833	0.514903	8.20525E-05	7.19041
Octane	22.0678	0.0322951	0.521089	3.90786E-07	1.51005
Nonane	13.8741	0.00612921	0.32864	1.57191E-08	0.29466
Benzene	0.457089	5.96373	0.0118471	0.00558206	0.311749
Toluene	2.39531	9.37748	0.0578152	0.00202973	0.485443
Ethylbenzene	0.212644	0.260926	0.00506616	1.73756E-05	0.0135602
o-Xylene	3.1088	2.97332	0.0742403	0.0002079	0.153807
n-Hexane	6.62266	0.308311	0.150023	8.6835E-05	4.5723
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	7.39373	0.10194	0.17536	2.29666E-07	0.0239121
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	4	5	6	7	8
Temperature	°F	84.5378	85.2658	86.1583	97.1838	86.1583
Pressure	psig	-1.2402	-11.9113	-8.35264	-11.998	-3.75267
Molecular Weight	lb/lbmol	98.6453	29.5308	18.3549	18.1539	57.5488
Mass Flow	lb/h	18445.3	0.455545	7775.9	0.150634	1.4932
Std Vapor Volumetric Flow	MMSCFD	1.703	0.000140495	3.85837	7.55716E-05	0.000236312
Std Liquid Volumetric Flow	sgpm	53.102	0.00136079	15.691	0.000308492	0.00509299
API Gravity		70.6307		11.3231		
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	4976.39	892.096	20.689	13.7896	2904.15

**Remarks**

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	W & B	

**Connections**

	10	12		
From Block	--	--		
To Block	MIX-101	MIX-102		

**Stream Composition**

Mass Flow	10 lb/h	12 lb/h		
Triethylene Glycol	4.16693E-14 *	1.88962E-11 *		
Water	1.22529E-05 *	0.0282723 *		
Hydrogen Sulfide	7.4329E-05 *	7.27065E-05 *		
Carbon Dioxide	0.00346411 *	0.00182058 *		
Nitrogen	1.05733E-05 *	2.0395E-06 *		
Methane	0.0334724 *	0.00190141 *		
Ethane	0.702683 *	0.00715627 *		
Propane	1.17968 *	0.00914364 *		
Isobutane	0.340856 *	0.00204174 *		
n-Butane	0.755797 *	0.00618771 *		
Isopentane	0.258797 *	0.0015687 *		
n-Pentane	0.297814 *	0.000759953 *		
i-C6	0.300001 *	0.00100297 *		
i-C7	0.20577 *	0.000475055 *		
Octane	0.0397186 *	2.4091E-05 *		
Nonane	0.0066606 *	4.57217E-06 *		
Benzene	0.00613748 *	0.00444873 *		
Toluene	0.00954893 *	0.00699526 *		
Ethylbenzene	0.000280807 *	0.000194641 *		
o-Xylene	0.00286142 *	0.00221799 *		
n-Hexane	0.141729 *	0.000229989 *		
2,2,4-Trimethylpentane	0 *	0 *		
Decanes Plus	0.000494819 *	7.60439E-05 *		
Decanes Plus Sat	0 *	0 *		

Mole Fraction	10 %	12 %		
Triethylene Glycol	3.20162E-13 *	4.98126E-09 *		
Water	0.000784774 *	62.1265 *		
Hydrogen Sulfide	0.00251648 *	0.0844538 *		
Carbon Dioxide	0.0908218 *	1.63764 *		
Nitrogen	0.000435503 *	0.00288214 *		
Methane	2.40747 *	4.69204 *		
Ethane	26.964 *	9.42158 *		
Propane	30.8684 *	8.20882 *		
Isobutane	6.76666 *	1.39064 *		
n-Butane	15.0041 *	4.21448 *		
Isopentane	4.13881 *	0.860732 *		
n-Pentane	4.76279 *	0.416979 *		
i-C6	4.01684 *	0.460747 *		
i-C7	2.36947 *	0.187683 *		
Octane	0.401204 *	0.00834904 *		
Nonane	0.0599217 *	0.00141125 *		
Benzene	0.0906605 *	2.25463 *		
Toluene	0.11958 *	3.00552 *		
Ethylbenzene	0.00305191 *	0.0725788 *		
o-Xylene	0.031099 *	0.827055 *		
n-Hexane	1.89768 *	0.105652 *		
2,2,4-Trimethylpentane	0 *	0 *		
Decanes Plus	0.00372192 *	0.0196244 *		
Decanes Plus Sat	0 *	0 *		

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	W & B	

Mass Fraction	10 %	12 %			
Triethylene Glycol	9.7225E-13	2.53312E-08			
Water	0.000285892	37.9004			
Hydrogen Sulfide	0.00173428	0.0974665			
Carbon Dioxide	0.0808264	2.44057			
Nitrogen	0.000246702	0.00273405			
Methane	0.780995	2.54893			
Ethane	16.3954	9.59331			
Propane	27.5249	12.2575			
Isobutane	7.95303	2.73705			
n-Butane	17.6347	8.29491			
Isopentane	6.03838	2.10292			
n-Pentane	6.94875	1.01875			
i-C6	6.99978	1.34453			
i-C7	4.80112	0.636833			
Octane	0.926735	0.0322951			
Nonane	0.155409	0.00612921			
Benzene	0.143203	5.96373			
Toluene	0.222801	9.37748			
Ethylbenzene	0.00655193	0.260926			
o-Xylene	0.0667643	2.97332			
n-Hexane	3.30691	0.308311			
2,2,4-Trimethylpentane	0	0			
Decanes Plus	0.0115454	0.10194			
Decanes Plus Sat	0	0			

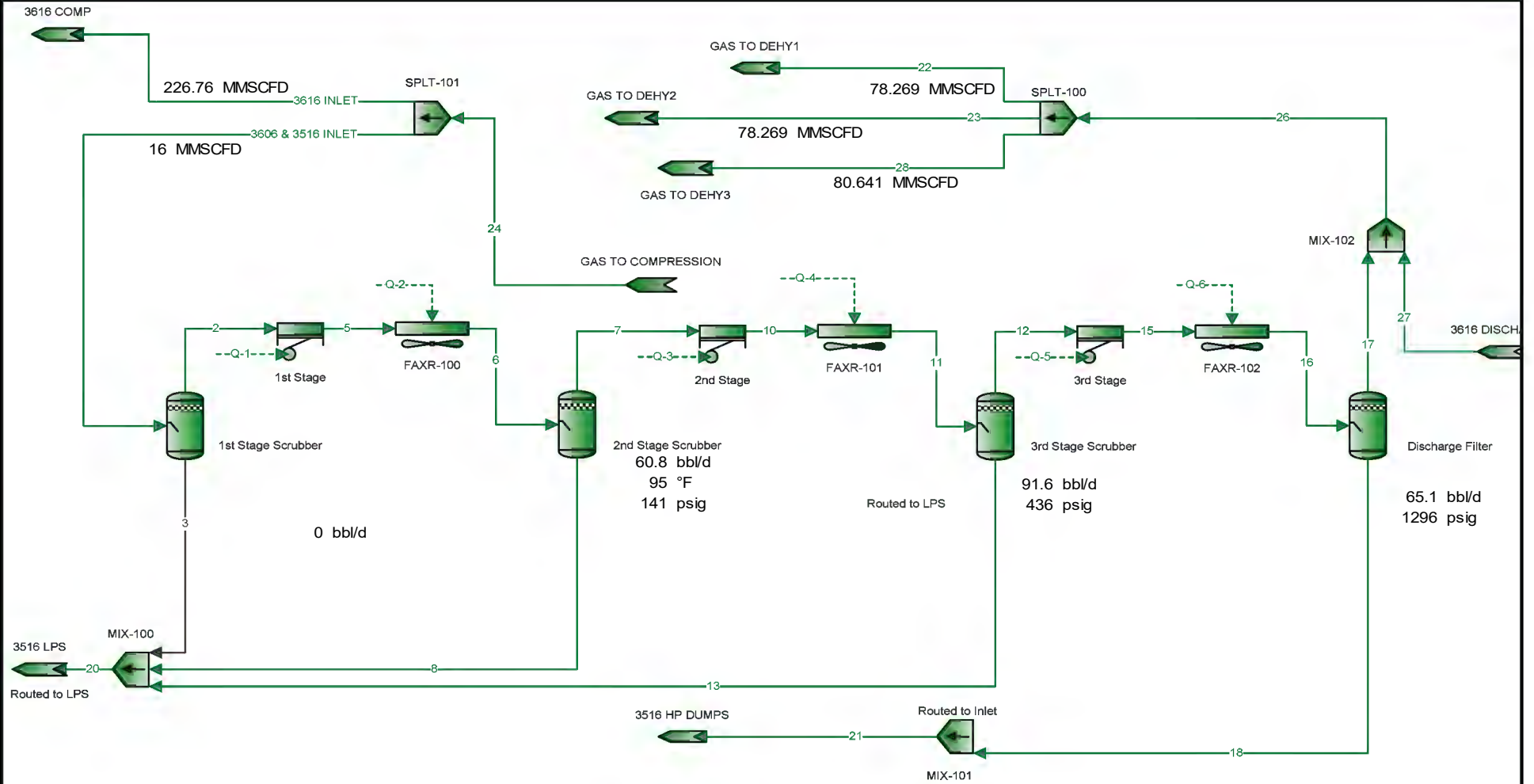
**Stream Properties**

Property	Units	10	12			
Temperature	°F	84.5378	85.2658			
Pressure	psig	3.04322	-11.9113			
Molecular Weight	lb/lbmol	49.452	29.5308			
Mass Flow	lb/h	4.28586	0.0745964			
Std Vapor Volumetric Flow	MMSCFD	0.000789331	2.30064E-05			
Std Liquid Volumetric Flow	sgpm	0.0165079	0.000222831			
API Gravity						
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	2574.72	892.096			

**Remarks**

## 3516s Plant Schematic

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	3516s	



Names	Units	1st Stage	2nd Stage	3rd Stage
Power	hp	1380.8	1326.2	1104.7
Compression Ratio		2.8253	2.9431	2.9248

\* User Specified Values  
? Extrapolated or Approximate Values

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	3516s	

**Connections**

	2	3	5	6	7
From Block	1st Stage Scrubber	1st Stage Scrubber	1st Stage	FAXR-100	2nd Stage Scrubber
To Block	1st Stage	MIX-100	FAXR-100	2nd Stage Scrubber	2nd Stage

**Stream Composition**

Mass Flow	2 lb/h	3 lb/h	5 lb/h	6 lb/h	7 lb/h
Triethylene Glycol	1.12775E-07	0	1.12775E-07	1.12775E-07	3.73795E-12
Water	295.61	0	295.61	295.61	172.76
Hydrogen Sulfide	0.600904	0	0.600904	0.600904	0.600203
Carbon Dioxide	116.351	0	116.351	116.351	116.301
Nitrogen	312.284	0	312.284	312.284	312.269
Methane	21531.3	0	21531.3	21531.3	21527.8
Ethane	5913.25	0	5913.25	5913.25	5907.96
Propane	3947.19	0	3947.19	3947.19	3936.07
Isobutane	914.867	0	914.867	914.867	908.923
n-Butane	1903.32	0	1903.32	1903.32	1885.81
Isopentane	695.608	0	695.608	695.608	681.281
n-Pentane	827.101	0	827.101	827.101	805.143
i-C6	908.59	0	908.59	908.59	853.762
i-C7	849.141	0	849.141	849.141	720.765
Octane	287.478	0	287.478	287.478	166.939
Nonane	80.1973	0	80.1973	80.1973	25.8592
Benzene	21.1994	0	21.1994	21.1994	19.442
Toluene	54.587	0	54.587	54.587	42.743
Ethylbenzene	2.48595	0	2.48595	2.48595	1.39487
o-Xylene	30.5433	0	30.5433	30.5433	15.3531
n-Hexane	452.299	0	452.299	452.299	415.213
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	9.20128	0	9.20128	9.20128	0.730953
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	2 %	3 %	5 %	6 %	7 %
Triethylene Glycol	4.2747E-11		4.2747E-11	4.2747E-11	1.42706E-15
Water	0.934035		0.934035	0.934035	0.549798
Hydrogen Sulfide	0.00100364		0.00100364	0.00100364	0.00100969
Carbon Dioxide	0.15049		0.15049	0.15049	0.151509
Nitrogen	0.634554		0.634554	0.634554	0.639093
Methane	76.3985		76.3985	76.3985	76.9362
Ethane	11.1942		11.1942	11.1942	11.2647
Propane	5.09539		5.09539	5.09539	5.11762
Isobutane	0.895985		0.895985	0.895985	0.896574
n-Butane	1.86403		1.86403	1.86403	1.86018
Isopentane	0.548808		0.548808	0.548808	0.541375
n-Pentane	0.652551		0.652551	0.652551	0.639801
i-C6	0.600163		0.600163	0.600163	0.568008
i-C7	0.482379		0.482379	0.482379	0.4124
Octane	0.143257		0.143257	0.143257	0.0837886
Nonane	0.0355935		0.0355935	0.0355935	0.0115596
Benzene	0.0154487		0.0154487	0.0154487	0.0142701
Toluene	0.0337236		0.0337236	0.0337236	0.0265965
Ethylbenzene	0.00133289		0.00133289	0.00133289	0.000753273
o-Xylene	0.0163764		0.0163764	0.0163764	0.00829117
n-Hexane	0.298763		0.298763	0.298763	0.276241
2,2,4-Trimethylpentane	0		0	0	0
Decanes Plus	0.00341435		0.00341435	0.00341435	0.00027319
Decanes Plus Sat	0		0	0	0

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	3516s	

Mass Fraction	2 %	3 %	5 %	6 %	7 %
Triethylene Glycol	2.88035E-10		2.88035E-10	2.88035E-10	9.70465E-15
Water	0.755008		0.755008	0.755008	0.448527
Hydrogen Sulfide	0.00153475		0.00153475	0.00153475	0.00155827
Carbon Dioxide	0.297168		0.297168	0.297168	0.301945
Nitrogen	0.797594		0.797594	0.797594	0.810726
Methane	54.9925		54.9925	54.9925	55.8916
Ethane	15.1028		15.1028	15.1028	15.3385
Propane	10.0814		10.0814	10.0814	10.219
Isobutane	2.33663		2.33663	2.33663	2.35979
n-Butane	4.8612		4.8612	4.8612	4.89601
Isopentane	1.77663		1.77663	1.77663	1.76877
n-Pentane	2.11247		2.11247	2.11247	2.09035
i-C6	2.3206		2.3206	2.3206	2.21658
i-C7	2.16876		2.16876	2.16876	1.87128
Octane	0.734238		0.734238	0.734238	0.433415
Nonane	0.204829		0.204829	0.204829	0.0671368
Benzene	0.0541447		0.0541447	0.0541447	0.0504763
Toluene	0.139419		0.139419	0.139419	0.110971
Ethylbenzene	0.00634928		0.00634928	0.00634928	0.00362142
o-Xylene	0.0780096		0.0780096	0.0780096	0.0398604
n-Hexane	1.1552		1.1552	1.1552	1.07799
2,2,4-Trimethylpentane	0		0	0	0
Decanes Plus	0.0235007		0.0235007	0.0235007	0.00189773
Decanes Plus Sat	0		0	0	0

**Stream Properties**

Property	Units	2	3	5	6	7
Temperature	°F	82.7421		260 *	95 *	95
Pressure	psig	43	43	145 *	141	141
Molecular Weight	lb/lbmol	22.2871		22.2871	22.2871	22.0829
Mass Flow	lb/h	39153.2	0	39153.2	39153.2	38517.2
Std Vapor Volumetric Flow	MMSCFD	16	0	16	16	15.8856
Std Liquid Volumetric Flow	sgpm	216.451	0	216.451	216.451	214.678
API Gravity						
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	1199.1		1199.1	1199.1	1192.84

**Remarks**



**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	3516s	

**Connections**

	8	10	11	12	13
From Block	2nd Stage Scrubber	2nd Stage	FAXR-101	3rd Stage Scrubber	3rd Stage Scrubber
To Block	MIX-100	FAXR-101	3rd Stage Scrubber	3rd Stage	MIX-100

**Stream Composition**

Mass Flow	8 lb/h	10 lb/h	11 lb/h	12 lb/h	13 lb/h
Triethylene Glycol	1.12771E-07	3.73795E-12	3.73795E-12	5.2166E-16	3.73743E-12
Water	122.85	172.76	172.76	97.7642	74.9958
Hydrogen Sulfide	0.000701693	0.600203	0.600203	0.597351	0.00285155
Carbon Dioxide	0.050261	116.301	116.301	116.066	0.234735
Nitrogen	0.0151561	312.269	312.269	312.171	0.0978438
Methane	3.49482	21527.8	21527.8	21508.6	19.2069
Ethane	5.2951	5907.96	5907.96	5884.54	23.4154
Propane	11.1197	3936.07	3936.07	3894.62	41.454
Isobutane	5.94401	908.923	908.923	889.3	19.6233
n-Butane	17.5122	1885.81	1885.81	1830.42	55.3813
Isopentane	14.3266	681.281	681.281	643.28	38.0013
n-Pentane	21.9583	805.143	805.143	749.572	55.571
i-C6	54.8279	853.762	853.762	736.758	117.004
i-C7	128.376	720.765	720.765	520.903	199.863
Octane	120.539	166.939	166.939	74.164	92.7753
Nonane	54.3381	25.8592	25.8592	6.14996	19.7092
Benzene	1.75736	19.442	19.442	16.0921	3.34997
Toluene	11.844	42.743	42.743	27.4655	15.2775
Ethylbenzene	1.09108	1.39487	1.39487	0.591691	0.803176
o-Xylene	15.1902	15.3531	15.3531	5.75735	9.59575
n-Hexane	37.0857	415.213	415.213	343.253	71.9601
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	8.47032	0.730953	0.730953	0.0493191	0.681634
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	8 %	10 %	11 %	12 %	13 %
Triethylene Glycol	5.97893E-09	1.42706E-15	1.42706E-15	2.00902E-19	1.64387E-13
Water	54.2939	0.549798	0.549798	0.313853	27.4967
Hydrogen Sulfide	0.000163928	0.00100969	0.00100969	0.00101369	0.000552656
Carbon Dioxide	0.00909289	0.151509	0.151509	0.152527	0.0352304
Nitrogen	0.00430764	0.639093	0.639093	0.644486	0.0230703
Methane	1.73449	76.9362	76.9362	77.5406	7.90808
Ethane	1.40208	11.2647	11.2647	11.3183	5.14359
Propane	2.00777	5.11762	5.11762	5.10806	6.20949
Isobutane	0.814244	0.896574	0.896574	0.884898	2.23005
n-Butane	2.39892	1.86018	1.86018	1.82136	6.2937
Isopentane	1.58099	0.541375	0.541375	0.515653	3.479
n-Pentane	2.42318	0.639801	0.639801	0.600858	5.0875
i-C6	5.06565	0.568008	0.568008	0.494457	8.96814
i-C7	10.2005	0.4124	0.4124	0.300654	13.1747
Octane	8.40174	0.0837886	0.0837886	0.0375496	5.36467
Nonane	3.37324	0.0115596	0.0115596	0.00277322	1.01503
Benzene	0.179127	0.0142701	0.0142701	0.0119147	0.283276
Toluene	1.02347	0.0265965	0.0265965	0.0172399	1.09521
Ethylbenzene	0.0818264	0.000753273	0.000753273	0.00032233	0.0499706
o-Xylene	1.1392	0.00829117	0.00829117	0.00313638	0.597012
n-Hexane	3.42642	0.276241	0.276241	0.230366	5.51562
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.439634	0.00027319	0.00027319	1.85942E-05	0.0293502
Decanes Plus Sat	0	0	0	0	0

\* 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:
Location:	Spartan Compressor Station	
Flowsheet:	3516s	

Mass Fraction	8 %	10 %	11 %	12 %	13 %
Triethylene Glycol	1.77289E-08	9.70465E-15	9.70465E-15	1.38525E-18	4.35089E-13
Water	19.3134	0.448527	0.448527	0.25961	8.73056
Hydrogen Sulfide	0.000110314	0.00155827	0.00155827	0.00158625	0.00033196
Carbon Dioxide	0.00790161	0.301945	0.301945	0.30821	0.0273265
Nitrogen	0.00238271	0.810726	0.810726	0.82896	0.0113904
Methane	0.549426	55.8916	55.8916	57.1155	2.23595
Ethane	0.832451	15.3385	15.3385	15.6262	2.72587
Propane	1.74814	10.219	10.219	10.342	4.82582
Isobutane	0.934467	2.35979	2.35979	2.36151	2.28442
n-Butane	2.75312	4.89601	4.89601	4.86063	6.44715
Isopentane	2.2523	1.76877	1.76877	1.70821	4.42388
n-Pentane	3.45209	2.09035	2.09035	1.99046	6.46924
i-C6	8.61957	2.21658	2.21658	1.95644	13.6209
i-C7	20.1821	1.87128	1.87128	1.38324	23.2668
Octane	18.9501	0.433415	0.433415	0.19694	10.8003
Nonane	8.54258	0.0671368	0.0671368	0.016331	2.29443
Benzene	0.276277	0.0504763	0.0504763	0.042732	0.389983
Toluene	1.86202	0.110971	0.110971	0.0729338	1.77851
Ethylbenzene	0.171531	0.00362142	0.00362142	0.00157122	0.0935009
o-Xylene	2.38807	0.0398604	0.0398604	0.0152884	1.11708
n-Hexane	5.8303	1.07799	1.07799	0.911497	8.37716
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	1.33163	0.00189773	0.00189773	0.000130965	0.0793517
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	8	10	11	12	13
Temperature	°F	95	272 *	110 *	110	110
Pressure	psig	141	440 *	436	436	436
Molecular Weight	lb/lbmol	50.6445	22.0829	22.0829	21.7794	56.7388
Mass Flow	lb/h	636.086	38517.2	38517.2	37658.2	859.004
Std Vapor Volumetric Flow	MMSCFD	0.11439	15.8856	15.8856	15.7477	0.137886
Std Liquid Volumetric Flow	sgpm	1.77343	214.678	214.678	212.005	2.67221
API Gravity		63.2304				83.0526
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	2068.6	1192.84	1192.84	1180.14	2643.01

**Remarks**

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	3516s	

**Connections**

	15	16	17	18	20
From Block	3rd Stage	FAXR-102	Discharge Filter	Discharge Filter	MIX-100
To Block	FAXR-102	Discharge Filter	MIX-102	MIX-101	3516 LPS

**Stream Composition**

Mass Flow	15 lb/h	16 lb/h	17 lb/h	18 lb/h	20 lb/h
Triethylene Glycol	5.2166E-16	5.2166E-16	1.85296E-19	5.21475E-16	1.12775E-07
Water	97.7642	97.7642	30.5019	67.2624	197.846
Hydrogen Sulfide	0.597351	0.597351	0.592608	0.00474335	0.00355324
Carbon Dioxide	116.066	116.066	115.558	0.508278	0.284996
Nitrogen	312.171	312.171	311.786	0.385382	0.113
Methane	21508.6	21508.6	21454.4	54.2089	22.7017
Ethane	5884.54	5884.54	5843.77	40.7699	28.7105
Propane	3894.62	3894.62	3842.54	52.078	52.5737
Isobutane	889.3	889.3	870.234	19.0657	25.5673
n-Butane	1830.42	1830.42	1781.59	48.8384	72.8935
Isopentane	643.28	643.28	617.551	25.729	52.3279
n-Pentane	749.572	749.572	714.4	35.1725	77.5293
i-C6	736.758	736.758	680.316	56.4422	171.832
i-C7	520.903	520.903	453.91	66.9925	328.238
Octane	74.164	74.164	56.2098	17.9542	213.314
Nonane	6.14996	6.14996	3.78416	2.3658	74.0474
Benzene	16.0921	16.0921	14.6157	1.47641	5.10733
Toluene	27.4655	27.4655	22.8805	4.58498	27.1215
Ethylbenzene	0.591691	0.591691	0.435601	0.156089	1.89426
o-Xylene	5.75735	5.75735	4.06924	1.68811	24.786
n-Hexane	343.253	343.253	312.02	31.2331	109.046
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.0493191	0.0493191	0.0188237	0.0304954	9.15196
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	15 %	16 %	17 %	18 %	20 %
Triethylene Glycol	2.00902E-19	2.00902E-19	7.19281E-23	2.54669E-17	2.71113E-09
Water	0.313853	0.313853	0.0986985	27.3821	39.6474
Hydrogen Sulfide	0.00101369	0.00101369	0.00101364	0.00102073	0.000376394
Carbon Dioxide	0.152527	0.152527	0.153066	0.0847013	0.0233788
Nitrogen	0.644486	0.644486	0.648807	0.100893	0.0145627
Methane	77.5406	77.5406	77.9599	24.7819	5.10878
Ethane	11.3183	11.3183	11.3292	9.94387	3.44707
Propane	5.10806	5.10806	5.07982	8.66151	4.3043
Isobutane	0.884898	0.884898	0.872809	2.40572	1.58808
n-Butane	1.82136	1.82136	1.78686	6.16247	4.52768
Isopentane	0.515653	0.515653	0.498964	2.61535	2.61838
n-Pentane	0.600858	0.600858	0.577215	3.57528	3.87941
i-C6	0.494457	0.494457	0.460207	4.80348	7.19863
i-C7	0.300654	0.300654	0.26407	4.90326	11.8261
Octane	0.0375496	0.0375496	0.0286855	1.15273	6.74177
Nonane	0.00277322	0.00277322	0.00171997	0.135282	2.08432
Benzene	0.0119147	0.0119147	0.0109075	0.13862	0.236051
Toluene	0.0172399	0.0172399	0.0144761	0.364948	1.06268
Ethylbenzene	0.00032233	0.00032233	0.000239185	0.0107827	0.0644151
o-Xylene	0.00313638	0.00313638	0.00223438	0.116615	0.842856
n-Hexane	0.230366	0.230366	0.211069	2.65808	4.56831
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	1.85942E-05	1.85942E-05	7.15329E-06	0.00145795	0.215386
Decanes Plus Sat	0	0	0	0	0

\* 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:
Location:	Spartan Compressor Station	
Flowsheet:	3516s	

Mass Fraction	15 %	16 %	17 %	18 %	20 %
Triethylene Glycol	1.38525E-18	1.38525E-18	4.99029E-22	9.89616E-17	7.54302E-09
Water	0.25961	0.25961	0.0821461	12.7645	13.233
Hydrogen Sulfide	0.00158625	0.00158625	0.00159598	0.000900156	0.000237661
Carbon Dioxide	0.30821	0.30821	0.311215	0.0964572	0.0190622
Nitrogen	0.82896	0.82896	0.839686	0.0731348	0.00755807
Methane	57.1155	57.1155	57.7801	10.2873	1.51842
Ethane	15.6262	15.6262	15.7382	7.737	1.92032
Propane	10.342	10.342	10.3485	9.88296	3.51642
Isobutane	2.36151	2.36151	2.34367	3.61814	1.71008
n-Butane	4.86063	4.86063	4.79808	9.26818	4.87552
Isopentane	1.70821	1.70821	1.66316	4.88266	3.49998
n-Pentane	1.99046	1.99046	1.92399	6.67477	5.18559
i-C6	1.95644	1.95644	1.83219	10.7112	11.4931
i-C7	1.38324	1.38324	1.22245	12.7133	21.9544
Octane	0.19694	0.19694	0.151382	3.40721	14.2676
Nonane	0.016331	0.016331	0.0101913	0.448964	4.9527
Benzene	0.042732	0.042732	0.0393622	0.280182	0.341607
Toluene	0.0729338	0.0729338	0.0616208	0.870102	1.81404
Ethylbenzene	0.00157122	0.00157122	0.00117314	0.0296215	0.126699
o-Xylene	0.0152884	0.0152884	0.0109591	0.320357	1.65782
n-Hexane	0.911497	0.911497	0.840317	5.92718	7.2936
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.000130965	0.000130965	5.06952E-05	0.00578718	0.612134
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	15	16	17	18	20
Temperature	°F	275 *	100 *	100	100	99.3328
Pressure	psig	1300 *	1296	1296	1296	141
Molecular Weight	lb/lbmol	21.7794	21.7794	21.6453	38.6458	53.9755
Mass Flow	lb/h	37658.2	37658.2	37131.2	526.947	1495.09
Std Vapor Volumetric Flow	MMSCFD	15.7477	15.7477	15.6235	0.124185	0.252276
Std Liquid Volumetric Flow	sgpm	212.005	212.005	210.108	1.89766	4.44564
API Gravity					118.592	
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	1180.14	1180.14	1175.59	1752.21	2382.55

Remarks

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan 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**

Mass Flow	21 lb/h	22 lb/h	23 lb/h	24 lb/h	26 lb/h
Triethylene Glycol	5.21475E-16	7.94199E-20	7.94199E-20	1.7111E-06	2.40666E-19
Water	67.2624	150.788	150.788	4485.2	456.934
Hydrogen Sulfide	0.00474335	2.96863	2.96863	9.11733	8.99583
Carbon Dioxide	0.508278	578.957	578.957	1765.36	1754.42
Nitrogen	0.385382	1561.67	1561.67	4738.19	4732.34
Methane	54.2089	107479	107479	326688	325695
Ethane	40.7699	29276.4	29276.4	89719.9	88716.4
Propane	52.078	19239.4	19239.4	59889.5	58301.3
Isobutane	19.0657	4352.7	4352.7	13881	13190
n-Butane	48.8384	8905.53	8905.53	28878.4	26986.5
Isopentane	25.729	3082.57	3082.57	10554.2	9341.11
n-Pentane	35.1725	3565.61	3565.61	12549.3	10804.9
i-C6	56.4422	3402.75	3402.75	13785.7	10311.4
i-C7	66.9925	2326.44	2326.44	12883.7	7049.83
Octane	17.9542	334.579	334.579	4361.81	1013.88
Nonane	2.3658	29.3922	29.3922	1216.81	89.0673
Benzene	1.47641	73.3127	73.3127	321.652	222.16
Toluene	4.58498	119.695	119.695	828.232	362.713
Ethylbenzene	0.156089	2.60037	2.60037	37.7185	7.8799
o-Xylene	1.68811	25.3838	25.3838	463.424	76.9207
n-Hexane	31.2331	1569.13	1569.13	6862.59	4754.95
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.0304954	0.260195	0.260195	139.608	0.788469
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	21 %	22 %	23 %	24 %	26 %
Triethylene Glycol	2.54669E-17	6.15391E-24	6.15391E-24	4.2747E-11	6.15391E-24
Water	27.3821	0.0973958	0.0973958	0.934035	0.0973958
Hydrogen Sulfide	0.00102073	0.00101358	0.00101358	0.00100364	0.00101358
Carbon Dioxide	0.0847013	0.153078	0.153078	0.15049	0.153078
Nitrogen	0.100893	0.648691	0.648691	0.634554	0.648691
Methane	24.7819	77.9593	77.9593	76.3985	77.9593
Ethane	9.94387	11.3295	11.3295	11.1942	11.3295
Propane	8.66151	5.07704	5.07704	5.09539	5.07704
Isobutane	2.40572	0.871425	0.871425	0.895985	0.871425
n-Butane	6.16247	1.78292	1.78292	1.86403	1.78292
Isopentane	2.61535	0.497161	0.497161	0.548808	0.497161
n-Pentane	3.57528	0.575066	0.575066	0.652551	0.575066
i-C6	4.80348	0.459474	0.459474	0.600163	0.459474
i-C7	4.90326	0.270165	0.270165	0.482379	0.270165
Octane	1.15273	0.034083	0.034083	0.143257	0.034083
Nonane	0.135282	0.00266668	0.00266668	0.0355935	0.00266668
Benzene	0.13862	0.0109213	0.0109213	0.0154487	0.0109213
Toluene	0.364948	0.0151165	0.0151165	0.0337236	0.0151165
Ethylbenzene	0.0107827	0.000285015	0.000285015	0.00133289	0.000285015
o-Xylene	0.116615	0.00278221	0.00278221	0.0163764	0.00278221
n-Hexane	2.65808	0.21188	0.21188	0.298763	0.21188
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.00145795	1.97373E-05	1.97373E-05	0.00341435	1.97373E-05
Decanes Plus Sat	0	0	0	0	0

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? Extrapolated or Approximate Values

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**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	3516s	

Mass Fraction	21 %	22 %	23 %	24 %	26 %
Triethylene Glycol	9.89616E-17	4.26806E-23	4.26806E-23	2.88035E-10	4.26806E-23
Water	12.7645	0.0810343	0.0810343	0.755008	0.0810343
Hydrogen Sulfide	0.000900156	0.00159535	0.00159535	0.00153475	0.00159535
Carbon Dioxide	0.0964572	0.311134	0.311134	0.297168	0.311134
Nitrogen	0.0731348	0.839251	0.839251	0.797594	0.839251
Methane	10.2873	57.7599	57.7599	54.9925	57.7599
Ethane	7.737	15.7333	15.7333	15.1028	15.7333
Propane	9.88296	10.3394	10.3394	10.0814	10.3394
Isobutane	3.61814	2.33916	2.33916	2.33663	2.33916
n-Butane	9.26818	4.78587	4.78587	4.8612	4.78587
Isopentane	4.88266	1.65659	1.65659	1.77663	1.65659
n-Pentane	6.67477	1.91617	1.91617	2.11247	1.91617
i-C6	10.7112	1.82865	1.82865	2.3206	1.82865
i-C7	12.7133	1.25024	1.25024	2.16876	1.25024
Octane	3.40721	0.179804	0.179804	0.734238	0.179804
Nonane	0.448964	0.0157955	0.0157955	0.204829	0.0157955
Benzene	0.280182	0.0393986	0.0393986	0.0541447	0.0393986
Toluene	0.870102	0.0643249	0.0643249	0.139419	0.0643249
Ethylbenzene	0.0296215	0.00139745	0.00139745	0.00634928	0.00139745
o-Xylene	0.320357	0.0136414	0.0136414	0.0780096	0.0136414
n-Hexane	5.92718	0.843259	0.843259	1.1552	0.843259
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.00578718	0.00013983	0.00013983	0.0235007	0.00013983
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	21	22	23	24	26
Temperature	°F	100	98.8743	98.8743	83.1825	98.8743
Pressure	psig	1296	1296	1296	48	1296
Molecular Weight	lb/lbmol	38.6458	21.6527	21.6527	22.2871	21.6527
Mass Flow	lb/h	526.947	186080	186080	594060	563877
Std Vapor Volumetric Flow	MMSCFD	0.124185	78.2692	78.2692	242.763	237.18
Std Liquid Volumetric Flow	sgpm	1.89766	1052.72	1052.72	3284.14	3190.05
API Gravity		118.592				
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	1752.21	1175.97	1175.97	1199.1	1175.97

**Remarks**

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	3516s	

**Connections**

	27	28	3606 & 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**

	27	28	3606 & 3516 INLET	3616 INLET
<b>Mass Flow</b>	<b>lb/h</b>	<b>lb/h</b>	<b>lb/h</b>	<b>lb/h</b>
Triethylene Glycol	5.53706E-20	8.18265E-20	1.12775E-07	1.59832E-06
Water	426.432	155.358	295.61	4189.59
Hydrogen Sulfide	8.40323	3.05858	0.600904	8.51643
Carbon Dioxide	1638.86	596.502	116.351	1649.01
Nitrogen	4420.56	1609	312.284	4425.9
Methane	304241	110736	21531.3	305157
Ethane	82872.7	30163.6	5913.25	83806.7
Propane	54458.7	19822.4	3947.19	55942.3
Isobutane	12319.8	4484.6	914.867	12966.1
n-Butane	25204.9	9175.4	1903.32	26975.1
Isopentane	8723.56	3175.98	695.608	9858.63
n-Pentane	10090.5	3673.65	827.101	11722.2
i-C6	9631.05	3505.86	908.59	12877.2
i-C7	6595.92	2396.94	849.141	12034.6
Octane	957.667	344.718	287.478	4074.34
Nonane	85.2832	30.2829	80.1973	1136.61
Benzene	207.544	75.5343	21.1994	300.453
Toluene	339.833	123.323	54.587	773.645
Ethylbenzene	7.4443	2.67917	2.48595	35.2326
o-Xylene	72.8515	26.153	30.5433	432.881
n-Hexane	4442.93	1616.68	452.299	6410.29
2,2,4-Trimethylpentane	0	0	0	0
Decanes Plus	0.769645	0.26808	9.20128	130.407
Decanes Plus Sat	0	0	0	0

	27	28	3606 & 3516 INLET	3616 INLET
<b>Mole Fraction</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>
Triethylene Glycol	1.51569E-24	6.15391E-24	4.2747E-11	4.2747E-11
Water	0.097304	0.0973958	0.934035	0.934035
Hydrogen Sulfide	0.00101358	0.00101358	0.00100364	0.00100364
Carbon Dioxide	0.153079	0.153078	0.15049	0.15049
Nitrogen	0.648683	0.648691	0.634554	0.634554
Methane	77.9592	77.9593	76.3985	76.3985
Ethane	11.3296	11.3295	11.1942	11.1942
Propane	5.07684	5.07704	5.09539	5.09539
Isobutane	0.871328	0.871425	0.895985	0.895985
n-Butane	1.78264	1.78292	1.86403	1.86403
Isopentane	0.497034	0.497161	0.548808	0.548808
n-Pentane	0.574915	0.575066	0.652551	0.652551
i-C6	0.459422	0.459474	0.600163	0.600163
i-C7	0.270595	0.270165	0.482379	0.482379
Octane	0.0344636	0.034083	0.143257	0.143257
Nonane	0.00273344	0.00266668	0.0355935	0.0355935
Benzene	0.0109223	0.0109213	0.0154487	0.0154487
Toluene	0.0151616	0.0151165	0.0337236	0.0337236
Ethylbenzene	0.000288246	0.000285015	0.00133289	0.00133289
o-Xylene	0.00282084	0.00278221	0.0163764	0.0163764
n-Hexane	0.211937	0.21188	0.298763	0.298763
2,2,4-Trimethylpentane	0	0	0	0

\* 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:
Location:	Spartan Compressor Station	
Flowsheet:	3516s	

	27	28	3606 & 3516 INLET	3616 INLET
Mole Fraction	%	%	%	%
Decanes Plus	2.06247E-05	1.97373E-05	0.00341435	0.00341435
Decanes Plus Sat	0	0	0	0

	27	28	3606 & 3516 INLET	3616 INLET
Mass Fraction	%	%	%	%
Triethylene Glycol	1.05118E-23	4.26806E-23	2.88035E-10	2.88035E-10
Water	0.080956	0.0810343	0.755008	0.755008
Hydrogen Sulfide	0.00159531	0.00159535	0.00153475	0.00153475
Carbon Dioxide	0.311129	0.311134	0.297168	0.297168
Nitrogen	0.83922	0.839251	0.797594	0.797594
Methane	57.7585	57.7599	54.9925	54.9925
Ethane	15.7329	15.7333	15.1028	15.1028
Propane	10.3387	10.3394	10.0814	10.0814
Isobutane	2.33884	2.33916	2.33663	2.33663
n-Butane	4.78501	4.78587	4.8612	4.8612
Isopentane	1.65612	1.65659	1.77663	1.77663
n-Pentane	1.91562	1.91617	2.11247	2.11247
i-C6	1.8284	1.82865	2.3206	2.3206
i-C7	1.2522	1.25024	2.16876	2.16876
Octane	0.181808	0.179804	0.734238	0.734238
Nonane	0.0161906	0.0157955	0.204829	0.204829
Benzene	0.0394012	0.0393986	0.0541447	0.0541447
Toluene	0.0645155	0.0643249	0.139419	0.139419
Ethylbenzene	0.00141326	0.00139745	0.00634928	0.00634928
o-Xylene	0.0138305	0.0136414	0.0780096	0.0780096
n-Hexane	0.843466	0.843259	1.1552	1.1552
2,2,4-Trimethylpentane	0	0	0	0
Decanes Plus	0.000146113	0.00013983	0.0235007	0.0235007
Decanes Plus Sat	0	0	0	0

**Stream Properties**

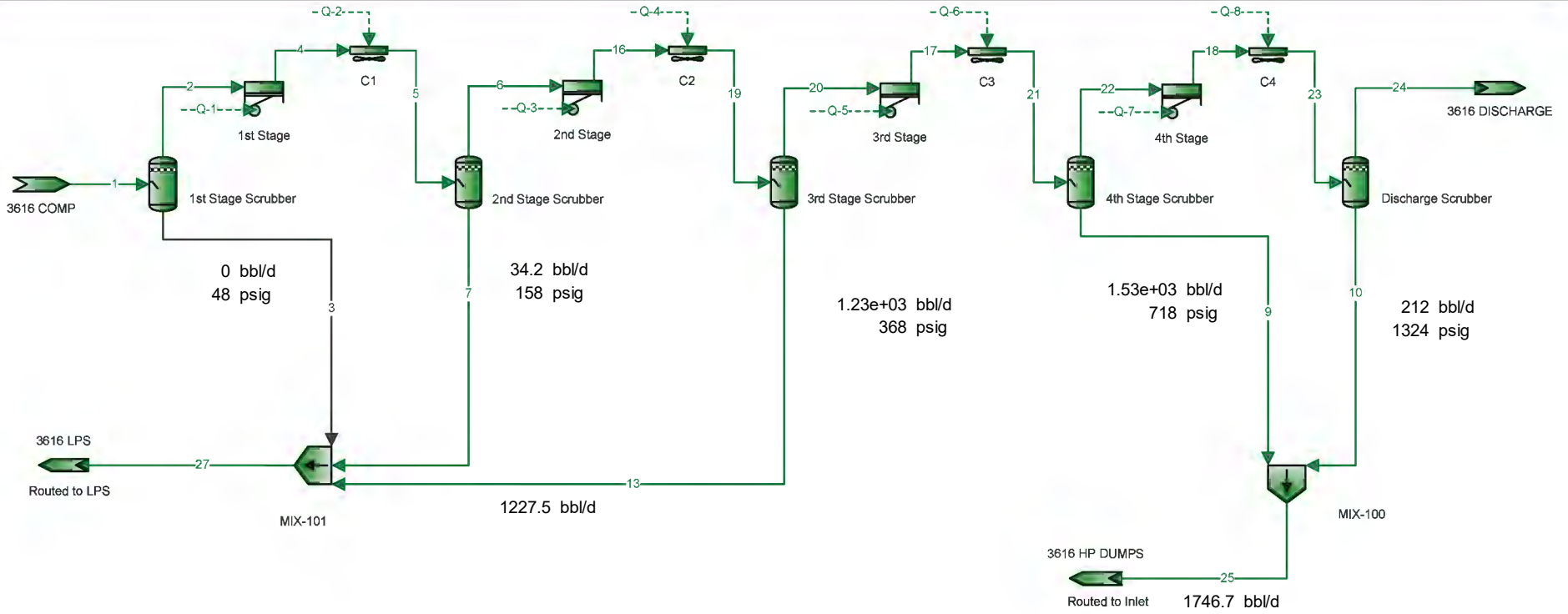
Property	Units	27	28	3606 & 3516 INLET	3616 INLET
Temperature	°F	100	98.8743	83.1825	83.1825
Pressure	psig	1324	1296	48	48
Molecular Weight	lb/lbmol	21.6532	21.6527	22.2871	22.2871
Mass Flow	lb/h	526746	191718	39153.2	554907
Std Vapor Volumetric Flow	MMSCFD	221.556	80.641	16 *	226.763
Std Liquid Volumetric Flow	sgpm	2979.95	1084.62	216.451	3067.69
API Gravity					
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	1175.99	1175.97	1199.1	1199.1

Remarks



## 3616s Plant Schematic

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	3616s	



Names	Units	1st Stage	2nd Stage	3rd Stage	4th Stage
Compression Ratio		2.8397	2.2406	1.9242	1.8319
Power	hp	14578	13294	12274	8337.6

\* User Specified Values  
 ? Extrapolated or Approximate Values

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan 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	MIX-101	C1	2nd Stage Scrubber

**Stream Composition**

Mass Flow	1 lb/h	2 lb/h	3 lb/h	4 lb/h	5 lb/h
Triethylene Glycol	1.59832E-06	1.59832E-06	0	1.59832E-06	1.59832E-06
Water	4189.59	4189.59	0	4189.59	4189.59
Hydrogen Sulfide	8.51643	8.51643	0	8.51643	8.51643
Carbon Dioxide	1649.01	1649.01	0	1649.01	1649.01
Nitrogen	4425.9	4425.9	0	4425.9	4425.9
Methane	305157	305157	0	305157	305157
Ethane	83806.7	83806.7	0	83806.7	83806.7
Propane	55942.3	55942.3	0	55942.3	55942.3
Isobutane	12966.1	12966.1	0	12966.1	12966.1
n-Butane	26975.1	26975.1	0	26975.1	26975.1
Isopentane	9858.63	9858.63	0	9858.63	9858.63
n-Pentane	11722.2	11722.2	0	11722.2	11722.2
i-C6	12877.2	12877.2	0	12877.2	12877.2
i-C7	12034.6	12034.6	0	12034.6	12034.6
Octane	4074.34	4074.34	0	4074.34	4074.34
Nonane	1136.61	1136.61	0	1136.61	1136.61
Benzene	300.453	300.453	0	300.453	300.453
Toluene	773.645	773.645	0	773.645	773.645
Ethylbenzene	35.2326	35.2326	0	35.2326	35.2326
o-Xylene	432.881	432.881	0	432.881	432.881
n-Hexane	6410.29	6410.29	0	6410.29	6410.29
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	130.407	130.407	0	130.407	130.407
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	1 %	2 %	3 %	4 %	5 %
Triethylene Glycol	4.2747E-11	4.2747E-11		4.2747E-11	4.2747E-11
Water	0.934035	0.934035		0.934035	0.934035
Hydrogen Sulfide	0.00100364	0.00100364		0.00100364	0.00100364
Carbon Dioxide	0.15049	0.15049		0.15049	0.15049
Nitrogen	0.634554	0.634554		0.634554	0.634554
Methane	76.3985	76.3985		76.3985	76.3985
Ethane	11.1942	11.1942		11.1942	11.1942
Propane	5.09539	5.09539		5.09539	5.09539
Isobutane	0.895985	0.895985		0.895985	0.895985
n-Butane	1.86403	1.86403		1.86403	1.86403
Isopentane	0.548808	0.548808		0.548808	0.548808
n-Pentane	0.652551	0.652551		0.652551	0.652551
i-C6	0.600163	0.600163		0.600163	0.600163
i-C7	0.482379	0.482379		0.482379	0.482379
Octane	0.143257	0.143257		0.143257	0.143257
Nonane	0.0355935	0.0355935		0.0355935	0.0355935
Benzene	0.0154487	0.0154487		0.0154487	0.0154487
Toluene	0.0337236	0.0337236		0.0337236	0.0337236
Ethylbenzene	0.00133289	0.00133289		0.00133289	0.00133289
o-Xylene	0.0163764	0.0163764		0.0163764	0.0163764
n-Hexane	0.298763	0.298763		0.298763	0.298763
2,2,4-Trimethylpentane	0	0		0	0
Decanes Plus	0.00341435	0.00341435		0.00341435	0.00341435
Decanes Plus Sat	0	0		0	0

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	3616s	

Mass Fraction	1 %	2 %	3 %	4 %	5 %
Triethylene Glycol	2.88035E-10	2.88035E-10		2.88035E-10	2.88035E-10
Water	0.755008	0.755008		0.755008	0.755008
Hydrogen Sulfide	0.00153475	0.00153475		0.00153475	0.00153475
Carbon Dioxide	0.297168	0.297168		0.297168	0.297168
Nitrogen	0.797594	0.797594		0.797594	0.797594
Methane	54.9925	54.9925		54.9925	54.9925
Ethane	15.1028	15.1028		15.1028	15.1028
Propane	10.0814	10.0814		10.0814	10.0814
Isobutane	2.33663	2.33663		2.33663	2.33663
n-Butane	4.8612	4.8612		4.8612	4.8612
Isopentane	1.77663	1.77663		1.77663	1.77663
n-Pentane	2.11247	2.11247		2.11247	2.11247
i-C6	2.3206	2.3206		2.3206	2.3206
i-C7	2.16876	2.16876		2.16876	2.16876
Octane	0.734238	0.734238		0.734238	0.734238
Nonane	0.204829	0.204829		0.204829	0.204829
Benzene	0.0541447	0.0541447		0.0541447	0.0541447
Toluene	0.139419	0.139419		0.139419	0.139419
Ethylbenzene	0.00634928	0.00634928		0.00634928	0.00634928
o-Xylene	0.0780096	0.0780096		0.0780096	0.0780096
n-Hexane	1.1552	1.1552		1.1552	1.1552
2,2,4-Trimethylpentane	0	0		0	0
Decanes Plus	0.0235007	0.0235007		0.0235007	0.0235007
Decanes Plus Sat	0	0		0	0

**Stream Properties**

Property	Units	1	2	3	4	5
Temperature	°F	83.1825	83.1825		220 *	115 *
Pressure	psig	48	48	48	160 *	158
Molecular Weight	lb/lbmol	22.2871	22.2871		22.2871	22.2871
Mass Flow	lb/h	554907	554907	0	554907	554907
Std Vapor Volumetric Flow	MMSCFD	226.763	226.763	0	226.763	226.763
Std Liquid Volumetric Flow	sgpm	3067.69	3067.69	0	3067.69	3067.69
API Gravity						
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	1199.1	1199.1		1199.1	1199.1

**Remarks**

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	3616s	

**Connections**

	6	7	9	10	13
From Block	2nd Stage Scrubber	2nd Stage Scrubber	4th Stage Scrubber	Discharge Scrubber	3rd Stage Scrubber
To Block	2nd Stage	MIX-101	MIX-100	MIX-100	MIX-101

**Stream Composition**

Mass Flow	6 lb/h	7 lb/h	9 lb/h	10 lb/h	13 lb/h
Triethylene Glycol	2.30039E-09	1.59602E-06	3.63479E-13	9.39245E-17	2.30003E-09
Water	4009.24	180.349	1104.16	611.192	1867.45
Hydrogen Sulfide	8.51613	0.000292742	0.0703659	0.013877	0.028665
Carbon Dioxide	1648.99	0.0210672	6.33296	1.4845	2.30912
Nitrogen	4425.9	0.00677235	3.27488	1.12054	0.941058
Methane	305155	1.4585	572.287	156.075	186.496
Ethane	83804.7	1.98369	589.121	115.434	227.469
Propane	55938.3	3.95569	926.65	145.843	407.075
Isobutane	12964.1	1.99008	398.244	52.8975	193.229
n-Butane	26969.4	5.74967	1084.25	134.986	545.258
Isopentane	9854.03	4.59581	671.474	70.507	388.491
n-Pentane	11715.3	6.96938	955.477	96.2433	573.094
i-C6	12860.2	16.9818	1808.22	153.579	1267.33
i-C7	11993.4	41.1937	2715.7	185.224	2496.57
Octane	4022.66	51.6777	1143.06	57.5045	1864.43
Nonane	1098.26	38.3471	249.549	9.91747	753.515
Benzene	299.887	0.565748	49.9724	4.03886	38.3313
Toluene	769.521	4.12343	200.94	12.978	215.77
Ethylbenzene	34.7373	0.495256	9.88344	0.502637	16.907
o-Xylene	425.248	7.63287	117.642	5.68535	229.068
n-Hexane	6398.86	11.4251	1066.68	85.2126	804.04
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	110.64	19.7665	9.45476	0.228663	100.187
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	6 %	7 %	9 %	10 %	13 %
Triethylene Glycol	6.15542E-14	8.63968E-08	9.22448E-16	1.01086E-18	6.51314E-12
Water	0.894269	81.3812	23.3585	54.833	44.0817
Hydrogen Sulfide	0.0010041	6.98272E-05	0.000786876	0.000658095	0.000357677
Carbon Dioxide	0.150563	0.00389145	0.0548422	0.0545179	0.0223126
Nitrogen	0.634867	0.00196528	0.0445538	0.0646497	0.0142856
Methane	76.4359	0.73907	13.5956	15.7241	4.94365
Ethane	11.1994	0.536298	7.46689	6.20468	3.217
Propane	5.09755	0.729252	8.00894	5.3456	3.9258
Isobutane	0.89629	0.278342	2.61133	1.47095	1.41377
n-Butane	1.86456	0.804177	7.10953	3.75363	3.98941
Isopentane	0.548823	0.517826	3.54695	1.57946	2.28982
n-Pentane	0.652486	0.785264	5.04715	2.15599	3.3779
i-C6	0.599668	1.60196	7.99692	2.88041	6.25394
i-C7	0.480966	3.34199	10.3291	2.98763	10.5954
Octane	0.14151	3.67772	3.81372	0.813641	6.94097
Nonane	0.0344096	2.43057	0.741542	0.124977	2.49842
Benzene	0.0154272	0.0588785	0.243819	0.0835695	0.208682
Toluene	0.0335604	0.363805	0.831152	0.227652	0.995864
Ethylbenzene	0.00131481	0.0379227	0.0354798	0.00765206	0.0677225
o-Xylene	0.0160956	0.584463	0.422316	0.0865528	0.917557
n-Hexane	0.298378	1.07778	4.71744	1.59818	3.96774
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.00289825	1.0475	0.0234898	0.00240922	0.277738
Decanes Plus Sat	0	0	0	0	0

\* 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:
Location:	Spartan Compressor Station	
Flowsheet:	3616s	

Mass Fraction	6 %	7 %	9 %	10 %	13 %
Triethylene Glycol	4.14854E-13	3.99715E-07	2.65653E-15	4.94166E-18	1.88868E-11
Water	0.723027	45.1676	8.0699	32.1567	15.3347
Hydrogen Sulfide	0.0015358	7.33156E-05	0.000514279	0.000730109	0.000235384
Carbon Dioxide	0.297378	0.00527617	0.0462853	0.0781041	0.0189614
Nitrogen	0.798167	0.0016961	0.0239349	0.058955	0.00772753
Methane	55.0318	0.365273	4.18264	8.21157	1.53142
Ethane	15.1134	0.496806	4.30568	6.07334	1.86787
Propane	10.0879	0.990682	6.77255	7.67327	3.34271
Isobutane	2.33796	0.498405	2.91062	2.7831	1.58671
n-Butane	4.86366	1.43997	7.92437	7.10202	4.4774
Isopentane	1.77708	1.151	4.90756	3.70959	3.19011
n-Pentane	2.11274	1.74544	6.98323	5.06366	4.70599
i-C6	2.31921	4.25301	13.2156	8.08027	10.4067
i-C7	2.1629	10.3167	19.8481	9.7452	20.5007
Octane	0.725447	12.9424	8.3542	3.02549	15.3098
Nonane	0.198061	9.60384	1.82386	0.521789	6.18751
Benzene	0.0540817	0.141689	0.36523	0.212497	0.314759
Toluene	0.138776	1.03269	1.4686	0.682811	1.77181
Ethylbenzene	0.00626454	0.124034	0.0722345	0.0264453	0.138832
o-Xylene	0.0766893	1.91161	0.859806	0.299124	1.881
n-Hexane	1.15397	2.86136	7.79599	4.4833	6.6024
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.0199529	4.95042	0.0691014	0.0120307	0.822691
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	6	7	9	10	13
Temperature	°F	115	115	115	100	120
Pressure	psig	158	158	718	1324	368
Molecular Weight	lb/lbmol	22.282	32.4593	52.1457	30.7193	51.7875
Mass Flow	lb/h	554507	399.29	13682.4	1900.67	12178
Std Vapor Volumetric Flow	MMSCFD	226.651	0.112035	2.38974	0.563507	2.14169
Std Liquid Volumetric Flow	sgpm	3066.69	0.997951	44.7663	6.18032	35.8007
API Gravity			43.9259	92.9062	95.7998	72.0814
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	1199.25	898.836	2459.33	1083.38	2229.48

Remarks

## Process Streams Report All Streams Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan 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					
Mass Flow	16 lb/h	17 lb/h	18 lb/h	19 lb/h	20 lb/h
Triethylene Glycol	2.30039E-09	3.63572E-13	9.39798E-17	2.30039E-09	3.63572E-13
Water	4009.24	2141.78	1037.62	4009.24	2141.78
Hydrogen Sulfide	8.51613	8.48747	8.4171	8.51613	8.48747
Carbon Dioxide	1648.99	1646.68	1640.34	1648.99	1646.68
Nitrogen	4425.9	4424.95	4421.68	4425.9	4424.95
Methane	305155	304969	304397	305155	304969
Ethane	83804.7	83577.2	82988.1	83804.7	83577.2
Propane	55938.3	55531.2	54604.6	55938.3	55531.2
Isobutane	12964.1	12770.9	12372.7	12964.1	12770.9
n-Butane	26969.4	26424.1	25339.9	26969.4	26424.1
Isopentane	9854.03	9465.54	8794.07	9854.03	9465.54
n-Pentane	11715.3	11142.2	10186.7	11715.3	11142.2
i-C6	12860.2	11592.8	9784.63	12860.2	11592.8
i-C7	11993.4	9496.84	6781.14	11993.4	9496.84
Octane	4022.66	2158.23	1015.17	4022.66	2158.23
Nonane	1098.26	344.749	95.2006	1098.26	344.749
Benzene	299.887	261.555	211.583	299.887	261.555
Toluene	769.521	553.751	352.811	769.521	553.751
Ethylbenzene	34.7373	17.8304	7.94694	34.7373	17.8304
o-Xylene	425.248	196.179	78.5368	425.248	196.179
n-Hexane	6398.86	5594.82	4528.14	6398.86	5594.82
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	110.64	10.4531	0.998308	110.64	10.4531
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	16 %	17 %	18 %	19 %	20 %
Triethylene Glycol	6.15542E-14	9.82132E-18	2.56603E-21	6.15542E-14	9.82132E-18
Water	0.894269	0.482287	0.236166	0.894269	0.482287
Hydrogen Sulfide	0.0010041	0.00101027	0.00101267	0.0010041	0.00101027
Carbon Dioxide	0.150563	0.151786	0.152829	0.150563	0.151786
Nitrogen	0.634867	0.640787	0.647202	0.634867	0.640787
Methane	76.4359	77.1179	77.8013	76.4359	77.1179
Ethane	11.1994	11.2756	11.3166	11.1994	11.2756
Propane	5.09755	5.10872	5.07752	5.09755	5.10872
Isobutane	0.89629	0.891354	0.872849	0.89629	0.891354
n-Butane	1.86456	1.84429	1.78764	1.86456	1.84429
Isopentane	0.548823	0.532215	0.49978	0.548823	0.532215
n-Pentane	0.652486	0.626487	0.578926	0.652486	0.626487
i-C6	0.599668	0.54573	0.465564	0.599668	0.54573
i-C7	0.480966	0.38448	0.277488	0.480966	0.38448
Octane	0.14151	0.0766467	0.0364404	0.14151	0.0766467
Nonane	0.0344096	0.0109043	0.00304357	0.0344096	0.0109043
Benzene	0.0154272	0.0135837	0.0111066	0.0154272	0.0135837
Toluene	0.0335604	0.0243806	0.0157007	0.0335604	0.0243806
Ethylbenzene	0.00131481	0.000681318	0.000306928	0.00131481	0.000681318
o-Xylene	0.0160956	0.00749622	0.00303326	0.0160956	0.00749622
n-Hexane	0.298378	0.263375	0.215454	0.298378	0.263375
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.00289825	0.000276432	2.66844E-05	0.00289825	0.000276432
Decanes Plus Sat	0	0	0	0	0

\* User Specified Values  
? Extrapolated or Approximate Values

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	3616s	

Mass Fraction	16 %	17 %	18 %	19 %	20 %
Triethylene Glycol	4.14854E-13	6.70391E-17	1.77774E-20	4.14854E-13	6.70391E-17
Water	0.723027	0.394923	0.196279	0.723027	0.394923
Hydrogen Sulfide	0.0015358	0.001565	0.0015922	0.0015358	0.001565
Carbon Dioxide	0.297378	0.30363	0.310291	0.297378	0.30363
Nitrogen	0.798167	0.815916	0.836415	0.798167	0.815916
Methane	55.0318	56.2332	57.5803	55.0318	56.2332
Ethane	15.1134	15.4108	15.6982	15.1134	15.4108
Propane	10.0879	10.2394	10.3291	10.0879	10.2394
Isobutane	2.33796	2.35482	2.34044	2.33796	2.35482
n-Butane	4.86366	4.87234	4.79334	4.86366	4.87234
Isopentane	1.77708	1.74535	1.6635	1.77708	1.74535
n-Pentane	2.11274	2.05451	1.92694	2.11274	2.05451
i-C6	2.31921	2.1376	1.85088	2.31921	2.1376
i-C7	2.1629	1.75112	1.28274	2.1629	1.75112
Octane	0.725447	0.397955	0.192032	0.725447	0.397955
Nonane	0.198061	0.0635683	0.0180084	0.198061	0.0635683
Benzene	0.0540817	0.0482282	0.0400235	0.0540817	0.0482282
Toluene	0.138776	0.102106	0.0667385	0.138776	0.102106
Ethylbenzene	0.00626454	0.00328774	0.00150326	0.00626454	0.00328774
o-Xylene	0.0766893	0.0361735	0.0148562	0.0766893	0.0361735
n-Hexane	1.15397	1.03163	0.856553	1.15397	1.03163
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.0199529	0.00192744	0.000188842	0.0199529	0.00192744
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	16	17	18	19	20
Temperature	°F	240 *	240 *	210 *	120 *	120
Pressure	psig	370 *	720 *	1326 *	368	368
Molecular Weight	lb/lbmol	22.282	22.0006	21.6762	22.282	22.0006
Mass Flow	lb/h	554507	542329	528647	554507	542329
Std Vapor Volumetric Flow	MMSCFD	226.651	224.509	222.119	226.651	224.509
Std Liquid Volumetric Flow	sgpm	3066.69	3030.89	2986.13	3066.69	3030.89
API Gravity						
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	1199.25	1189.42	1175.76	1199.25	1189.42

**Remarks**

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan 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	3616 HP DUMPS

**Stream Composition**

Mass Flow	21 lb/h	22 lb/h	23 lb/h	24 lb/h	25 lb/h
Triethylene Glycol	3.63572E-13	9.39798E-17	9.39798E-17	5.53706E-20	3.63572E-13
Water	2141.78	1037.62	1037.62	426.432	1715.35
Hydrogen Sulfide	8.48747	8.4171	8.4171	8.40323	0.0842428
Carbon Dioxide	1646.68	1640.34	1640.34	1638.86	7.81746
Nitrogen	4424.95	4421.68	4421.68	4420.56	4.39542
Methane	304969	304397	304397	304241	728.361
Ethane	83577.2	82988.1	82988.1	82872.7	704.555
Propane	55531.2	54604.6	54604.6	54458.7	1072.49
Isobutane	12770.9	12372.7	12372.7	12319.8	451.141
n-Butane	26424.1	25339.9	25339.9	25204.9	1219.23
Isopentane	9465.54	8794.07	8794.07	8723.56	741.98
n-Pentane	11142.2	10186.7	10186.7	10090.5	1051.72
i-C6	11592.8	9784.63	9784.63	9631.05	1961.8
i-C7	9496.84	6781.14	6781.14	6595.92	2900.93
Octane	2158.23	1015.17	1015.17	957.667	1200.56
Nonane	344.749	95.2006	95.2006	85.2832	259.466
Benzene	261.555	211.583	211.583	207.544	54.0113
Toluene	553.751	352.811	352.811	339.833	213.918
Ethylbenzene	17.8304	7.94694	7.94694	7.4443	10.3861
o-Xylene	196.179	78.5368	78.5368	72.8515	123.328
n-Hexane	5594.82	4528.14	4528.14	4442.93	1151.89
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	10.4531	0.998308	0.998308	0.769645	9.68342
Decanes Plus Sat	0	0	0	0	0

Mole Fraction	21 %	22 %	23 %	24 %	25 %
Triethylene Glycol	9.82132E-18	2.56603E-21	2.56603E-21	1.51569E-24	7.46629E-16
Water	0.482287	0.236166	0.236166	0.097304	29.3642
Hydrogen Sulfide	0.00101027	0.00101267	0.00101267	0.00101358	0.000762303
Carbon Dioxide	0.151786	0.152829	0.152829	0.153079	0.0547803
Nitrogen	0.640787	0.647202	0.647202	0.648683	0.0483883
Methane	77.1179	77.8013	77.8013	77.9592	14.0017
Ethane	11.2756	11.3166	11.3166	11.3296	7.22605
Propane	5.10872	5.07752	5.07752	5.07684	7.50075
Isobutane	0.891354	0.872849	0.872849	0.871328	2.39374
n-Butane	1.84429	1.78764	1.78764	1.78264	6.46919
Isopentane	0.532215	0.49978	0.49978	0.497034	3.17153
n-Pentane	0.626487	0.578926	0.578926	0.574915	4.49549
i-C6	0.54573	0.465564	0.465564	0.459422	7.02064
i-C7	0.38448	0.277488	0.277488	0.270595	8.92825
Octane	0.0766467	0.0364404	0.0364404	0.0344636	3.24127
Nonane	0.0109043	0.00304357	0.00304357	0.00273344	0.623895
Benzene	0.0135837	0.0111066	0.0111066	0.0109223	0.213242
Toluene	0.0243806	0.0157007	0.0157007	0.0151616	0.715998
Ethylbenzene	0.000681318	0.000306928	0.000306928	0.000288246	0.03017
o-Xylene	0.00749622	0.00303326	0.00303326	0.00282084	0.358249
n-Hexane	0.263375	0.215454	0.215454	0.211937	4.12226
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.000276432	2.66844E-05	2.66844E-05	2.06247E-05	0.0194675
Decanes Plus Sat	0	0	0	0	0

\* 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:
Location:	Spartan Compressor Station	
Flowsheet:	3616s	

Mass Fraction	21 %	22 %	23 %	24 %	25 %
Triethylene Glycol	6.70391E-17	1.77774E-20	1.77774E-20	1.05118E-23	2.33312E-15
Water	0.394923	0.196279	0.196279	0.080956	11.0078
Hydrogen Sulfide	0.001565	0.0015922	0.0015922	0.00159531	0.000540604
Carbon Dioxide	0.30363	0.310291	0.310291	0.311129	0.0501662
Nitrogen	0.815916	0.836415	0.836415	0.83922	0.0282063
Methane	56.2332	57.5803	57.5803	57.7585	4.67404
Ethane	15.4108	15.6982	15.6982	15.7329	4.52128
Propane	10.2394	10.3291	10.3291	10.3387	6.88241
Isobutane	2.35482	2.34044	2.34044	2.33884	2.89507
n-Butane	4.87234	4.79334	4.79334	4.78501	7.82407
Isopentane	1.74535	1.6635	1.6635	1.65612	4.76144
n-Pentane	2.05451	1.92694	1.92694	1.91562	6.7491
i-C6	2.1376	1.85088	1.85088	1.8284	12.5893
i-C7	1.75112	1.28274	1.28274	1.2522	18.6158
Octane	0.397955	0.192032	0.192032	0.181808	7.70426
Nonane	0.0635683	0.0180084	0.0180084	0.0161906	1.66505
Benzene	0.0482282	0.0400235	0.0400235	0.0394012	0.346601
Toluene	0.102106	0.0667385	0.0667385	0.0645155	1.37276
Ethylbenzene	0.00328774	0.00150326	0.00150326	0.00141326	0.0666496
o-Xylene	0.0361735	0.0148562	0.0148562	0.0138305	0.79142
n-Hexane	1.03163	0.856553	0.856553	0.843466	7.39194
2,2,4-Trimethylpentane	0	0	0	0	0
Decanes Plus	0.00192744	0.000188842	0.000188842	0.000146113	0.0621405
Decanes Plus Sat	0	0	0	0	0

**Stream Properties**

Property	Units	21	22	23	24	25
Temperature	°F	115 *	115	100 *	100	111.92
Pressure	psig	718	718	1324	1324	718
Molecular Weight	lb/lbmol	22.0006	21.6762	21.6762	21.6532	48.0573
Mass Flow	lb/h	542329	528647	528647	526746	15583.1
Std Vapor Volumetric Flow	MMSCFD	224.509	222.119	222.119	221.556	2.95324
Std Liquid Volumetric Flow	sgpm	3030.89	2986.13	2986.13	2979.95	50.9466
API Gravity						
Net Ideal Gas Heating Value	Btu/ft <sup>3</sup>	1189.42	1175.76	1175.76	1175.99	2196.79

**Remarks**

**Process Streams Report**  
**All Streams**  
 Tabulated by Total Phase

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	3616s	

**Connections**

	27			
From Block	MIX-101			
To Block	3616 LPS			

**Stream Composition**

Mass Flow	27 lb/h			
Triethylene Glycol	1.59832E-06			
Water	2047.8			
Hydrogen Sulfide	0.0289578			
Carbon Dioxide	2.33019			
Nitrogen	0.94783			
Methane	187.955			
Ethane	229.452			
Propane	411.03			
Isobutane	195.219			
n-Butane	551.007			
Isopentane	393.087			
n-Pentane	580.064			
i-C6	1284.31			
i-C7	2537.76			
Octane	1916.11			
Nonane	791.862			
Benzene	38.8971			
Toluene	219.894			
Ethylbenzene	17.4022			
o-Xylene	236.701			
n-Hexane	815.465			
2,2,4-Trimethylpentane	0			
Decanes Plus	119.954			
Decanes Plus Sat	0			

Mole Fraction	27 %			
Triethylene Glycol	4.30108E-09			
Water	45.9359			
Hydrogen Sulfide	0.000343367			
Carbon Dioxide	0.0213968			
Nitrogen	0.0136732			
Methane	4.73463			
Ethane	3.08374			
Propane	3.76689			
Isobutane	1.35733			
n-Butane	3.83107			
Isopentane	2.20173			
n-Pentane	3.24901			
i-C6	6.02269			
i-C7	10.2348			
Octane	6.77875			
Nonane	2.49505			
Benzene	0.201235			
Toluene	0.964443			
Ethylbenzene	0.0662411			
o-Xylene	0.900998			
n-Hexane	3.82408			
2,2,4-Trimethylpentane	0			
Decanes Plus	0.316004			
Decanes Plus Sat	0			

<b>Process Streams Report</b>		
<b>All Streams</b>		
Tabulated by Total Phase		

Client Name:	DELAWARE DIVISION	Job:
Location:	Spartan Compressor Station	
Flowsheet:	3616s	

Mass Fraction	27 %			
Triethylene Glycol	1.2708E-08			
Water	16.2818			
Hydrogen Sulfide	0.000230239			
Carbon Dioxide	0.018527			
Nitrogen	0.00753605			
Methane	1.4944			
Ethane	1.82434			
Propane	3.26804			
Isobutane	1.55216			
n-Butane	4.38097			
Isopentane	3.12538			
n-Pentane	4.612			
i-C6	10.2113			
i-C7	20.1774			
Octane	15.2347			
Nonane	6.29597			
Benzene	0.309265			
Toluene	1.74834			
Ethylbenzene	0.138362			
o-Xylene	1.88198			
n-Hexane	6.48364			
2,2,4-Trimethylpentane	0			
Decanes Plus	0.953733			
Decanes Plus Sat	0			

Stream Properties				
Property	Units	27		
Temperature	°F	115.749		
Pressure	psig	158		
Molecular Weight	lb/lbmol	50.8266		
Mass Flow	lb/h	12577.3		
Std Vapor Volumetric Flow	MMSCFD	2.25372		
Std Liquid Volumetric Flow	sgpm	36.7987		
API Gravity				
Net Ideal Gas Heating Value	Btu/ft^3	2163.33		

**Remarks**

\* User Specified Values  
 ? Extrapolated or Approximate Values

August 26, 2020

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

**For:** XTO Energy, Inc.  
22777 Springswoods Village Pkwy., W4.6B.345  
Spring, Texas 77389

**Sample:** Maverick Compressor Station  
First Stage Separator  
Spot Gas Sample @ 48 psig & 100 °F

Date Sampled: 08/19/2020

Job Number: 202352.001

**CHROMATOGRAPH EXTENDED ANALYSIS - GPA 2286**

<b>COMPONENT</b>	<b>MOL%</b>	<b>GPM</b>
Hydrogen Sulfide*	< 0.001	
Nitrogen	0.641	
Carbon Dioxide	0.151	
Methane	77.048	
Ethane	11.244	3.080
Propane	5.100	1.439
Isobutane	0.895	0.300
n-Butane	1.860	0.601
2-2 Dimethylpropane	0.012	0.005
Isopentane	0.549	0.206
n-Pentane	0.642	0.238
Hexanes	0.697	0.294
Heptanes Plus	<u>1.161</u>	<u>0.511</u>
Totals	100.000	6.674

**Computed Real Characteristics Of Heptanes Plus:**

Specific Gravity -----	3.518	(Air=1)
Molecular Weight -----	101.45	
Gross Heating Value -----	5410	BTU/CF

**Computed Real Characteristics Of Total Sample:**

Specific Gravity -----	0.780	(Air=1)
Compressibility (Z) -----	0.9956	
Molecular Weight -----	22.48	
Gross Heating Value		
Dry Basis -----	1374	BTU/CF
Saturated Basis -----	1351	BTU/CF

\*Hydrogen Sulfide tested on location by: Stain Tube Method (GPA 2377)  
Results: <0.013 Gr/100 CF, <0.2 PPMV or <0.001 Mol %

Base Conditions: 15.025 PSI & 60 Deg F

Sampled By: (24) D. Field  
Analyst: RG  
Processor: RG  
Cylinder ID: T-4014

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	0.641		0.799
Carbon Dioxide	0.151		0.296
Methane	77.048		54.973
Ethane	11.244	3.080	15.037
Propane	5.100	1.439	10.002
Isobutane	0.895	0.300	2.314
n-Butane	1.860	0.601	4.808
2,2 Dimethylpropane	0.012	0.005	0.039
Isopentane	0.549	0.206	1.762
n-Pentane	0.642	0.238	2.060
2,2 Dimethylbutane	0.015	0.006	0.057
Cyclopentane	0.000	0.000	0.000
2,3 Dimethylbutane	0.047	0.020	0.180
2 Methylpentane	0.211	0.090	0.809
3 Methylpentane	0.115	0.048	0.441
n-Hexane	0.309	0.130	1.184
Methylcyclopentane	0.090	0.032	0.337
Benzene	0.016	0.005	0.056
Cyclohexane	0.134	0.047	0.501
2-Methylhexane	0.059	0.028	0.263
3-Methylhexane	0.059	0.028	0.263
2,2,4 Trimethylpentane	0.000	0.000	0.000
Other C7's	0.112	0.050	0.494
n-Heptane	0.133	0.063	0.593
Methylcyclohexane	0.162	0.067	0.707
Toluene	0.039	0.013	0.160
Other C8's	0.157	0.075	0.770
n-Octane	0.051	0.027	0.259
Ethylbenzene	0.002	0.001	0.009
M & P Xylenes	0.023	0.009	0.109
O-Xylene	0.004	0.002	0.019
Other C9's	0.070	0.036	0.393
n-Nonane	0.016	0.009	0.091
Other C10's	0.025	0.015	0.157
n-Decane	0.005	0.003	0.032
Undecanes (11)	<u>0.004</u>	<u>0.003</u>	<u>0.026</u>
Totals	100.000	6.674	100.000

Computed Real Characteristics of Total Sample

Specific Gravity -----	0.780	(Air=1)
Compressibility (Z) -----	0.9956	
Molecular Weight -----	22.48	
Gross Heating Value		
Dry Basis -----	1374	BTU/CF
Saturated Basis -----	1351	BTU/CF

August 26, 2020

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

**Sample:** Maverick Compressor Station  
First Stage Separator  
Spot Gas Sample @ 48 psig & 100 °F

Date Sampled: 08/19/2020

Job Number: 202352.001

**GLYCALC FORMAT**

<b>COMPONENT</b>	<b>MOL%</b>	<b>GPM</b>	<b>Wt %</b>
Carbon Dioxide	0.151		0.296
Hydrogen Sulfide	< 0.001		< 0.001
Nitrogen	0.641		0.799
Methane	77.048		54.973
Ethane	11.244	3.080	15.037
Propane	5.100	1.439	10.002
Isobutane	0.895	0.300	2.314
n-Butane	1.872	0.605	4.847
Isopentane	0.549	0.206	1.762
n-Pentane	0.642	0.238	2.060
Cyclopentane	0.000	0.000	0.000
n-Hexane	0.309	0.130	1.184
Cyclohexane	0.134	0.047	0.501
Other C6's	0.388	0.164	1.487
Heptanes	0.453	0.200	1.950
Methylcyclohexane	0.162	0.067	0.707
2,2,4 Trimethylpentane	0.000	0.000	0.000
Benzene	0.016	0.005	0.056
Toluene	0.039	0.013	0.160
Ethylbenzene	0.002	0.001	0.009
Xylenes	0.027	0.011	0.128
Octanes Plus	<u>0.328</u>	<u>0.168</u>	<u>1.728</u>
Totals	100.000	6.674	100.000

**Real Characteristics Of Octanes Plus:**

Specific Gravity ----- 4.108 (Air=1)  
Molecular Weight ----- 118.45  
Gross Heating Value ----- 6263 BTU/CF

**Real Characteristics Of Total Sample:**

Specific Gravity ----- 0.780 (Air=1)  
Compressibility (Z) ----- 0.9956  
Molecular Weight ----- 22.48  
Gross Heating Value  
Dry Basis ----- 1374 BTU/CF  
Saturated Basis ----- 1351 BTU/CF

GAS COMPRESSION APPLICATION

ENGINE SPEED (rpm):	1000	RATING STRATEGY:	STANDARD
COMPRESSION RATIO:	7.6	FUEL SYSTEM:	GAV
AFTERCOOLER TYPE:	SCAC		WITH AIR FUEL RATIO CONTROL
AFTERCOOLER - STAGE 2 INLET (°F):	130	<b>SITE CONDITIONS:</b>	
AFTERCOOLER - STAGE 1 INLET (°F):	214	FUEL:	Maverick
JACKET WATER OUTLET (°F):	230	FUEL PRESSURE RANGE (psig): (See note 1)	58.0-70.3
ASPIRATION:	TA	FUEL METHANE NUMBER:	29.5
COOLING SYSTEM:	JW+1AC, OC+2AC	FUEL LHV (Btu/scf):	1223
CONTROL SYSTEM:	ADEM4	ALTITUDE(ft):	3366
EXHAUST MANIFOLD:	DRY	INLET AIR TEMPERATURE(°F):	77
COMBUSTION:	LOW EMISSION	STANDARD RATED POWER:	5000 bhp@1000rpm
NOx EMISSION LEVEL (g/bhp-hr NOx):	0.3		
SET POINT TIMING:	16		

RATING	NOTES	LOAD	SITE RATING AT MAXIMUM INLET AIR TEMPERATURE			
			100%	100%	75%	50%
ENGINE POWER (WITHOUT FAN)	(2)	bhp	4938	4938	3703	2500
INLET AIR TEMPERATURE		°F	77	77	77	77

ENGINE DATA							
FUEL CONSUMPTION (LHV)		(3)	Btu/bhp-hr	6797	6797	6925	7377
FUEL CONSUMPTION (HHV)		(3)	Btu/bhp-hr	7481	7481	7622	8118
AIR FLOW (@inlet air temp, 14.7 psia)	(WET)	(4)(5)	ft3/min	13464	13464	10076	6910
AIR FLOW	(WET)	(4)(5)	lb/hr	59701	59701	44678	30637
FUEL FLOW (60°F, 14.7 psia)			scfm	457	457	349	251
INLET MANIFOLD PRESSURE		(6)	in Hg(abs)	117.6	117.6	87.3	61.1
EXHAUST TEMPERATURE - ENGINE OUTLET		(7)	°F	722	722	787	860
EXHAUST GAS FLOW (@engine outlet temp, 14.5 psia)	(WET)	(8)(5)	ft3/min	31415	31415	24805	18050
EXHAUST GAS MASS FLOW	(WET)	(8)(5)	lb/hr	61303	61303	45905	31518

EMISSIONS DATA - ENGINE OUT							
NOx (as NO2)		(9)(10)	g/bhp-hr	0.30	0.30	0.30	0.30
CO		(9)(10)	g/bhp-hr	3.47	3.47	3.47	3.48
THC (mol. wt. of 15.84)		(9)(10)	g/bhp-hr	3.20	3.20	3.42	3.65
NMHC (mol. wt. of 15.84)		(9)(10)	g/bhp-hr	1.49	1.49	1.59	1.70
NMNEHC (VOCs) (mol. wt. of 15.84)		(9)(10)(11)	g/bhp-hr	0.99	0.99	1.06	1.13
HCHO (Formaldehyde)		(9)(10)	g/bhp-hr	0.18	0.18	0.18	0.20
CO2		(9)(10)	g/bhp-hr	493	493	507	531
EXHAUST OXYGEN		(9)(12)	% DRY	12.1	12.1	11.9	11.6

HEAT REJECTION							
HEAT REJ. TO JACKET WATER (JW)		(13)	Btu/min	51385	51385	40587	35052
HEAT REJ. TO ATMOSPHERE		(13)	Btu/min	20454	20454	18807	17049
HEAT REJ. TO LUBE OIL (OC)		(13)	Btu/min	30509	30509	26764	23482
HEAT REJ. TO A/C - STAGE 1 (1AC)		(13)(14)	Btu/min	52276	52276	23846	4677
HEAT REJ. TO A/C - STAGE 2 (2AC)		(13)(14)	Btu/min	23117	23117	15675	9427

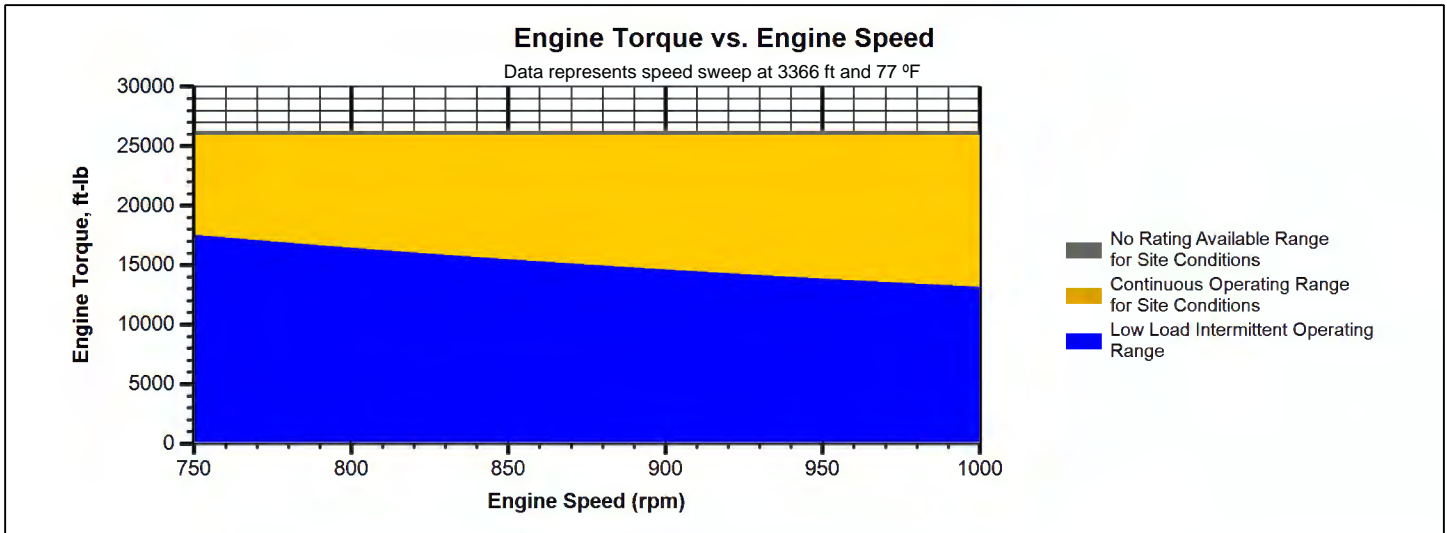
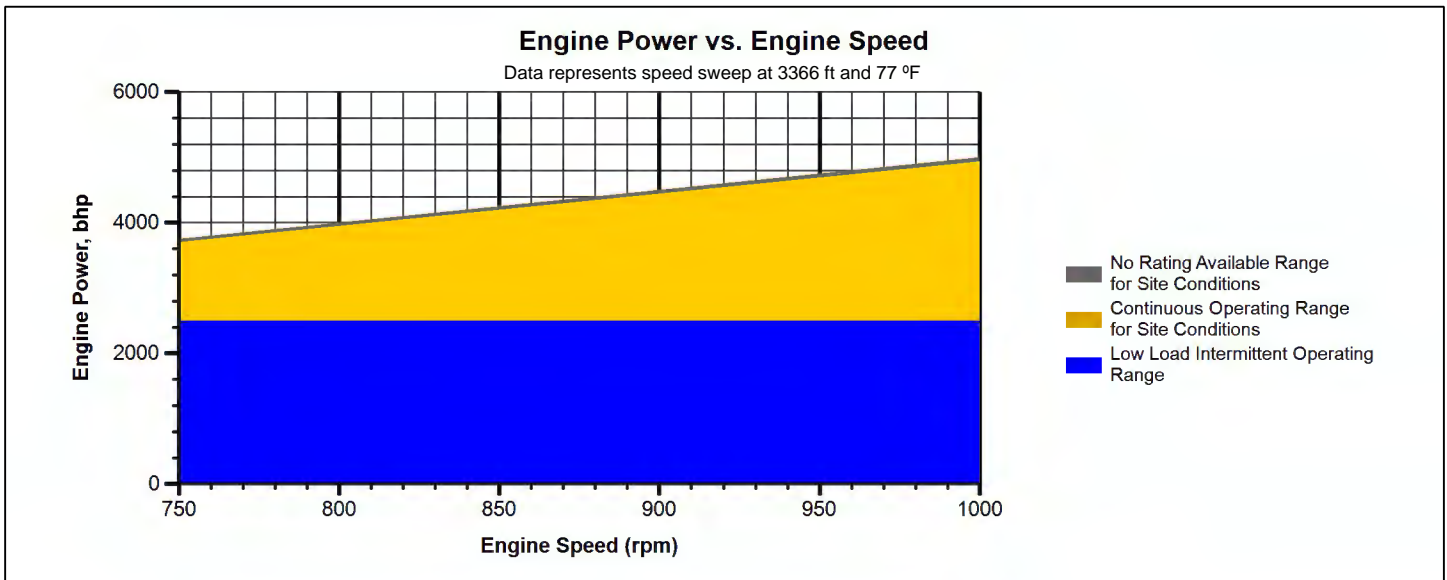
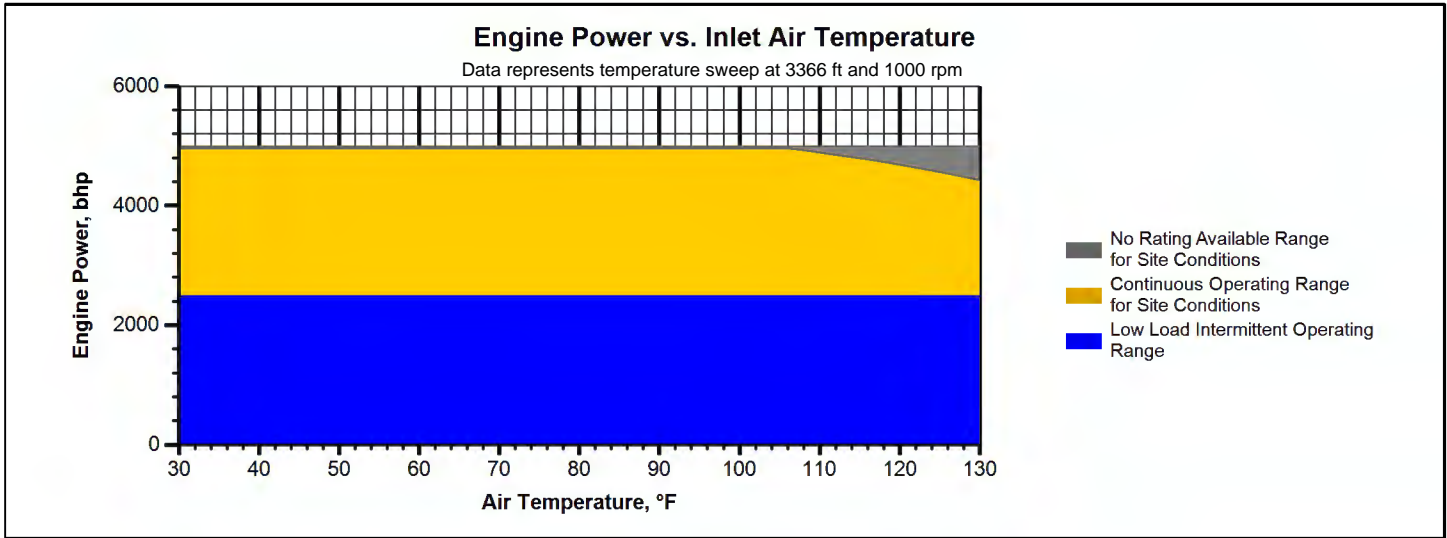
COOLING SYSTEM SIZING CRITERIA				
TOTAL JACKET WATER CIRCUIT (JW+1AC)	(14)(15)	Btu/min	111413	
TOTAL STAGE 2 AFTERCOOLER CIRCUIT (OC+2AC)	(14)(15)	Btu/min	60883	

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.



**Note:**

At site conditions of 3366 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. Engine rating obtained and presented in accordance with ISO 3046/1, adjusted for fuel, site altitude and site ambient temperature.
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°F, (-)54°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  $\pm 3$ . 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  $\pm 0.5$ .
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

Constituent	Abbrev	Mole %	Norm
Water Vapor	H2O	0.0000	0.0000
Methane	CH4	77.0480	77.0472
Ethane	C2H6	11.2440	11.2439
Propane	C3H8	5.1000	5.0999
Isobutane	iso-C4H10	0.8950	0.8950
Norbutane	nor-C4H10	1.8600	1.8600
Isopentane	iso-C5H12	0.5610	0.5610
Noropentane	nor-C5H12	0.6420	0.6420
Hexane	C6H14	0.6970	0.6970
Heptane	C7H16	1.1610	1.1610
Nitrogen	N2	0.6410	0.6410
Carbon Dioxide	CO2	0.1510	0.1510
Hydrogen Sulfide	H2S	0.0010	0.0010
Carbon Monoxide	CO	0.0000	0.0000
Hydrogen	H2	0.0000	0.0000
Oxygen	O2	0.0000	0.0000
Helium	HE	0.0000	0.0000
Neopentane	neo-C5H12	0.0000	0.0000
Octane	C8H18	0.0000	0.0000
Nonane	C9H20	0.0000	0.0000
Ethylene	C2H4	0.0000	0.0000
Propylene	C3H6	0.0000	0.0000
TOTAL (Volume %)		100.0010	100.0000

Fuel Makeup: Nat Gas  
Unit of Measure: English

**Calculated Fuel Properties**

Caterpillar Methane Number: 29.5  
Lower Heating Value (Btu/scf): 1223  
Higher Heating Value (Btu/scf): 1346  
WOBBE Index (Btu/scf): 1389  
THC: Free Inert Ratio: 125.26  
Total % Inerts (% N2, CO2, He): 0.792%  
RPC (%) (To 905 Btu/scf Fuel): 100%  
Compressibility Factor: 0.996  
Stoich A/F Ratio (Vol/Vol): 12.67  
Stoich A/F Ratio (Mass/Mass): 16.33  
Specific Gravity (Relative to Air): 0.776  
Fuel Specific Heat Ratio (K): 1.277

**CONDITIONS AND DEFINITIONS**

Caterpillar Methane Number represents the knock resistance of a gaseous fuel. It should be used with the Caterpillar Fuel Usage Guide for the engine and rating to determine the rating for the fuel specified. A Fuel Usage Guide for each rating is included on page 2 of its standard technical data sheet.

RPC always applies to naturally aspirated (NA) engines, and turbocharged (TA or LE) engines only when they are derated for altitude and ambient site conditions.

Project specific technical data sheets generated by the Caterpillar Gas Engine Rating Pro program take the Caterpillar Methane Number and RPC into account when generating a site rating.

Fuel properties for Btu/scf calculations are at 60F and 14.696 psia.

Caterpillar shall have no liability in law or equity, for damages, consequently or otherwise, arising from use of program and related material or any part thereof.

**FUEL LIQUIDS**

Field gases, well head gases, and associated gases typically contain liquid water and heavy hydrocarbons entrained in the gas. To prevent detonation and severe damage to the engine, hydrocarbon liquids must not be allowed to enter the engine fuel system. To remove liquids, a liquid separator and coalescing filter are recommended, with an automatic drain and collection tank to prevent contamination of the ground in accordance with local codes and standards.

To avoid water condensation in the engine or fuel lines, limit the relative humidity of water in the fuel to 80% at the minimum fuel operating temperature.

GAS COMPRESSION APPLICATION

ENGINE SPEED (rpm):	1400	RATING STRATEGY:	STANDARD
COMPRESSION RATIO:	8	FUEL SYSTEM:	CAT WIDE RANGE
AFTERCOOLER TYPE:	SCAC	<b>SITE CONDITIONS:</b>	WITH AIR FUEL RATIO CONTROL
AFTERCOOLER - STAGE 2 INLET (°F):	130	FUEL:	Maverick
AFTERCOOLER - STAGE 1 INLET (°F):	201	FUEL PRESSURE RANGE (psig): (See note 1)	7.0-40.0
JACKET WATER OUTLET (°F):	210	FUEL METHANE NUMBER:	29.5
ASPIRATION:	TA	FUEL LHV (Btu/scf):	1223
COOLING SYSTEM:	JW+OC+1AC, 2AC	ALTITUDE(ft):	3366
CONTROL SYSTEM:	ADEM3	INLET AIR TEMPERATURE(°F):	77
EXHAUST MANIFOLD:	ASWC	STANDARD RATED POWER:	1380 bhp@1400rpm
COMBUSTION:	LOW EMISSION		
NOx EMISSION LEVEL (g/bhp-hr NOx):	0.5		
SET POINT TIMING:	27		

RATING	NOTES	LOAD	SITE RATING AT MAXIMUM INLET AIR TEMPERATURE			
			100%	100%	75%	50%
ENGINE POWER (WITHOUT FAN)	(2)	bhp	1225	1225	918	690
INLET AIR TEMPERATURE		°F	77	77	77	77

ENGINE DATA							
FUEL CONSUMPTION (LHV)		(3)	Btu/bhp-hr	7234	7234	7594	8018
FUEL CONSUMPTION (HHV)		(3)	Btu/bhp-hr	7962	7962	8358	8824
AIR FLOW (@inlet air temp, 14.7 psia)	(WET)	(4)(5)	ft <sup>3</sup> /min	2774	2774	2120	1624
AIR FLOW	(WET)	(4)(5)	lb/hr	12301	12301	9400	7201
FUEL FLOW (60°F, 14.7 psia)			scfm	121	121	95	75
INLET MANIFOLD PRESSURE		(6)	in Hg(abs)	77.6	77.6	61.7	47.4
EXHAUST TEMPERATURE - ENGINE OUTLET		(7)	°F	848	848	846	889
EXHAUST GAS FLOW (@engine outlet temp, 14.5 psia)	(WET)	(8)(5)	ft <sup>3</sup> /min	7232	7232	5527	4381
EXHAUST GAS MASS FLOW	(WET)	(8)(5)	lb/hr	12728	12728	9736	7468

EMISSIONS DATA - ENGINE OUT							
NOx (as NO2)		(9)(10)	g/bhp-hr	0.50	0.50	0.50	0.50
CO		(9)(10)	g/bhp-hr	2.60	2.60	2.61	2.53
THC (mol. wt. of 15.84)		(9)(10)	g/bhp-hr	3.38	3.38	3.31	3.16
NMHC (mol. wt. of 15.84)		(9)(10)	g/bhp-hr	1.57	1.57	1.54	1.47
NMNEHC (VOCs) (mol. wt. of 15.84)		(9)(10)(11)	g/bhp-hr	1.05	1.05	1.02	0.98
HCHO (Formaldehyde)		(9)(10)	g/bhp-hr	0.35	0.35	0.33	0.32
CO2		(9)(10)	g/bhp-hr	530	530	554	586
EXHAUST OXYGEN		(9)(12)	% DRY	9.0	9.0	8.7	8.3

HEAT REJECTION							
HEAT REJ. TO JACKET WATER (JW)		(13)	Btu/min	31012	31012	26712	23889
HEAT REJ. TO ATMOSPHERE		(13)	Btu/min	4914	4914	4129	3543
HEAT REJ. TO LUBE OIL (OC)		(13)	Btu/min	3749	3749	3229	2888
HEAT REJ. TO A/C - STAGE 1 (1AC)		(13)(14)	Btu/min	6592	6592	4838	1422
HEAT REJ. TO A/C - STAGE 2 (2AC)		(13)(14)	Btu/min	4438	4438	3911	2786

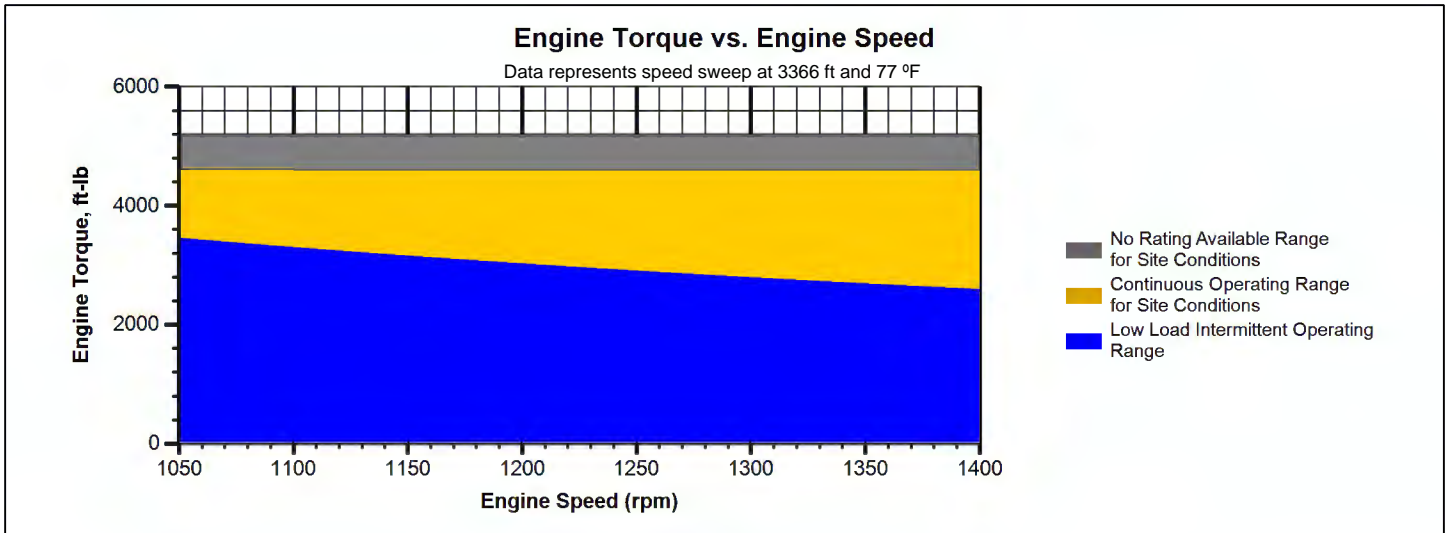
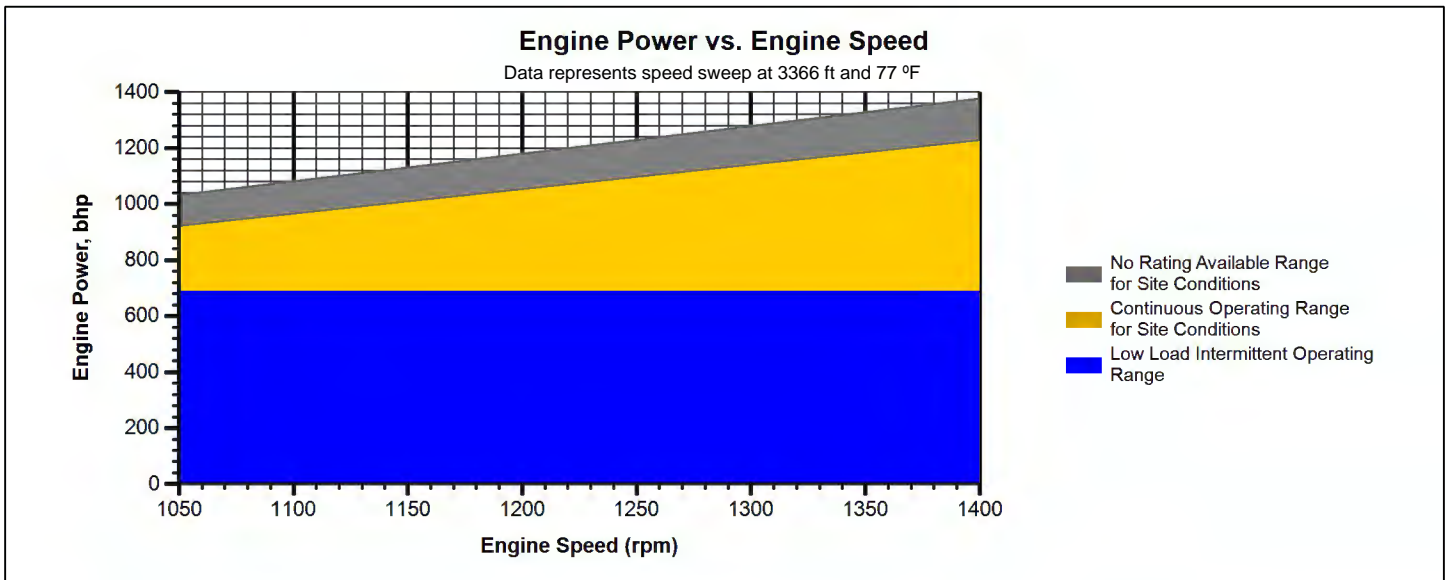
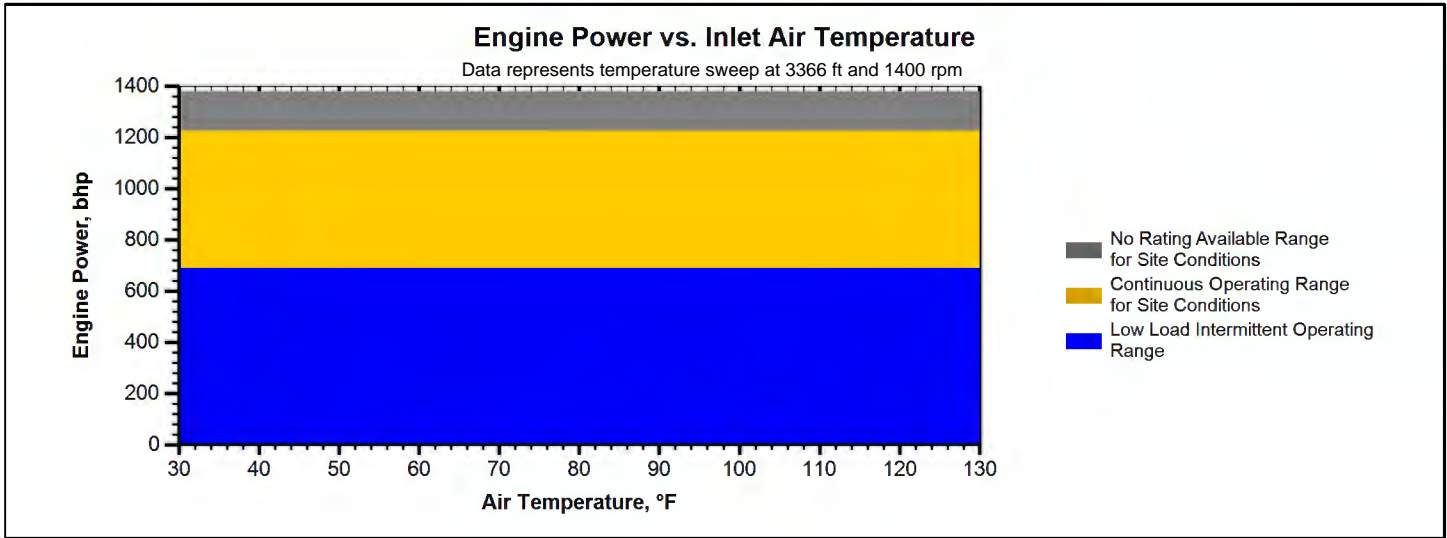
COOLING SYSTEM SIZING CRITERIA				
TOTAL JACKET WATER CIRCUIT (JW+OC+1AC)	(14)(15)	Btu/min	45533	
TOTAL AFTERCOOLER CIRCUIT (2AC)	(14)(15)	Btu/min	4660	

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.



**Note:**  
At site conditions of 3366 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. Engine rating obtained and presented in accordance with ISO 3046/1, adjusted for fuel, site altitude and site ambient temperature.
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°F, (-)54°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  $\pm 3$ . 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  $\pm 0.5$ .
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

Constituent	Abbrev	Mole %	Norm
Water Vapor	H2O	0.0000	0.0000
Methane	CH4	77.0480	77.0472
Ethane	C2H6	11.2440	11.2439
Propane	C3H8	5.1000	5.0999
Isobutane	iso-C4H10	0.8950	0.8950
Norbutane	nor-C4H10	1.8600	1.8600
Isopentane	iso-C5H12	0.5610	0.5610
Noropentane	nor-C5H12	0.6420	0.6420
Hexane	C6H14	0.6970	0.6970
Heptane	C7H16	1.1610	1.1610
Nitrogen	N2	0.6410	0.6410
Carbon Dioxide	CO2	0.1510	0.1510
Hydrogen Sulfide	H2S	0.0010	0.0010
Carbon Monoxide	CO	0.0000	0.0000
Hydrogen	H2	0.0000	0.0000
Oxygen	O2	0.0000	0.0000
Helium	HE	0.0000	0.0000
Neopentane	neo-C5H12	0.0000	0.0000
Octane	C8H18	0.0000	0.0000
Nonane	C9H20	0.0000	0.0000
Ethylene	C2H4	0.0000	0.0000
Propylene	C3H6	0.0000	0.0000
TOTAL (Volume %)		100.0010	100.0000

Fuel Makeup: Nat Gas  
Unit of Measure: English

**Calculated Fuel Properties**

Caterpillar Methane Number: 29.5  
Lower Heating Value (Btu/scf): 1223  
Higher Heating Value (Btu/scf): 1346  
WOBBE Index (Btu/scf): 1389  
THC: Free Inert Ratio: 125.26  
Total % Inerts (% N2, CO2, He): 0.792%  
RPC (%) (To 905 Btu/scf Fuel): 100%  
Compressibility Factor: 0.996  
Stoich A/F Ratio (Vol/Vol): 12.67  
Stoich A/F Ratio (Mass/Mass): 16.33  
Specific Gravity (Relative to Air): 0.776  
Fuel Specific Heat Ratio (K): 1.277

**CONDITIONS AND DEFINITIONS**

Caterpillar Methane Number represents the knock resistance of a gaseous fuel. It should be used with the Caterpillar Fuel Usage Guide for the engine and rating to determine the rating for the fuel specified. A Fuel Usage Guide for each rating is included on page 2 of its standard technical data sheet.

RPC always applies to naturally aspirated (NA) engines, and turbocharged (TA or LE) engines only when they are derated for altitude and ambient site conditions.

Project specific technical data sheets generated by the Caterpillar Gas Engine Rating Pro program take the Caterpillar Methane Number and RPC into account when generating a site rating.

Fuel properties for Btu/scf calculations are at 60F and 14.696 psia.

Caterpillar shall have no liability in law or equity, for damages, consequently or otherwise, arising from use of program and related material or any part thereof.

**FUEL LIQUIDS**

Field gases, well head gases, and associated gases typically contain liquid water and heavy hydrocarbons entrained in the gas. To prevent detonation and severe damage to the engine, hydrocarbon liquids must not be allowed to enter the engine fuel system. To remove liquids, a liquid separator and coalescing filter are recommended, with an automatic drain and collection tank to prevent contamination of the ground in accordance with local codes and standards.

To avoid water condensation in the engine or fuel lines, limit the relative humidity of water in the fuel to 80% at the minimum fuel operating temperature.

**Tab 8**  
**Section 8 - Map(s)**

# Section 8

## Map(s)

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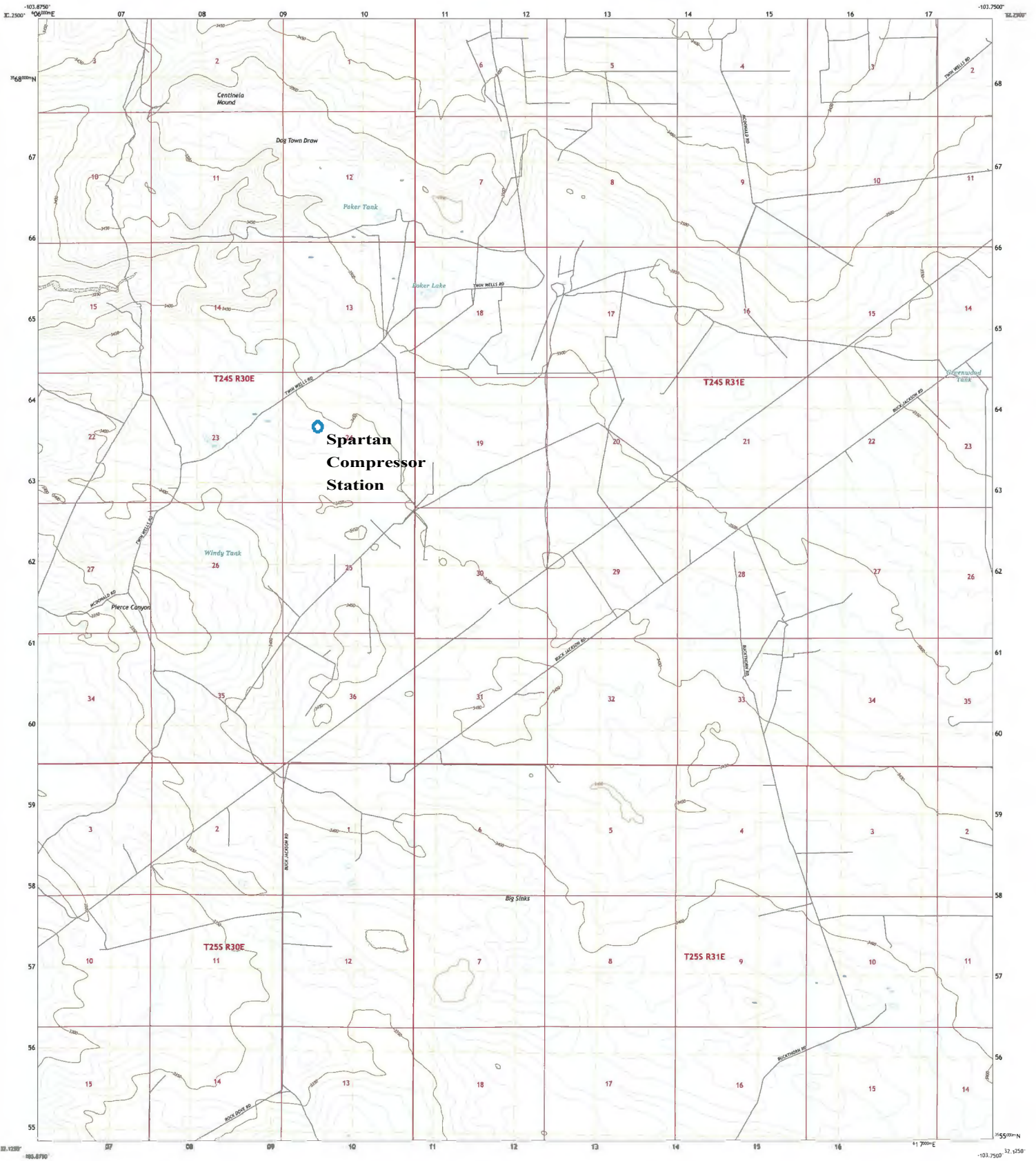
**A map** such as a 7.5 minute topographic quadrangle showing the exact location of the source. The map shall also include the following:

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	

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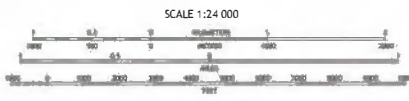
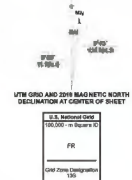
A site location map and aerial image illustrating the property boundary and surrounding access roads is provided with this application.





**Spartan  
Compressor  
Station**

Produced by the United States Geological Survey  
North American Datum of 1983 (NAD83)  
World Geodetic System of 1984 (WGS84). Projection and  
1:100,000 scale of the map are based on the datum.  
This map is not a legal document. Boundaries may be  
determined for this map by the Public Land Survey  
Administration.  
Produced by the United States Geological Survey  
August 2014  
U.S. Census Bureau, 2014  
National Geographic Society, 2014  
Public Land Survey System, 2014  
National Wetlands Inventory, 2014



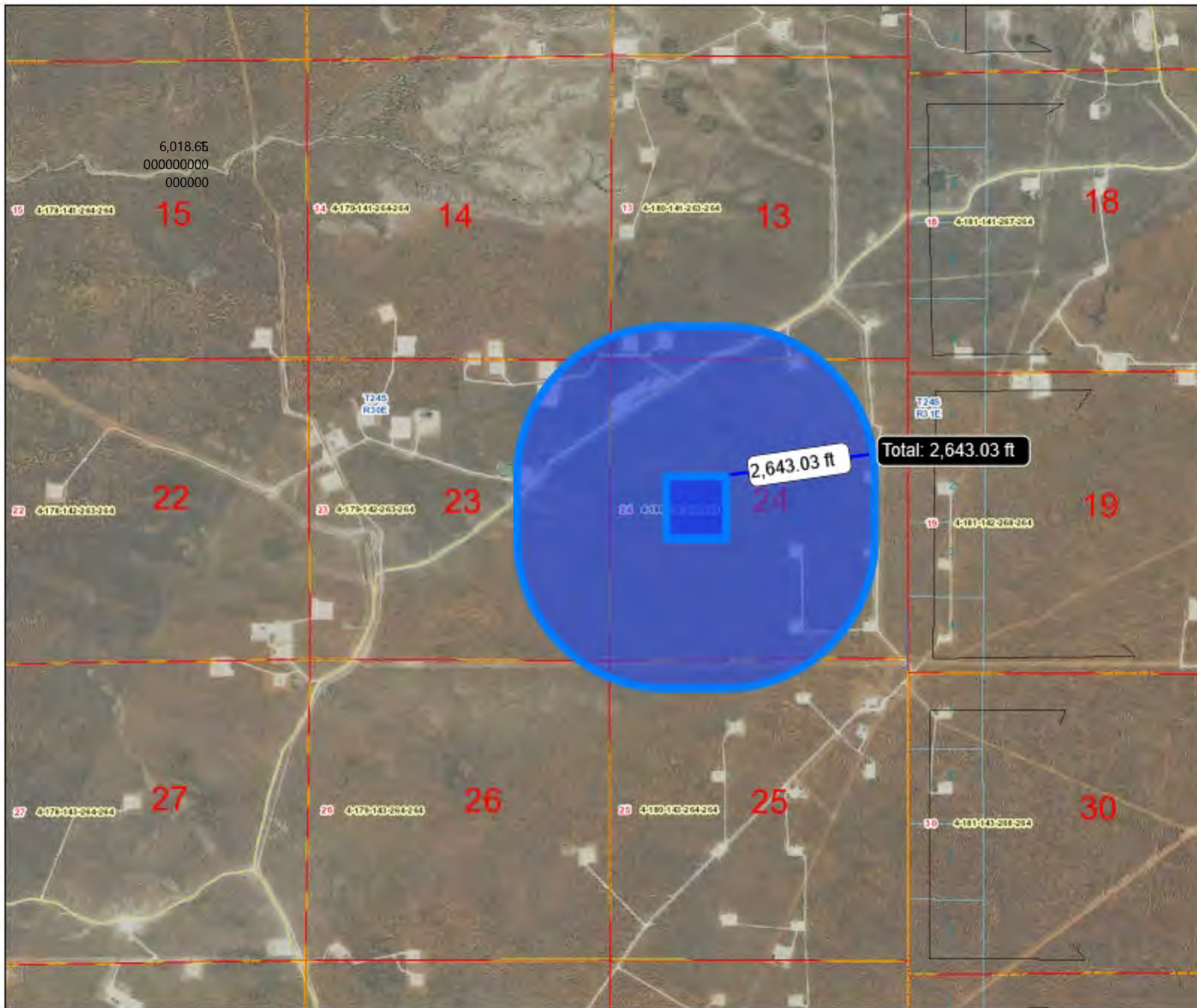
ROAD CLASSIFICATION

1	2	3	4	5	6	7	8
Interstate	US Route	State Route	Local Connector	Local Road	Public Road	Public Road	Public Road

ROAD CLASSIFICATION

1	2	3	4	5	6	7	8
Interstate	US Route	State Route	Local Connector	Local Road	Public Road	Public Road	Public Road

SCALE 1:24 000  
CONTOUR INTERVAL: 10 FEET  
NORTH AMERICAN VERTICAL DATUM OF 1988  
This map was produced by conform with the  
National Geospatial Program US Topo Product Standard, 2011  
A metadata file associated with this product is draft version 0.6.18



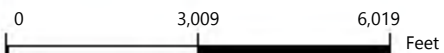
### Legend

#### Cartography

- <all other values>
- Govt Lot Lines
- Dimension Tic
- Leader Lines
- Misc Carto
- Owner Hooks
- Sub Corners
- Roads
- Railroads
- Water
- Geographic
- Section
- Subdivision
- Parcel

### Spartan Compressor Station 1/2 Miles Radius

Web Print: 09/20/2020



This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.



**Tab 9**  
**Section 9 - Proof of Public Notice**

# 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.

Public Notice is not required for Title V permit applications.

**Tab 10**

**Section 10 - Written Description of the Routine  
Operations of the Facility**

# Section 10

## Written Description of the Routine Operations of the Facility

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

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Field gas flows into two inlet slug catchers. The site uses natural gas engines to compress the field gas to 1200-1300 psig, including nine (9) Caterpillar 3616TA engines (ENG1-ENG9) and two (2) Caterpillar 3516J engines (ENG11-ENG12). The Caterpillar engines are equipped with oxidation catalysts to reduce CO, VOC, and formaldehyde emissions.

The high-pressure gas is then dehydrated using triethylene glycol dehydration units (DEHY1-DEHY3), each handling up to 80 MMscfd each. 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 from the condensers are routed to the low-pressure side of the flares FL1-FL3. Dehydrated gas is then transferred to a sales pipeline.

Low pressure liquids generated anywhere in the system are routed to a low pressure three phase separator (LPS). Vapors from the LPS are controlled by a VRU and routed to compression. When the LPS VRU is not operational, vapors from the LPS are routed to the flare system (FL1 – FL3). From the LPS, oil at approximately 15 psig is dumped to four (4) oil storage tanks (OT1-OT4), which are controlled by the flare system (FL1 – FL3). Water from the LPS flows to redundant skim tanks (SKT1/SKT2). 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 oil flows from the skim tanks into the oil storage tanks. The oil from the oil storage tanks are then pumped back into the high pressure three phase separator (HPS), to be transferred offsite via pipeline. Vapors from the water storage tanks and skim tanks are also controlled by the flare system (FL1 – FL3). Oil can be trucked offsite or pumped offsite via pipeline, water is transferred offsite via pipeline to saltwater disposal (SWD).

High pressure liquids generated anywhere in the system are routed to high pressure three phase separator (HPS). Vapors from the high pressure separator are routed back to the inlet slug catchers. From the HPS, liquid hydrocarbons at approximately 400 psig are transferred offsite via pipeline pipeline. Water from the HPS is transferred offsite via pipeline to SWD.

The flare system (FL1 – FL3) is also used to flare gas in the event of an emergency.

**Tab 11**  
**Section 11 -Source Determination**

# 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):



**Tab 12**  
**Section 12 - PSD Applicability Determination for**  
**All Sources**

# Section 12

## Section 12.A

### **PSD Applicability Determination for All Sources**

(Submitting under 20.2.72, 20.2.74 NMAC)

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This application is not for a NSR application submitted under 20.2.72 or 20.2.74 NMAC.

**Tab 13**

**Section 13 - Determination of State & Federal Air  
Quality Regulations**

# Section 13

## Determination of State & Federal Air Quality Regulations

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**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/>

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

### **Example of a Table for STATE REGULATIONS:**

<a href="#">STATE REGULATIONS CITATION</a>	Title	Applies? Enter Yes or No	Unit(s) or Facility	<b>JUSTIFICATION:</b> <b>(You may delete instructions or statements that do not apply in the justification column to shorten the document.)</b>
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	This regulation may apply if, this is an application for a notice of intent (NOI) per 20.2.73 NMAC, if the activity or facility is a fugitive dust source listed at 20.2.23.108.A NMAC, <b>and</b> if the activity or facility is located in an area subject to a mitigation plan pursuant to 40 CFR 51.930. <a href="http://164.64.110.134/parts/title20/20.002.0023.html">http://164.64.110.134/parts/title20/20.002.0023.html</a>  As of January 2019, the only areas of the State subject to a mitigation plan per 40 CFR 51.930 are in Doña Ana and Luna Counties.  Sources exempt from 20.2.23 NMAC are activities and facilities subject to a permit issued pursuant to the NM Air Quality Control Act, the Mining Act, or the Surface Mining Act (20.2.23.108.B NMAC).  <b>20.2.23.108 APPLICABILITY:</b> <b>A.</b> 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: <b>(1)</b> disturbed surface areas or inactive disturbed surface areas, or a combination thereof, encompassing an area equal to or greater than one acre; <b>(2)</b> any commercial or industrial bulk material processing, handling, transport or storage operations. <b>B.</b> The following fugitive dust sources are exempt from this part: <b>(1)</b> agricultural facilities, as defined in this part; <b>(2)</b> roadways, as defined in this part; <b>(3)</b> operations issued permits pursuant to the state of New Mexico Air Quality Control Act, Mining Act or Surface Mining Act; and <b>(4)</b> 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 1,000,000 million British Thermal Units per year.
20.2.34 NMAC	Oil Burning Equipment: NO <sub>2</sub>	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.
20.2.37 and 20.2.36 NMAC	Petroleum Processing Facilities and Petroleum Refineries	N/A	N/A	<b>These regulations were repealed by the Environmental Improvement Board. If you had equipment subject to 20.2.37 NMAC before the repeal, your combustion emission sources are now subject to 20.2.61 NMAC.</b>

<a href="#">STATE REGULATIONS CITATION</a>	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.)
<a href="#">20.2.38 NMAC</a>	Hydrocarbon Storage Facility	Yes	OT1-OT4	The site uses a flare to comply with 20.2.38 NMAC.
<a href="#">20.2.39 NMAC</a>	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	FL1-3, RB1-3, ENG1-9, ENG11-12, HTR1	This regulation that limits opacity to 20% applies to Stationary Combustion Equipment, such as engines, boilers, heaters, and flares unless your equipment is subject to another state regulation that limits particulate matter such as 20.2.19 NMAC (see 20.2.61.109 NMAC).
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 resulting in the facility's classification as being a major source.
20.2.71 NMAC	Operating Permit Fees	Yes	Facility	This 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 and normally applies to the entire facility.
20.2.72 NMAC	Construction Permits	Yes	Facility	This facility is currently authorized under NSR permit 7474-M2, issued on February 11, 2022. Note: 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.

<u>STATE REGULATIONS CITATION</u>	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION: (You may delete instructions or statements that do not apply in the justification column to shorten the document.)
20.2.80 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	Yes	Units Subject to 40 CFR 63	See regulatory discussion in Federal Regulations Citation section.

**Example of a Table for Applicable FEDERAL REGULATIONS (Note: This is not an exhaustive list):**

<u>FEDERAL REGULATIONS CITATION</u>	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
40 CFR 50	NAAQS	Yes	Facility	Compliance with the requirements of the NSR permit indicates compliance with NAAQS.
NSPS 40 CFR 60, Subpart A	General Provisions	Yes	Units subject to 40 CFR 60	NSPS OOOOa: ENG1-ENG9; ENG11-ENG12; FUG NSPS JJJJ: ENG1-ENG9; ENG11-ENG12
NSPS 40 CFR60.40a, Subpart Da	Subpart Da, Performance Standards for <b>Electric Utility Steam Generating Units</b>	No	N/A	The facility does not operate any electric utility steam generating units.
NSPS 40 CFR60.40b Subpart Db	<b>Electric Utility Steam Generating Units</b>	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.

<u>FEDERAL REGU- LATIONS CITATION</u>	<b>Title</b>	<b>Applies? Enter Yes or No</b>	<b>Unit(s) or Facility</b>	<b>JUSTIFICATION:</b>
NSPS 40 CFR 60, Subpart Ka	Standards of Performance for <b>Storage Vessels for Petroleum Liquids</b> for which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and <b>Prior</b> 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 <b>Volatile Organic Liquid Storage Vessels</b> (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced <b>After</b> July 23, 1984	No	N/A	The hydrocarbons are stored in vessels with a design capacity less than 1,589.874 m <sup>3</sup> and are stored prior to custody transfer. §60.110b(d)(4)
NSPS 40 CFR 60.330 Subpart GG	<b>Stationary Gas Turbines</b>	No	N/A	The facility does not operate any stationary gas turbines.
NSPS 40 CFR 60, Subpart KKK	Leaks of VOC from <b>Onshore Gas Plants</b>	No	N/A	The facility is not a gas plant.
NSPS 40 CFR Part 60 Subpart LLL	Standards of Performance for <b>Onshore Natural Gas Processing: SO<sub>2</sub> Emissions</b>	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	Yes	ENG1- ENG9; ENG11- ENG12; 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



<u>FEDERAL REGU- LATIONS CITATION</u>	<b>Title</b>	<b>Applies? Enter Yes or No</b>	<b>Unit(s) or Facility</b>	<b>JUSTIFICATION:</b>
	Construction, Modification or Reconstruction Commenced After September 18, 2015			from fugitive components per 60.5365a(j) and will comply with 60.5397a. ENG1-ENG9 and ENG11-ENG12 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 JJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	Yes	ENG1- ENG9; ENG11- ENG12	ENG1-ENG9 and ENG11-ENG12 engines are non-emergency Spark Ignition engines.  ENG1-ENG9 and ENG11-ENG12 engines are manufactured after 7/1/2010 and have a maximum engine power greater than 500 HP. ENG1-ENG9 and ENG11- 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.
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 <b>Mercury</b>	No	N/A	The facility does not operate any affected sources.
NESHAP 40 CFR 61 Subpart V	National Emission Standards for <b>Equipment Leaks</b> (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-ENG9; ENG11-ENG12

<u>FEDERAL REGU- LATIONS CITATION</u>	<b>Title</b>	<b>Applies? Enter Yes or No</b>	<b>Unit(s) or Facility</b>	<b>JUSTIFICATION:</b>
MACT 40 CFR 63.760 Subpart HH	<b>Oil and Natural Gas Production Facilities</b>	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		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.
MACT 40 CFR 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines ( <b>RICE MACT</b> )	Yes	ENG1- ENG9; ENG11- ENG12	The site is a major source of HAP.  ENG1-ENG9 and ENG11-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.
40 CFR 64	<b>Compliance Assurance Monitoring</b>	No	N/A	The facility is not subject to CAM.
40 CFR 68	<b>Chemical</b>	No	N/A	The facility does not store any chemicals above threshold quantities.

<u>FEDERAL REGU- LATIONS CITATION</u>	<b>Title</b>	<b>Applies? Enter Yes or No</b>	<b>Unit(s) or Facility</b>	<b>JUSTIFICATION:</b>
	<b>Accident Prevention</b>			
Title IV – Acid Rain 40 CFR 72	<b>Acid Rain</b>	No	N/A	The facility does not have any units subject to the Acid Rain regulations.
Title IV – Acid Rain 40 CFR 73	<b>Sulfur Dioxide Allowance Emissions</b>	No	N/A	The facility does not have any units subject to the Acid Rain regulations.
Title IV-Acid Rain 40 CFR 75	<b>Continuous Emissions Monitoring</b>	No	N/A	The facility does not have any units subject to the Acid Rain regulations.
Title IV – Acid Rain 40 CFR 76	<b>Acid Rain Nitrogen Oxides Emission Reduction Program</b>	No	N/A	The facility does not have any units subject to the Acid Rain regulations.
Title VI – 40 CFR 82	<b>Protection of Stratospheric Ozone</b>	No	N/A	The facility does not service, maintain, or repair equipment containing refrigerants.

**Tab 14**  
**Section 14 - Operational Plan to Mitigate Emissions**

# Section 14

## Operational Plan to Mitigate Emissions

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

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- Title V Sources** (20.2.70 NMAC): By checking this box and certifying this application the permittee certifies that it has developed an **Operational Plan to Mitigate Emissions During Startups, Shutdowns, and Emergencies** defining the measures to be taken to mitigate source emissions during startups, shutdowns, and emergencies as required by 20.2.70.300.D.5(f) and (g) NMAC. This plan shall be kept on site to be made available to the Department upon request. This plan should not be submitted with this application.
- NSR** (20.2.72 NMAC), **PSD** (20.2.74 NMAC) & **Nonattainment** (20.2.79 NMAC) **Sources**: By checking this box and certifying this application the permittee certifies that it has developed an **Operational Plan to Mitigate Source Emissions During Malfunction, Startup, or Shutdown** defining the measures to be taken to mitigate source emissions during malfunction, startup, or shutdown as required by 20.2.72.203.A.5 NMAC. This plan shall be kept on site to be made available to the Department upon request. This plan should not be submitted with this application.
- Title V** (20.2.70 NMAC), **NSR** (20.2.72 NMAC), **PSD** (20.2.74 NMAC) & **Nonattainment** (20.2.79 NMAC) **Sources**: By checking this box and certifying this application the permittee certifies that it has established and implemented a Plan to Minimize Emissions During Routine or Predictable Startup, Shutdown, and Scheduled Maintenance through work practice standards and good air pollution control practices as required by 20.2.7.14.A and B NMAC. This plan shall be kept on site or at the nearest field office to be made available to the Department upon request. This plan should not be submitted with this application.
- 

Emissions during startup, shutdown, maintenance, and emergencies will be minimized through the site specific Startup, Shutdown, and Malfunction Plan (SSMP) as required by 40 CFR §63.6(e)(3), 20.2.70.300.D.5(g) NMAC, 20.2.72.203.A.5 NMAC, and 20.2.7.14.A NMAC.

**Tab 15**  
**Section 15 - Alternative Operating Scenarios**

# Section 15

## Alternative Operating Scenarios

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

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**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](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).

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XTO is not proposing any alternative operating scenarios.

**Tab 16**  
**Section 16 - Air Dispersion Modeling**



# 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](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. <b>Note:</b> 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. Modeling was approved as part of issuance of NSR Permit 7681-M2 (issued February 11, 2022).

**Tab 17**  
**Section 17 - Compliance Test History**

# 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 Serial No.	Test Description	Test Date
ENG1	Tested as required by 40 CFR 60 Subpart JJJJ and 40 CFR 63 Subpart ZZZZ for NO <sub>x</sub> , CO, VOC, and HCHO	3/31/21 11/17/21
ENG2	Tested as required by 40 CFR 60 Subpart JJJJ and 40 CFR 63 Subpart ZZZZ for NO <sub>x</sub> , CO, VOC, and HCHO	3/31/21 11/16/21
ENG3	Tested as required by 40 CFR 60 Subpart JJJJ and 40 CFR 63 Subpart ZZZZ for NO <sub>x</sub> , CO, VOC, and HCHO	5/18/21 11/16/21
ENG4	Tested as required by 40 CFR 60 Subpart JJJJ and 40 CFR 63 Subpart ZZZZ for NO <sub>x</sub> , CO, VOC, and HCHO	5/19/21 11/17/21
ENG5	Tested as required by 40 CFR 60 Subpart JJJJ and 40 CFR 63 Subpart ZZZZ for NO <sub>x</sub> , CO, VOC, and HCHO	5/19/21 11/18/21
ENG6	Tested as required by 40 CFR 60 Subpart JJJJ and 40 CFR 63 Subpart ZZZZ for NO <sub>x</sub> , CO, VOC, and HCHO	3/31/21 11/18/21
ENG11	Tested as required by 40 CFR 60 Subpart JJJJ and 40 CFR 63 Subpart ZZZZ for NO <sub>x</sub> , CO, VOC, and HCHO	5/18/21 11/15/21
ENG12	Tested as required by 40 CFR 60 Subpart JJJJ and 40 CFR 63 Subpart ZZZZ for NO <sub>x</sub> , CO, VOC, and HCHO	5/18/21 11/15/21

**Tab 18**

**Section 18 - Addendum for Streamline Applications  
(Not Applicable)**

# Section 18

## Addendum for Streamline Applications

Do not print this section unless this is a streamline application.

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**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.**

---

This section is not applicable since this is not a Streamline Permit Application.

**Tab 19**

**Section 19 - Requirements for Title V Program**

# 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.
- 

### **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 Spartan 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.

---

The sources operated at the Spartan Compressor Station currently meet the applicable requirements as detailed in Section 13 of this Title V application.

---

**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 Spartan 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.

---

XTO Energy Inc. requests the Department schedule compliance reporting to start either July 1 or January 1 in order to align with other federal reporting programs. Annual compliance certification is requested to be completed annually for the period January 1 through December 31. If this is not possible, please schedule compliance reporting to match that of NSR Permit 7681-M2.

---

**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).

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**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 Spartan 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 Spartan 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 Spartan Compressor Station is not subject to 40 CFR 68, Chemical Accident Prevention Provisions; consequently, a Risk Management Plan (RMP) is not required.

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## 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.)

Texas (13.0 kilometers).

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**19.9 - Responsible Official**

See Section 1-H of this permit application.

**Tab 20**  
**Section 20 - Other Relevant Information**

# Section 20

## Other Relevant Information

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**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.

**Tab 21**

**Section 21 - Addendum for Landfill Applications  
(Not Applicable)**

# Section 21

## Addendum for Landfill Applications

Do not print this section unless this is a landfill application.

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**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/>

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This is not applicable.

**Tab 22**  
**Section 22 - Certification**

# Section 22: Certification

Company Name: XTO Energy Inc.

I, David Scott, 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 31<sup>st</sup> day of May, 2022, upon my oath or affirmation, before a notary of the State of

Texas

[Signature]  
\*Signature

5/31/2022  
Date

David Scott  
Printed Name

General Manager Permian Delaware BU  
Title

Scribed and sworn before me on this 31<sup>st</sup> day of May, 2022

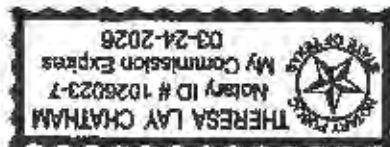
My authorization as a notary of the State of Texas expires on the

26<sup>th</sup> day of March, 2026

[Signature]  
Notary's Signature

May 31, 2022  
Date

Theresa Lay Chatham  
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.



**Tab 23**  
**Section 23 - UA4 (Not Applicable)**