NMED AIR QUALITY NSR APPLICATION

COTTON DRAW MIDSTREAM, LLC
SONGBIRD COMPRESSOR STATION

Prepared By:

Adam Erenstein – Manager of Consulting Services

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March 2023

Project 233201.0021

Trinity Consultants

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March 24, 2023

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

RE: NSR Application
Cotton Draw Midstream, LLC – Songbird Compressor Station

Permit Programs Manager:

Cotton Draw Midstream, LLC is submitting an NSR application for Songbird Compressor Station. The facility is located approximately 25.60 miles southeast of Loving, New Mexico. The facility will have a total production of 95 MMscf of gas per day and includes eight (8) compressor engines, one (1) gunbarrel separator, three (3) condensate storage tanks, three (3) produced water storage tanks, one (1) glycol dehydrator, two (2) combustors, and one (1) flare.

The format and content of this application are consistent with the Bureau's current policy regarding NSR applications; it is a complete application package using the most current application form. Enclosed is a hard copy of the application, including the original certification. Please feel free to contact either myself at (505) 266-6611 or by email at aerenstein@trinityconsultants.com if you have any questions regarding this application. Alternatively, you may contact Aaron Yotter, EHS Professional for Cotton Draw Midstream, LLC, at (405) 228-7270 or by email at Aaron.Yotter@dvn.com.

Sincerely,

Adam Erenstein
Manager of Consulting Services

Cc: Aaron Yotter (EHS Professional, Cotton Draw Midstream, LLC)
Trinity Project File 233201.0021

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

Universal Air Quality Permit Application

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

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

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

Acknowledgements:

☑ I acknowledge that a pre-application meeting is available to me upon request. ☐ Title V Operating, Title IV Acid Rain, and NPR applications have no fees.

☑ $500 NSR application Filing Fee enclosed OR ☐ The full permit fee associated with 10 fee points (required w/ streamline applications).

☐ Check No.: _____ in the amount of $500

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

☑ I acknowledge there is an annual fee for permits in addition to the permit review fee: www.env.nm.gov/air-quality/permit-fees-2/.

☐ This facility qualifies for the small business fee reduction per 20.2.75.11.C. NMAC. The full $500.00 filing fee is included with this application and I understand the fee reduction will be calculated in the balance due invoice. The Small Business Certification Form has been previously submitted or is included with this application. (Small Business Environmental Assistance Program Information: www.env.nm.gov/air-quality/small-biz-eap-2/.)

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

Section 1 – Facility Information

Section 1-A: Company Information

		AI # if known (see 1st 3 to 5 #s of permit IDEA ID No.):	Updating Permit/NOI #:
1	Facility Name: Songbird 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): 22.14 mi Southeast of Loving, Eddy County, New Mexico 88256.		
2	Plant Operator Company Name: Cotton Draw Midstream, LLC	Phone/Fax: (405) 228-7270 / NA	
a	Plant Operator Address: 333 West Sheridan Avenue, Oklahoma City, Oklahoma 73102.		

b	Plant Operator's New Mexico Corporate ID or Tax ID:	
3	Plant Owner(s) name(s): Cotton Draw Midstream, LLC	Phone/Fax: (405) 228-7270 / NA
a	Plant Owner(s) Mailing Address(s): 333 West Sheridan Avenue, Oklahoma City, Oklahoma 73102.	
4	Bill To (Company): Cotton Draw Midstream, LLC	Phone/Fax: (405) 228-7270 / NA
a	Mailing Address: 333 West Sheridan Avenue, Oklahoma City, Oklahoma 73102.	E-mail: aaron.yotter@dvn.com
5	☐ Preparer: ☑ Consultant: Trinity Consultants, Inc.	Phone/Fax: (505) 266-6611 / N/A
a	Mailing Address: 9400 Holly Ave. NE, Bldg. 3, Ste B, Albuquerque, NM 87122	E-mail: aerenstein@trinityconsultants.com
6	Plant Operator Contact: Justin Porter	Phone/Fax: (405) 228-8704 / NA
a	Address: 333 West Sheridan Avenue, Oklahoma City, Oklahoma 73102.	E-mail: justin.porter@dvn.com
7	Air Permit Contact: Aaron Yotter	Title: EHS Professional
a	E-mail: aaron.yotter@dvn.com	Phone/Fax: (405) 228-7270 / NA
b	Mailing Address: 333 West Sheridan Avenue, Oklahoma City, Oklahoma 73102.	
c	The designated Air permit Contact will receive all official correspondence (i.e. letters, permits) from the Air Quality Bureau.	

Section 1-B: Current Facility Status

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

Section 1-C: Facility Input Capacity & Production Rate

1	What is the facility's maximum input capacity, specify units (reference here and list capacities in Section 20, if more room is required)			
a	Current	Hourly: NA	Daily: NA	Annually: NA
b	Proposed	Hourly: 3.96 MMscf/hr	Daily: 95 MMscf/d	Annually: 34,675 MMscf/yr
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: NA	Daily: NA	Annually: NA

b	Proposed	Hourly: 3.96 MMscf/hr	Daily: 95 MMscf/d	Annually: 34,675 MMscf/yr

Section 1-D: Facility Location Information

1	Section: 30	Range: 32E	Township: 25S	County: Lea	Elevation (ft): 3381
2	UTM Zone: ☐ 12 or ☑ 13			Datum: ☐ NAD 27 ☐ NAD 83 ☑ WGS 84	
a	UTM E (in meters, to nearest 10 meters): 621411 m			UTM N (in meters, to nearest 10 meters): 3553028 m	
b	**AND** Latitude (deg., min., sec.): 32° 6' 25.44"N			Longitude (deg., min., sec.): 103° 42' 47.45"W	
3	Name and zip code of nearest New Mexico town: Loving, New Mexico 88256.				
4	Detailed Driving Instructions from nearest NM town (attach a road map if necessary): Starting from Loving, head south on N 4th St. for 0.2 mi toward W cedar St., turn left at 3rd cross street onto W Ash Rd, continue for 1.7 mi and turn left onto State Hwy 387, after 2 mi turn right onto NM-31 and continue for 4.5 mi, again turn right onto NM-128 E, continue for 22.8 mi and then turn right onto Monsanto Ln, after 2.1 mi turn onto first left and continue south for 1.5 mi, turn right onto unmarked road and continue for 0.4 mi. The facility will be on the right.				
5	The facility is 25.60 miles southeast of Loving, NM 88256.				
6	Status of land at facility (check one): ☐ Private ☐ Indian/Pueblo ☑ Federal BLM ☐ Federal Forest Service ☐ Other (specify)				
7	List all municipalities, Indian tribes, and counties within a ten (10) mile radius (20.2.72.203.B.2 NMAC) of the property on which the facility is proposed to be constructed or operated: Eddy County, and Lea County				
8	**20.2.72** NMAC applications **only**: Will the property on which the facility is proposed to be constructed or operated be closer than 50 km (31 miles) to other states, Bernalillo County, or a Class I area (see www.env.nm.gov/air-quality/modeling-publications/)? ☐ Yes ☑ No (20.2.72.206.A.7 NMAC) If yes, list all with corresponding distances in kilometers:				
9	Name nearest Class I area: **Carlsbad Caverns National Park**				
10	Shortest distance (in km) from facility boundary to the boundary of the nearest Class I area (to the nearest 10 meters): 68.38 km				
11	Distance (meters) from the perimeter of the Area of Operations (AO is defined as the plant site inclusive of all disturbed lands, including mining overburden removal areas) to nearest residence, school or occupied structure: 33,180 m				
12	Method(s) used to delineate the Restricted Area: Fencing, gates and signage. "**Restricted Area**" is an area to which public entry is effectively precluded. Effective barriers include continuous fencing, continuous walls, or other continuous barriers approved by the Department, such as rugged physical terrain with steep grade that would require special equipment to traverse. If a large property is completely enclosed by fencing, a restricted area within the property may be identified with signage only. Public roads cannot be part of a Restricted Area.				
13	Does the owner/operator intend to operate this source as a portable stationary source as defined in 20.2.72.7.X NMAC? ☐ Yes ☑ No A portable stationary source is not a mobile source, such as an automobile, but a source that can be installed permanently at one location or that can be re-installed at various locations, such as a hot mix asphalt plant that is moved to different job sites.				
14	Will this facility operate in conjunction with other air regulated parties on the same property? ☑ No ☐ Yes If yes, what is the name and permit number (if known) of the other facility?				

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

1	Facility **maximum** operating ($\frac{\text{hours}}{\text{day}}$): 24	($\frac{\text{days}}{\text{week}}$): 7	($\frac{\text{weeks}}{\text{year}}$): 52	($\frac{\text{hours}}{\text{year}}$): 8760		
2	Facility's maximum daily operating schedule (if less than 24 $\frac{\text{hours}}{\text{day}}$)? Start: N/A		☑ AM ☐ PM	End: N/A	☐ AM ☑ PM	
3	Month and year of anticipated start of construction: Upon receipt of permit					
4	Month and year of anticipated construction completion: N/A					
5	Month and year of anticipated startup of new or modified facility: N/A					
6	Will this facility operate at this site for more than one year? ☑ Yes ☐ No					

Section 1-F: Other Facility Information

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

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

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

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): Justin Porter		Phone: (405) 228-8704
a	R.O. Title: Asset Director	R.O. e-mail: justin.porter@dvn.com	
b	R. O. Address: 333 West Sheridan Avenue, Oklahoma City, Oklahoma 73102.		
2	Alternate Responsible Official (20.2.70.300.D.2 NMAC): Brent Bartlett		Phone: (405) 228-7233
a	A. R.O. Title: Supervisor Construction/Facilities Engineer	A. R.O. e-mail: brent.bartlett@dvn.com	
b	A. R. O. Address: 333 West Sheridan Avenue, Oklahoma City, Oklahoma 73102.		
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): NA		
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.): Devon Energy		
a	Address of Parent Company: 333 West Sheridan Avenue, Oklahoma City, Oklahoma 73102.		
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.): NA		
6	Telephone numbers & names of the owners' agents and site contacts familiar with plant operations: (405) 228-7270 & Aaron Yotter		

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 (~12.01 km)

Section 1-I – Submittal Requirements

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

Hard Copy Submittal Requirements:

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

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

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

Electronic files sent by (check one):

☐ CD/DVD attached to paper application

☑ secure electronic transfer. Air Permit Contact Name Adam Erenstein, Email AErenstein@trinityconsultants.com Phone number (505) 266-6611.

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

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

5) If **air dispersion modeling** is required by the application type, include the **NMED Modeling Waiver** and/or electronic air dispersion modeling report, input, and output files. The dispersion modeling ***summary report only*** should be submitted as hard copy(ies) unless otherwise indicated by the Bureau.

6) If the applicant submits the electronic files on CD and the application is subject to PSD review under 20.2.74 NMAC (PSD) or NNSR under 20.2.79 NMC include,
   a. one additional CD copy for US EPA,
   b. one additional CD copy for each federal land manager affected (NPS, USFS, FWS, USDI) and,
   c. one additional CD copy for each affected regulatory agency other than the Air Quality Bureau.

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

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

1) All required electronic documents shall be submitted as 2 separate CDs or submitted through the AQB secure file transfer service. Submit a single PDF document of the entire application as submitted and the individual documents comprising the application.

2) The documents should also be submitted in Microsoft Office compatible file format (Word, Excel, etc.) allowing us to access the text and formulas in the documents (copy & paste). Any documents that cannot be submitted in a Microsoft Office compatible format shall be saved as a PDF file from within the electronic document that created the file. If you are unable to provide Microsoft office compatible electronic files or internally generated PDF files of files (items that were not created electronically: i.e. brochures, maps, graphics, etc,), submit these items in hard copy format. We must be able to review the formulas and inputs that calculated the emissions.

3) It is preferred that this application form be submitted as 4 electronic files (3 MSWord docs: Universal Application section 1 [UA1], Universal Application section 3-19 [UA3], and Universal Application 4, the modeling report [UA4]) and 1 Excel file of the tables (Universal Application section 2 [UA2]). Please include as many of the 3-19 Sections as practical in a single MS Word electronic document. Create separate electronic file(s) if a single file becomes too large or if portions must be saved in a file format other than MS Word.

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

Table of Contents

Table 2-A: Regulated Emission Sources

Unit and stack numbering must correspond throughout the application package. If applying for a NOI under 20.2.73 NMAC, equipment exemptions under 2.72.202 NMAC do not apply.

Unit Number[1]	Source Description	Make	Model #	Serial #	Manufacturer's Rated Capacity[3] (Specify Units)	Requested Permitted Capacity[3] (Specify Units)	Date of Manufacture[2] / Date of Construction/ Reconstruction[2]	Controlled by Unit # / Emissions vented to Stack #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB)[4]	Replacing Unit No.
ENG-1	Compressor Engine	Caterpillar	G3608	TBD	2500 hp	2500 hp	TBD TBD	CAT-1 ENG-1	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
ENG-2	Compressor Engine	Caterpillar	G3608	TBD	2500 hp	2500 hp	TBD TBD	CAT-2 ENG-2	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
ENG-3	Compressor Engine	Caterpillar	G3608	TBD	2500 hp	2500 hp	TBD TBD	CAT-3 ENG-3	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
ENG-4	Compressor Engine	Caterpillar	G3608	TBD	2500 hp	2500 hp	TBD TBD	CAT-4 ENG-4	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
ENG-5	Compressor Engine	Caterpillar	G3608	TBD	2500 hp	2500 hp	TBD TBD	CAT-5 ENG-5	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
ENG-6	Compressor Engine	Caterpillar	G3608	TBD	2500 hp	2500 hp	TBD TBD	CAT-6 ENG-6	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
ENG-7	Compressor Engine	Caterpillar	G3608	TBD	2500 hp	2500 hp	TBD TBD	CAT-7 ENG-7	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
ENG-8	Compressor Engine	Caterpillar	G3608	TBD	2500 hp	2500 hp	TBD TBD	CAT-8 ENG-8	20200254	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
TK-1	Gunbarrel Separator	N/A	N/A	TBD	750 bbl	750 bbl	TBD TBD	ECD-2 ECD-2	31000129	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
TK-2	Condensate Tank	N/A	N/A	TBD	400 bbl	400 bbl	TBD TBD	ECD-2 ECD-2	40400312	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
TK-3	Condensate Tank	N/A	N/A	TBD	400 bbl	400 bbl	TBD TBD	ECD-2 ECD-2	40400312	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
TK-4	Condensate Tank	N/A	N/A	TBD	400 bbl	400 bbl	TBD TBD	ECD-2 ECD-2	40400312	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
TK-5	Produced Water Tank	N/A	N/A	TBD	400 bbl	400 bbl	TBD TBD	ECD-2 ECD-2	40400315	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
TK-6	Produced Water Tank	N/A	N/A	TBD	400 bbl	400 bbl	TBD TBD	ECD-2 ECD-2	40400315	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A

Unit Number[1]	Source Description	Make	Model #	Serial #	Manufacturer's Rated Capacity[3] (Specify Units)	Requested Permitted Capacity[3] (Specify Units)	Date of Manufacture[2] / Date of Construction/ Reconstruction[2]	Controlled by Unit # / Emissions vented to Stack #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB)[4]	Replacing Unit No.
TK-7	Produced Water Tank	N/A	N/A	TBD	400 bbl	400 bbl	TBD TBD	ECD-2 ECD-2	40400315	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
L-1	Condensate and produced water Loading	N/A	N/A	N/A	N/A	N/A	TBD TBD	ECD-2 ECD-2	40600132	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
DEHY-1	TEG Dehydrator	Dickson	N/A	TBD	100 MMSCFD	100 MMSCFD	TBD TBD	ECD-1 ECD-1	31000227	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
ECD-1	Combustor	SpiralX	N/A	N/A	31 MSCFD	12.81 MSCFD	TBD TBD	N/A ECD-1	31000205	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
ECD-2	Combustor	MRW Technologies Inc.	N/A	N/A	250 MSCFD	62.53 MSCFD	TBD TBD	N/A ECD-2	31000205	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
FL-1 SSM	Maintenance Flare	Mission	N/A	N/A	2.84 MMSCFD	2.84 MMSCFD	TBD TBD	N/A FL-1 SSM	31000205	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
FUG	Fugitive Emission	N/A	N/A	N/A	N/A	N/A	TBD TBD	N/A N/A	31000220	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
SSM/M	Startup, Shutdown, and Maintenance / Malfunction	N/A	N/A	N/A	N/A	N/A	TBD TBD	N/A N/A	31088811	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A

[1] Unit numbers must correspond to unit numbers in the previous permit unless a complete cross reference table of all units in both permits is provided.

[2] Specify dates required to determine regulatory applicability.

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

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

Table 2-B: Exempted Equipment (20.2.72 NMAC)

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

Unit Number	Source Description	Manufacturer	Model No.	Max Capacity	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5)	Date of Manufacture /Reconstruction[2]	For Each Piece of Equipment, Check One
			Serial No.	Capacity Units	Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Installation /Construction[2]	
RBL-1	TEG Dehydrator Reboiler	N/A	TBD	1.10 MMBTU/hr	20.2.72.202.B.5	TBD	☐ Existing (unchanged) ☐ To be Removed ☑ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			TBD	1.10 MMBTU/hr		TBD	
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced

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

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

Table 2-C: Emissions Control Equipment

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

Control Equipment Unit No.	Control Equipment Description	Date Installed	Controlled Pollutant(s)	Controlling Emissions for Unit Number(s)[1]	Efficiency (% Control by Weight)	Method used to Estimate Efficiency
CAT-1	Oxidation Catalyst	TBD	CO, VOC, HCHO	ENG-1	CO: 96% VOC: 70% HCHO: 85%	Mfg. Specs.
CAT-2	Oxidation Catalyst	TBD		ENG-2		Mfg. Specs.
CAT-3	Oxidation Catalyst	TBD		ENG-3		Mfg. Specs.
CAT-4	Oxidation Catalyst	TBD		ENG-4		Mfg. Specs.
CAT-5	Oxidation Catalyst	TBD		ENG-5		Mfg. Specs.
CAT-6	Oxidation Catalyst	TBD		ENG-6		Mfg. Specs.
CAT-7	Oxidation Catalyst	TBD		ENG-7		Mfg. Specs.
CAT-8	Oxidation Catalyst	TBD		ENG-8		Mfg. Specs.
ECD-1	Combustor	TBD	VOC, HAP	DEHY-1	98%	Mfg. Specs.
ECD-2	Combustor	TBD	VOC, HAP	TK-1 through TK-7, and Truck loading (condensate and produced water)	98%	Mfg. Specs.
FL-1 SSM	Flare	TBD	VOC, HAP	SSM/M (compressor blowdown events)	98%	Mfg. Specs.

[1] 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)

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

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

Unit No.	NOx		CO		VOC		SOx		PM[1]		PM10[1]		PM2.5[1]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
ENG-1	1.65	7.24	19.35	84.73	7.08	31.03	0.86	3.75	0.19	0.83	0.19	0.83	0.19	0.83	-	-	-	-
ENG-2	1.65	7.24	19.35	84.73	7.08	31.03	0.86	3.75	0.19	0.83	0.19	0.83	0.19	0.83	-	-	-	-
ENG-3	1.65	7.24	19.35	84.73	7.08	31.03	0.86	3.75	0.19	0.83	0.19	0.83	0.19	0.83	-	-	-	-
ENG-4	1.65	7.24	19.35	84.73	7.08	31.03	0.86	3.75	0.19	0.83	0.19	0.83	0.19	0.83	-	-	-	-
ENG-5	1.65	7.24	19.35	84.73	7.08	31.03	0.86	3.75	0.19	0.83	0.19	0.83	0.19	0.83	-	-	-	-
ENG-6	1.65	7.24	19.35	84.73	7.08	31.03	0.86	3.75	0.19	0.83	0.19	0.83	0.19	0.83	-	-	-	-
ENG-7	1.65	7.24	19.35	84.73	7.08	31.03	0.86	3.75	0.19	0.83	0.19	0.83	0.19	0.83	-	-	-	-
ENG-8	1.65	7.24	19.35	84.73	7.08	31.03	0.86	3.75	0.19	0.83	0.19	0.83	0.19	0.83	-	-	-	-
TK-1	-	-	-	-	88.17	386.18	-	-	-	-	-	-	-	-	-	-	-	-
TK-2	-	-	-	-	8.24	36.09	-	-	-	-	-	-	-	-	-	-	-	-
TK-3	-	-	-	-	8.24	36.09	-	-	-	-	-	-	-	-	-	-	-	-
TK-4	-	-	-	-	8.24	36.09	-	-	-	-	-	-	-	-	-	-	-	-
TK-5	-	-	-	-	0.05	0.23	-	-	-	-	-	-	-	-	-	-	-	-
TK-6	-	-	-	-	0.05	0.23	-	-	-	-	-	-	-	-	-	-	-	-
TK-7	-	-	-	-	0.05	0.23	-	-	-	-	-	-	-	-	-	-	-	-
L-1	-	-	-	-	0.83	3.65	-	-	-	-	-	-	-	-	-	-	-	-
DEHY-1	-	-	-	-	47.13	206.45	-	-	-	-	-	-	-	-	-	-	-	-
ECD-1[2]	0.01	0.05	0.02	0.11	-	-	0.00	0.01	-	-	-	-	-	-	-	-	-	-
ECD-2[2]	0.01	0.05	0.02	0.11	-	-	0.01	0.07	-	-	-	-	-	-	-	-	-	-
FUG	-	-	-	-	1.70	7.46	-	-	-	-	-	-	-	-	-	-	-	-
Totals	13.25	58.05	154.81	678.09	219.39	960.94	6.87	30.10	1.51	6.61	1.51	6.61	1.51	6.61	-	-	-	-

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

[2] Combustion emissions from pilot fuel combustion only

Table 2-E: Requested Allowable Emissions

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

Unit No.	NOx		CO		VOC		SOx		PM[1]		PM10[1]		PM2.5[1]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
ENG-1	1.65	7.24	0.77	3.39	2.13	9.33	0.86	3.75	0.19	0.83	0.19	0.83	0.19	0.83	-	-	-	-
ENG-2	1.65	7.24	0.77	3.39	2.13	9.33	0.86	3.75	0.19	0.83	0.19	0.83	0.19	0.83	-	-	-	-
ENG-3	1.65	7.24	0.77	3.39	2.13	9.33	0.86	3.75	0.19	0.83	0.19	0.83	0.19	0.83	-	-	-	-
ENG-4	1.65	7.24	0.77	3.39	2.13	9.33	0.86	3.75	0.19	0.83	0.19	0.83	0.19	0.83	-	-	-	-
ENG-5	1.65	7.24	0.77	3.39	2.13	9.33	0.86	3.75	0.19	0.83	0.19	0.83	0.19	0.83	-	-	-	-
ENG-6	1.65	7.24	0.77	3.39	2.13	9.33	0.86	3.75	0.19	0.83	0.19	0.83	0.19	0.83	-	-	-	-
ENG-7	1.65	7.24	0.77	3.39	2.13	9.33	0.86	3.75	0.19	0.83	0.19	0.83	0.19	0.83	-	-	-	-
ENG-8	1.65	7.24	0.77	3.39	2.13	9.33	0.86	3.75	0.19	0.83	0.19	0.83	0.19	0.83	-	-	-	-
TK-1	-	-	-	-	1.76	7.72	-	-	-	-	-	-	-	-	-	-	-	-
TK-2	-	-	-	-	0.16	0.72	-	-	-	-	-	-	-	-	-	-	-	-
TK-3	-	-	-	-	0.16	0.72	-	-	-	-	-	-	-	-	-	-	-	-
TK-4	-	-	-	-	0.16	0.72	-	-	-	-	-	-	-	-	-	-	-	-
TK-5	-	-	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-
TK-6	-	-	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-
TK-7	-	-	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-
L-1	-	-	-	-	0.24	1.04	-	-	-	-	-	-	-	-	-	-	-	-
DEHY-1[2]	-	-	-	-	0.94	4.13	-	-	-	-	-	-	-	-	-	-	-	-
ECD-1	0.18	0.77	0.35	1.54	0.92	4.05	0.00	0.01	-	-	-	-	-	-	-	-	-	-
ECD-2	0.91	3.96	1.81	7.91	2.49	10.93	0.01	0.07	-	-	-	-	-	-	-	-	-	-
FUG	-	-	-	-	1.70	7.46	-	-	-	-	-	-	-	-	-	-	-	-
Totals	14.31	62.68	8.35	36.57	25.60	112.13	6.87	30.10	1.50	6.61	1.50	6.61	1.50	6.61	-	-	-	-

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

2 The TEG dehydrator regenerator emissions is routed to a combustor (Unit ECD-1). 98% of the emissions are captured with 98% DRE.

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

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

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

Unit No.	NOx		CO		VOC		SOx		PM[2]		PM10[2]		PM2.5[2]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
SSM/M	0.13	0.55	0.25	1.09	40.26	8.51	0.004	0.02	-	-	-	-	-	-	-	-	-	-
Totals	0.13	0.55	0.25	1.09	40.26	8.51	0.004	0.02	-	-	-	-	-	-	-	-	-	-

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

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

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

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

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

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

Table 2-H: Stack Exit Conditions

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

Stack Number	Serving Unit Number(s) from Table 2-A	Orientation (H-Horizontal V=Vertical)	Rain Caps (Yes or No)	Height Above Ground (ft)	Temp. (F)	Flow Rate		Moisture by Volume (%)	Velocity (ft/sec)	Inside Diameter (ft)
						(acfs)	(dscfs)			
ENG-1	ENG-1	V	No	23.00	820	268.93	-	-	193.58	1.33
ENG-2	ENG-2	V	No	23.00	820	268.93	-	-	193.58	1.33
ENG-3	ENG-3	V	No	23.00	820	268.93	-	-	193.58	1.33
ENG-4	ENG-4	V	No	23.00	820	268.93	-	-	193.58	1.33
ENG-5	ENG-5	V	No	23.00	820	268.93	-	-	193.58	1.33
ENG-6	ENG-6	V	No	23.00	820	268.93	-	-	193.58	1.33
ENG-7	ENG-7	V	No	23.00	820	268.93	-	-	193.58	1.33
ENG-8	ENG-8	V	No	23.00	820	268.93	-	-	193.58	1.33
ECD-1	DEHY-1	V	No	23.42	1400	981.58	-	-	12.34	5.00
ECD-2	TK-1 Through TK-7 and L-1	V	No	35.00	1600	4125.35	-	-	38.70	5.50

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

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

Stack No.	Unit No.(s)	Total HAPs		Formaldehyde ☑ HAP		Acetaldehyde ☑ HAP		Acrolein ☑ HAP		n-Hexane ☑ HAP		Benzene ☑ HAP		Toluene ☑ HAP		Ethylbenzene ☑ HAP		Xylenes ☑ HAP	
		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
ENG-1	ENG-1	0.05	0.22	0.13	0.58	0.20	0.85	0.12	0.53	0.03	0.11	0.01	0.04	0.01	0.04	9.27E-04	4.06E-03	4.29E-03	0.02
ENG-2	ENG-2	0.05	0.22	0.13	0.58	0.20	0.85	0.12	0.53	0.03	0.11	0.01	0.04	0.01	0.04	9.27E-04	4.06E-03	4.29E-03	0.02
ENG-3	ENG-3	0.05	0.22	0.13	0.58	0.20	0.85	0.12	0.53	0.03	0.11	0.01	0.04	0.01	0.04	9.27E-04	4.06E-03	4.29E-03	0.02
ENG-4	ENG-4	0.05	0.22	0.13	0.58	0.20	0.85	0.12	0.53	0.03	0.11	0.01	0.04	0.01	0.04	9.27E-04	4.06E-03	4.29E-03	0.02
ENG-5	ENG-5	0.05	0.22	0.13	0.58	0.20	0.85	0.12	0.53	0.03	0.11	0.01	0.04	0.01	0.04	9.27E-04	4.06E-03	4.29E-03	0.02
ENG-6	ENG-6	0.05	0.22	0.13	0.58	0.20	0.85	0.12	0.53	0.03	0.11	0.01	0.04	0.01	0.04	9.27E-04	4.06E-03	4.29E-03	0.02
ENG-7	ENG-7	0.05	0.22	0.13	0.58	0.20	0.85	0.12	0.53	0.03	0.11	0.01	0.04	0.01	0.04	9.27E-04	4.06E-03	4.29E-03	0.02
ENG-8	ENG-8	0.05	0.22	0.13	0.58	0.20	0.85	0.12	0.53	0.03	0.11	0.01	0.04	0.01	0.04	9.27E-04	4.06E-03	4.29E-03	0.02
TK-1	TK-1	0.10	0.46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-2	TK-2	0.01	0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-3	TK-3	0.01	0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-4	TK-4	1.26E-02	5.54E-02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-5	TK-5	2.29E-04	1.00E-03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-6	TK-6	2.29E-04	1.00E-03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-7	TK-7	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L-1	L-1	0.07	0.29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DEHY-1[1]	DEHY-1[1]	0.40	1.76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ECD-1	ECD-1	0.39	1.72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ECD-2	ECD-2	1.54E-01	0.67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FUG	FUG	0.09	0.37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSM/M	SSM/M	8.00E-02	0.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals:		1.73	7.58	1.06	4.63	1.56	6.84	0.96	4.20	0.21	0.91	0.08	0.36	0.08	0.33	0.01	0.03	0.03	0.15

1 The TEG dehydrator regenerator emissions is routed to a combustor (Unit ECD-1). 98% of the emissions are captured with 98% DRE.

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

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

Tank No.	SCC Code	Material Name	Composition	Liquid Density (lb/gal)	Vapor Molecular Weight (lb/lb*mol)	Average Storage Conditions		Max Storage Conditions	
						Temperature (°F)	True Vapor Pressure (psia)	Temperature (°F)	True Vapor Pressure (psia)
TK-2	40400312	Condensate	Mixed Hydrocarbons	Unknown	49.55	61.7	12.98	75.8	12.98
TK-3	40400312	Condensate	Mixed Hydrocarbons	Unknown	49.55	61.7	12.98	75.8	12.98
TK-4	40400312	Condensate	Mixed Hydrocarbons	Unknown	49.55	61.7	12.98	75.8	12.98
TK-5	40400315	Produced Water	Water and Mixed Hydrocarbons	62.46	40.52	61.7	12.78	75.8	12.78
TK-6	40400315	Produced Water	Water and Mixed Hydrocarbons	62.46	40.52	61.7	12.78	75.8	12.78
TK-7	40400315	Produced Water	Water and Mixed Hydrocarbons	62.46	40.52	61.7	12.78	75.8	12.78

Table 2-J: Fuel

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

Unit No.	Fuel Type (low sulfur Diesel, ultra low sulfur diesel, Natural Gas, Coal, …)	Fuel Source: purchased commercial, pipeline quality natural gas, residue gas, raw/field natural gas, process gas (e.g. SRU tail gas) or other	Specify Units				
			Lower Heating Value	Hourly Usage (MMSCF/hr)	Annual Usage (MMSCF/yr)	% Sulfur	% Ash
ENG-1	Natural Gas	Natural Gas	1143	0.01	131.37	2 gr S/ 100 scf	-
ENG-2	Natural Gas	Natural Gas	1143	0.01	131.37	2 gr S/ 100 scf	-
ENG-3	Natural Gas	Natural Gas	1143	0.01	131.37	2 gr S/ 100 scf	-
ENG-4	Natural Gas	Natural Gas	1143	0.01	131.37	2 gr S/ 100 scf	-
ENG-5	Natural Gas	Natural Gas	1143	0.01	131.37	2 gr S/ 100 scf	-
ENG-6	Natural Gas	Natural Gas	1143	0.01	131.37	2 gr S/ 100 scf	-
ENG-7	Natural Gas	Natural Gas	1143	0.01	131.37	2 gr S/ 100 scf	-
ENG-8	Natural Gas	Natural Gas	1143	0.01	131.37	2 gr S/ 100 scf	-
ECD-1	Natural Gas	Natural Gas	1143	0.00	4.05	2 gr S/ 100 scf	-
ECD-2	Natural Gas	Natural Gas	1143	0.00	22.20	2 gr S/ 100 scf	-

Table 2-L: Tank Data

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

Tank No.	Date Installed	Materials Stored	Seal Type (refer to Table 2-LR below)	Roof Type (refer to Table 2-LR below)	Capacity		Diameter (M)	Vapor Space (M)	Color (from Table VI-C)		Paint Condition (from Table VI-C)	Annual Throughput (gal/yr)	Turn-overs (per year)
					(bbl)	(M^3)			Roof	Shell			
TK-1	TBD	Gunbarrel	NA	Vertical- Fixed Roof (FX)	750	119	4.7244	3.66	Dark Green	Dark Green	Good	6,300,106	200.00
TK-2	TBD	Condensate	NA	Vertical- Fixed Roof (FX)	400	64	3.6576	3.05	Dark Green	Dark Green	Good	2,968,804	58.90
TK-3	TBD	Condensate	NA	Vertical- Fixed Roof (FX)	400	64	3.6576	3.05	Dark Green	Dark Green	Good	2,968,804	58.90
TK-4	TBD	Condensate	NA	Vertical- Fixed Roof (FX)	400	64	3.6576	3.05	Dark Green	Dark Green	Good	2,968,804	58.90
TK-5	TBD	Produced Water	NA	Vertical- Fixed Roof (FX)	400	64	3.6576	3.05	Dark Green	Dark Green	Good	3,065,547	60.82
TK-6	TBD	Produced Water	NA	Vertical- Fixed Roof (FX)	400	64	3.6576	3.05	Dark Green	Dark Green	Good	3,065,547	60.82
TK-7	TBD	Produced Water	NA	Vertical- Fixed Roof (FX)	400	64	3.6576	3.05	Dark Green	Dark Green	Good	3,065,547	60.82

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

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

Note: 1.00 bbl = 0.159 M^3 = 42.0 gal

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

Material Processed				Material Produced			
Description	**Chemical Composition**	**Phase (Gas, Liquid, or Solid)**	**Quantity (specify units)**	**Description**	**Chemical Composition**	**Phase**	**Quantity (specify units)**
Field Gas	Mixed Hydrocarbon	Gas	95 MMscf/d	Condensate	Mixed Hydrocarbons	Liquid	193.66 bbl/d
				Produced Water	Water and Mixed Hydrocarbons	Liquid	199.97 bbl/d
				Gas	Mixed Hydrocarbons	Gas	93.78 MMscf/d

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 - This facilty will have no CEM Equipment.									

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 - The facility will have no Parametric Emissions Measurement Equipment								

Table 2-P: Greenhouse Gas Emissions

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

		CO_2 ton/yr	N_2O ton/yr	CH_4 ton/yr	SF_6 ton/yr	PFC/HFC ton/yr[2]										**Total GHG** Mass Basis ton/yr[4]	**Total CO_2e** ton/yr[5]
Unit No.	**GWPs [1]**	**1**	**298**	**25**	**22,800**	**footnote 3**											
ENG-1	**mass GHG**	9681.04	0.02	0.18	-	-										9681.24	
	CO_2e	9681.04	5.44	4.56	-	-											9691.04
ENG-2	**mass GHG**	9681.04	0.02	0.18	-	-										9681.24	
	CO_2e	9681.04	5.44	4.56	-	-											9691.04
ENG-3	**mass GHG**	9681.04	0.02	0.18	-	-										9681.24	
	CO_2e	9681.04	5.44	4.56	-	-											9691.04
ENG-4	**mass GHG**	9681.04	0.02	0.18	-	-										9681.24	
	CO_2e	9681.04	5.44	4.56	-	-											9691.04
ENG-5	**mass GHG**	9681.04	0.02	0.18	-	-										9681.24	
	CO_2e	9681.04	5.44	4.56	-	-											9691.04
ENG-6	**mass GHG**	9681.04	0.02	0.18	-	-										9681.24	
	CO_2e	9681.04	5.44	4.56	-	-											9691.04
ENG-7	**mass GHG**	9681.04	0.02	0.18	-	-										9681.24	
	CO_2e	9681.04	5.44	4.56	-	-											9691.04
ENG-8	**mass GHG**	9681.04	0.02	0.18	-	-										9681.24	
	CO_2e	9681.04	5.44	4.56	-	-											9691.04
RBL-1	**mass GHG**	563.59	1.06E-03	0.01	-	-										563.60	
	CO_2e	563.59	0.32	0.27	-	-											564.17
ECD-1	**mass GHG**	655.45	1.24E-03	0.01	-	-										655.46	
	CO_2e	655.4489	0.37	0.31	-	-											656.13
ECD-2	**mass GHG**	767.28	1.45E-03	0.01	-	-										767.30	
	CO_2e	767.28	0.43	0.36	-	-											768.07
Total	**mass GHG**	78011.91	0.15	1.47	-	-										**79436.28**	
	CO_2e	78011.91	43.81	36.76	-	-											**79516.68**

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

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

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

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

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

Section 3

Application Summary

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

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

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

Cotton Draw Midstream, LLC is submitting this application and accompanying the material pursuant to 20.2.72.200 NMAC to apply for an initial NSR minor source permit to construct Songbird Compressor Station. The facility is located approximately 25.60 miles southeast of Loving, NM 88256. The facility will be major with respect to Title V and is minor with respect to PSD.

This facility will be a natural gas compressor station. 95 MMSCFD natural gas will be gathering from various wells in the area. The inlet gas will be compressed by eight (8) (Unit IDs ENG-1 through ENG-8) natural gas driven compressors engines. After initial separation and compression, condensate and water mixer will be sent to a 750 bbl gunbarrel separator (Unit ID TK-1). Gunbarrel will separate condensate and water, and separated liquids (water and condensate) will be stored in the atmospheric storage tanks. Flash, working, and breathing emissions from gunbarrel tank (Unit ID TK-1), condensate tanks (Unit IDs TK-2, TK-3, and TK-4), and produced water tanks (Unit ID TK-5, TK-6, TK-7) will be controlled by an enclosed combustor device (Unit ID ECD-2) with 98% capture efficiency and 98% destruction removal efficiency. Condensate and produced water loadout will have vapor-balanced tied to ECD-2. Additionally, a SSM flare (Unit ID FL-1 SSM) will control the maintenance blowdown events with 98% DRE.

Compressed gas will be treated using a TEG glycol dehydrator (Unit DEHY-1) to remove any water content before sending to the pipeline for transport. The glycol dehydration unit (DEHY-1) incorporates three distinct sources of air emissions: (1) a gas-fired reboiler burner, (2) a glycol recovery still, and (3) a glycol flash tank. Flash tank emissions will be routed to the reboiler as fuel and the non-condensable will be sent to the ECD-1 with 98% destruction removal efficiency. The dry gas will be routed to a pipeline for transport.

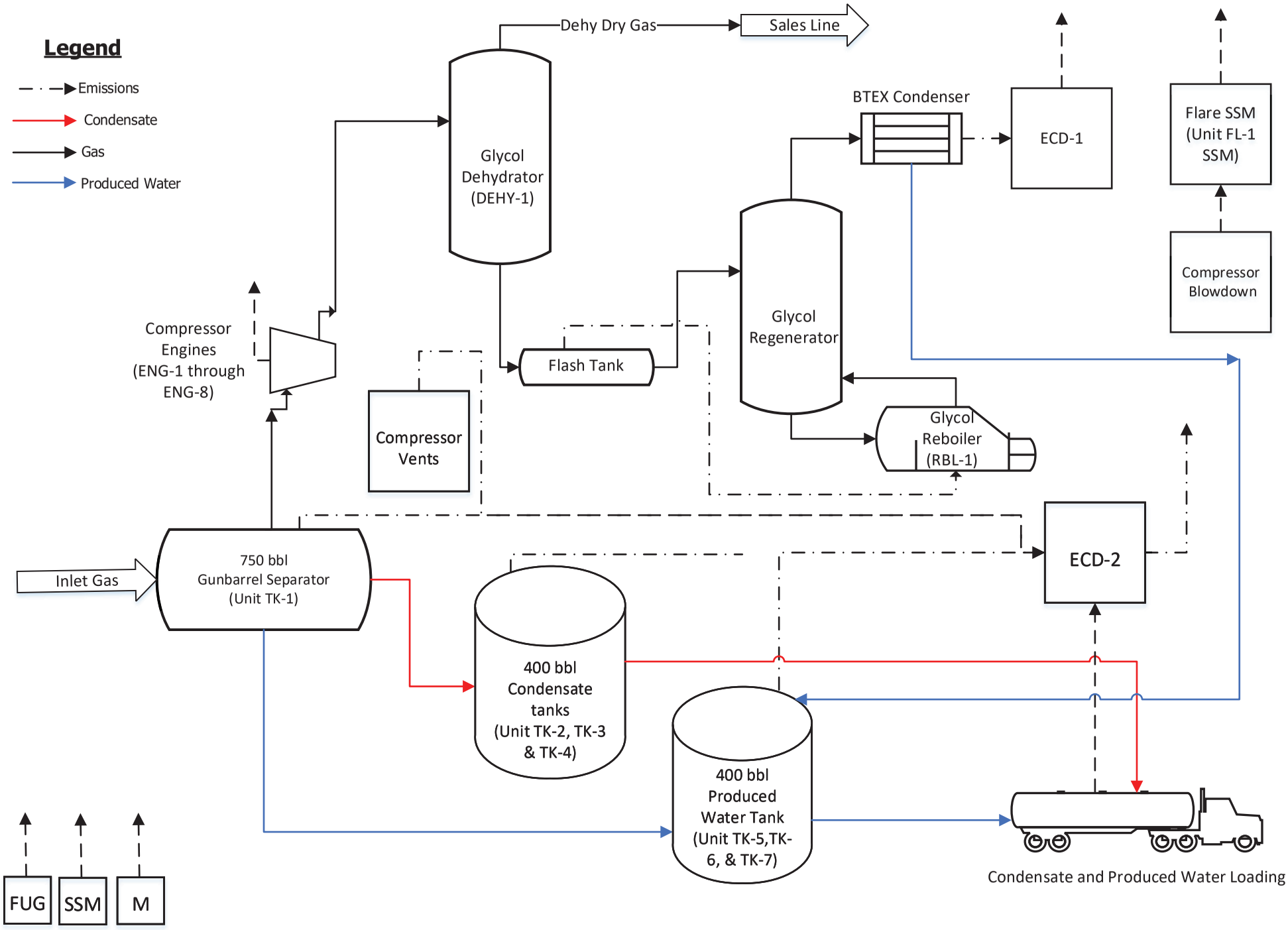
Startup, Shutdown and Maintenance (SSM) routine or predictable emissions: Requested Startup, Shutdown and Maintenance is for the routine maintenance includes compressor venting and pigging. The blowdown events will be controlled by a SSM flare (Unit FL-1 SSM). Pigging emissions are based on 51 events per year.

Section 4

Process Flow Sheet

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

A process flow sheet is attached.



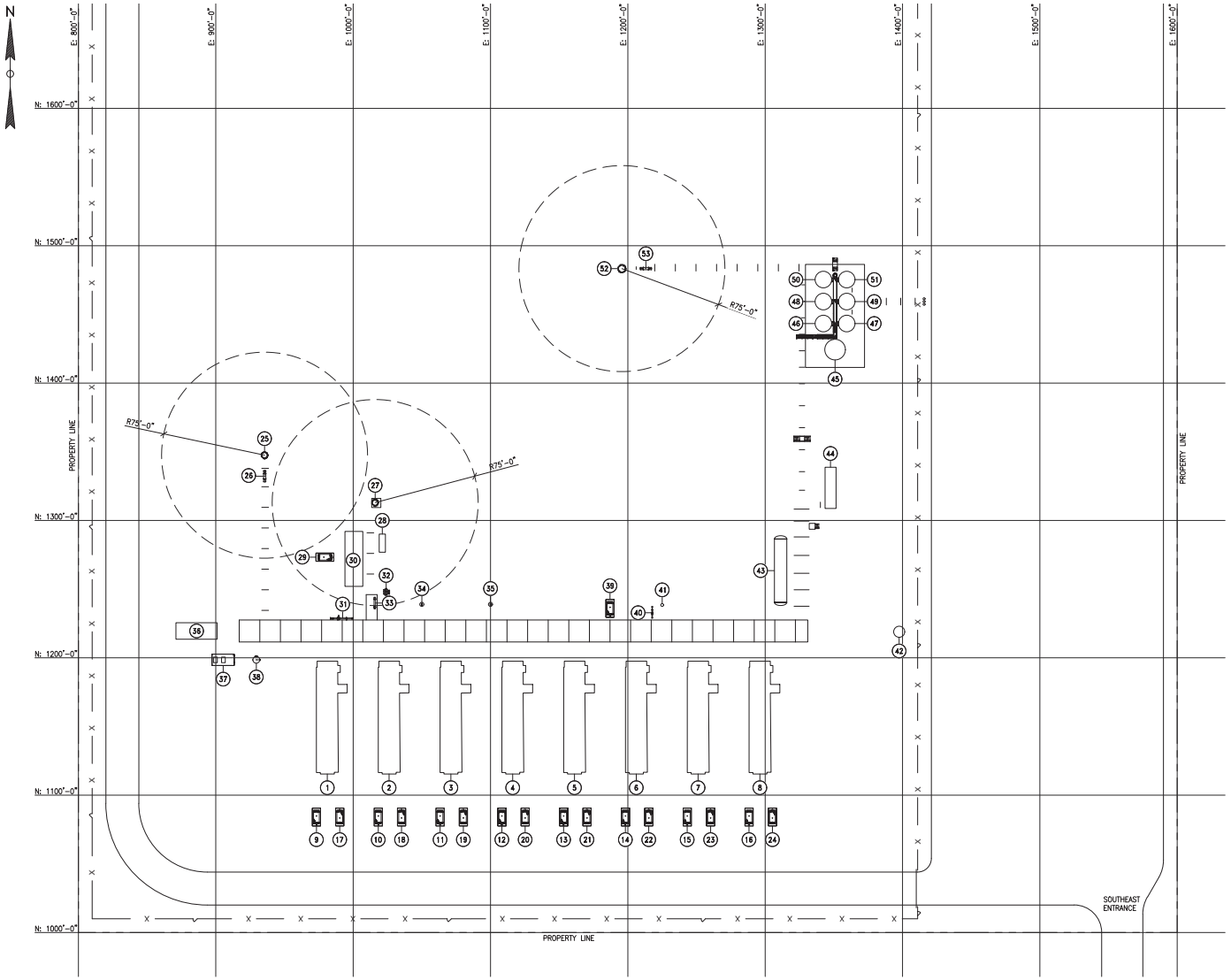
Cotton Draw Midstream,LLC – Songbird Compressor Station – Process Flow Diagram

Section 5

Plot Plan Drawn To Scale

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

A detailed Plot Plan is attached.



PLOT PLAN
SCALE: 1"=40'-0"

EQUIPMENT LIST

ID	EQUIPMENT TAG/NAME
01	C-3100 INLET GAS COMPRESSOR (BY BHE)
02	C-3200 INLET GAS COMPRESSOR (BY BHE)
03	C-3300 INLET GAS COMPRESSOR (BY BHE)
04	C-3400 INLET GAS COMPRESSOR (BY BHE)
05	C-3500 INLET GAS COMPRESSOR (BY BHE)
06	C-3600 INLET GAS COMPRESSOR (BY BHE)
07	C-3700 INLET GAS COMPRESSOR (BY BHE)
08	C-3800 INLET GAS COMPRESSOR (BY BHE)
09	COMPRESSOR LUBE OIL TANK (BY BHE)
10	COMPRESSOR LUBE OIL TANK (BY BHE)
11	COMPRESSOR LUBE OIL TANK (BY BHE)
12	COMPRESSOR LUBE OIL TANK (BY BHE)
13	COMPRESSOR LUBE OIL TANK (BY BHE)
14	COMPRESSOR LUBE OIL TANK (BY BHE)
15	COMPRESSOR LUBE OIL TANK (BY BHE)
16	COMPRESSOR LUBE OIL TANK (BY BHE)
17	COMPRESSOR GLYCOL TANK (BY BHE)
18	COMPRESSOR GLYCOL TANK (BY BHE)
19	COMPRESSOR GLYCOL TANK (BY BHE)
20	COMPRESSOR GLYCOL TANK (BY BHE)
21	COMPRESSOR GLYCOL TANK (BY BHE)
22	COMPRESSOR GLYCOL TANK (BY BHE)
23	COMPRESSOR GLYCOL TANK (BY BHE)
24	COMPRESSOR GLYCOL TANK (BY BHE)
25	FL-9301 MAINTENANCE FLARE
26	V-9303 MAINTENANCE FLARE KO
27	ECD-8146 REGEN COMBUSTOR
28	SK-8140 BTEX DISPOSAL PACKAGE
29	TK-8135 GLYCOL MAKEUP TANK
30	SK-8100 DEHY SKID
31	MT-6000 DISCHARGE METER
32	T-4111 TEG CONTACTOR
33	E-4112 GAS/GLYCOL EXCHANGER
34	F-4102 COALESCING FILTER/SCRUBBER
35	V-4101 DISCHARGE SCRUBBER
36	PDC BUILDING
37	SK-9410 IA SKID
38	V-9411 IA RECEIVER
39	TK-9730 METHANOL TANK
40	MT-9600 FUEL GAS METER
41	V-9601 FUEL GAS SCRUBBER
42	TK-9720 COMPRESSOR DRAIN SUMP
43	V-1051 INLET SLUG CATCHER
44	PIG RECEIVER (BY DEVON)
45	TK-9700 GUNBARREL TANK
46	TK-9711 CONDENSATE TANK
47	TK-9701 PRODUCED WATER TANK
48	TK-9712 CONDENSATE TANK
49	TK-9702 PRODUCED WATER TANK
50	TK-9713 CONDENSATE TANK
51	TK-9703 PRODUCED WATER TANK
52	ECD-9101 TANK COMBUSTOR
53	TK-9103 TANK COMBUSTOR KO

FOR REVIEW
NOT FOR CONSTRUCTION
THIS DOCUMENT IS PRELIMINARY IN NATURE AMD IS NOT A FINAL SIGNED AND SEALED DOCUMENT

REFERENCED DRAWINGS

DRAWING NUMBER	TITLE
–	–

DRAWING REVISIONS

REV	DESCRIPTION	BY	CHK	APVD	DATE
A	ISSUED FOR REVIEW	SHW	AJK	GBH	01/18/23
B	ISSUED FOR PHA	SHW	ZR	GBH	02/13/23

ZAP ENGINEERING & CONSTRUCTION SERVICES, INC.

COTTON DRAW MIDSTREAM

SONGBIRD COMPRESSOR STATION
GENERAL ARRANGEMENT
PLOT PLAN

JOB NO: 22150
DRAWING NO: 226103-G01-1000
REV: B
PLOT SIZE: ANSI D
SCALE: AS NOTED

Section 6

All Calculations

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

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

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

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

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

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

Significant Figures:

A. All emissions standards are deemed to have at least two significant figures, but not more than three significant figures.

B. At least 5 significant figures shall be retained in all intermediate calculations.

C. In calculating emissions to determine compliance with an emission standard, the following rounding off procedures shall be used:

(1) If the first digit to be discarded is less than the number 5, the last digit retained shall not be changed;

(2) If the first digit discarded is greater than the number 5, or if it is the number 5 followed by at least one digit other than the number zero, the last figure retained shall be increased by one unit; **and**

(3) If the first digit discarded is exactly the number 5, followed only by zeros, the last digit retained shall be rounded upward if it is an odd number, but no adjustment shall be made if it is an even number.

(4) The final result of the calculation shall be expressed in the units of the standard.

Control Devices: In accordance with 20.2.72.203.A(3) and (8) NMAC, 20.2.70.300.D(5)(b) and (e) NMAC, and 20.2.73.200.B(7) NMAC, the permittee shall report all control devices and list each pollutant controlled by the control device regardless if the applicant takes credit for the reduction in emissions. The applicant can indicate in this section of the

application if they chose to not take credit for the reduction in emission rates. For notices of intent submitted under 20.2.73 NMAC, only uncontrolled emission rates can be considered to determine applicability unless the state or federal Acts require the control. This information is necessary to determine if federally enforceable conditions are necessary for the control device, and/or if the control device produces its own regulated pollutants or increases emission rates of other pollutants.

Caterpillar G3608 Engines (Unit IDs: ENG-1 through ENG-8)
NO_X, CO, and VOC emission rates were calculated using manufacturer specifications. SO_2 emissions are based on a conservative fuel sulfur content estimated of 2 gr S/100 scf and 100% conversion of elemental sulfur to SO_2. Particulate ($PM_{2.5}$, PM_{10}, and PM) and HAP emissions were calculated using AP-42 Table 3.2-2. Greenhouse gas emissions are estimated using emission factors from 40 CFR 98 Subpart C Tables C-1 and C-2.

Glycol Dehydrator (Unit ID: DEHY-1)
Glycol dehydrator emissions were calculated using BR&E Promax and an extended gas analysis. TEG flash gas emissions were routed to the reboiler (RBL-1) as fuel. Enclosed combustor device (Unit ID ECD-1) captured 98% of regenerator emissions.

SSM & MALF (Unit ID: SSM/M)

Flare SSM (Unit ID: **FL-1 SSM**)

Flare SSM controlled the blowdown events of the facility. NO_X and CO emissions were calculated using TNRCC RG-109. VOCs and HAPs emissions were estimated based on the gas analysis and with manufacturer specification of 98% combustion efficiency. Pilot SO_2 emissions are based on a conservative fuel sulfur content estimated of 2 gr S/100 scf and 100% conversion of elemental sulfur to SO_2. Process SO_2 emissions were calculated assuming 98% combustion efficiency and conversion to SO_2. Green house gas emissions are estimated using emission factors from 40 CFR Part 98 Subpart C Table C-01 and C-02**.**

Compressor Vents (Unit ID: **Compressor Vents**)

Compressor vents emissions were calculated using BR&E ProMax and an assumption of 98% capture efficiency.

Pigging Emissions

Pigging emissions were calculated based on design specification and maximum 51 events/yr. VOC emission calculation are based on site-specific inlet gas analysis.

Gunbarrel Tank (Unit ID: TK-1)
Gunbarrel emissions were estimated using BR&E ProMax and an assumption of 98% capture efficiency.

Storage Tanks (Unit IDs: TK-2 through TK-7)
Condensate storage tanks (Unit IDs: TK-2, TK-3, TK-4) and produced water tanks (Unit IDs: TK-5, TK-6, TK-7) emissions were estimated using BR&E ProMax and an assumption of 98% capture efficiency.

Enclosed Combustor Devices (Unit IDs: ECD-1 & ECD-2)
NO_X and CO emissions were calculated using TNRCC RG-109. VOCs and HAPs emissions were estimated based on the gas analysis and with manufacturer specification of 98% combustion efficiency. Pilot SO_2 emissions are based on a conservative fuel sulfur content estimated of 2 gr S/100 scf and 100% conversion of elemental sulfur to SO_2. Process SO_2 emissions were calculated assuming 98% combustion efficiency and conversion to SO_2. Greenhouse gas emissions are estimated using emission factors from 40 CFR Part 98 Subpart C Table C-01 and C-02.

Truck Loading Emissions (Unit ID: L-1)
ProMax were used to perform the loading emission for both condensate and produced water.

Fugitive Emissions (Unit ID: FUG)
Fugitive emission calculations were completed using emission factors from Table 2-4 of EPA Protocol for Equipment Leak Emission Estimates, 1995. Subcomponent counts for each subcomponent are based on estimated average component counts for each piece of equipment.

Exempt Glycol Reboiler (Unit ID: RBL-1)
Glycol reboiler (RBL-1) is exempt pursuant to 20.2.72.202.B.(5) NMAC. NO_X, CO, VOCs and PM were estimated using AP-42 Table 1.4-1 & 1.4-2 with adjusted emission factor. HAPs were calculated using adjusted emission rates from AP-42 Table 1.4-3. SO_2 emissions were calculated with a conservative assumption of 2 gr S/100 scf and 100% conversion of elemental sulfur to SO_2. Greenhouse gas emissions are estimated using emission factors from 40 CFR Part 98 Subpart C Table C-01 and C-02.

Section 6.a

Green House Gas Emissions

(Submitting under 20.2.70, 20.2.72 20.2.74 NMAC)

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

Calculating GHG Emissions:

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

Sources for Calculating GHG Emissions:

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

Global Warming Potentials (GWP):

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

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

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

Cotton Draw Midstream, LLC - Songbird Compressor Station

Emissions Summary

Uncontrolled Emissions																		
	NO_x		CO		VOC		SO_2		PM_{10}		$PM_{2.5}$		H_2S		Total HAPs		Formaldehyde	
Unit	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
ENG-1	1.65	7.24	19.35	84.73	7.08	31.03	0.86	3.75	0.19	0.83	0.19	0.83	-	-	0.05	0.22	0.88	3.86
ENG-2	1.65	7.24	19.35	84.73	7.08	31.03	0.86	3.75	0.19	0.83	0.19	0.83	-	-	0.05	0.22	0.88	3.86
ENG-3	1.65	7.24	19.35	84.73	7.08	31.03	0.86	3.75	0.19	0.83	0.19	0.83	-	-	0.05	0.22	0.88	3.86
ENG-4	1.65	7.24	19.35	84.73	7.08	31.03	0.86	3.75	0.19	0.83	0.19	0.83	-	-	0.05	0.22	0.88	3.86
ENG-5	1.65	7.24	19.35	84.73	7.08	31.03	0.86	3.75	0.19	0.83	0.19	0.83	-	-	0.05	0.22	0.88	3.86
ENG-6	1.65	7.24	19.35	84.73	7.08	31.03	0.86	3.75	0.19	0.83	0.19	0.83	-	-	0.05	0.22	0.88	3.86
ENG-7	1.65	7.24	19.35	84.73	7.08	31.03	0.86	3.75	0.19	0.83	0.19	0.83	-	-	0.05	0.22	0.88	3.86
ENG-8	1.65	7.24	19.35	84.73	7.08	31.03	0.86	3.75	0.19	0.83	0.19	0.83	-	-	0.05	0.22	0.88	3.86
TK-1	-	-	-	-	88.17	386.18	-	-	-	-	-	-	-	-	5.22	22.87	-	-
TK-2	-	-	-	-	8.24	36.09	-	-	-	-	-	-	-	-	0.63	2.77	-	-
TK-3	-	-	-	-	8.24	36.09	-	-	-	-	-	-	-	-	0.63	2.77	-	-
TK-4	-	-	-	-	8.24	36.09	-	-	-	-	-	-	-	-	0.63	2.77	-	-
TK-5	-	-	-	-	5.36E-02	2.35E-01	-	-	-	-	-	-	-	-	1.14E-02	5.01E-02	-	-
TK-6	-	-	-	-	5.36E-02	2.35E-01	-	-	-	-	-	-	-	-	1.14E-02	5.01E-02	-	-
TK-7	-	-	-	-	5.36E-02	2.35E-01	-	-	-	-	-	-	-	-	1.14E-02	5.01E-02	-	-
L-1	-	-	-	-	0.83	3.65	-	-	-	-	-	-	-	-	0.11	0.47	-	-
DEHY-1	-	-	-	-	47.13	206.45	-	-	-	-	-	-	-	-	20.07	87.92	-	-
RBL-1	0.11	0.47	0.09	0.40	0.01	0.03	4.99E-03	0.02	0.01	0.04	0.01	0.04	-	-	2.03E-03	0.01	-	-
ECD-1[1]	0.01	0.05	0.02	0.11	-	-	3.01E-03	1.32E-02	-	-	-	-	-	-	-	-	-	-
ECD-2[1]	0.01	0.05	0.02	0.11	-	-	1.48E-02	6.50E-02	-	-	-	-	-	-	-	-	-	-
FUG	-	-	-	-	1.70	7.46	-	-	-	-	-	-	-	-	0.09	0.37	-	-
SSM/M	0.01	0.05	0.02	0.11	52.73	63.13	0.00	0.02	-	-	-	-	-	-	0.66	2.89	-	-
Totals	**13.37**	**58.57**	**154.93**	**678.59**	**272.13**	**1024.11**	**6.88**	**30.14**	**1.52**	**6.65**	**1.52**	**6.65**	**-**	**-**	**28.49**	**124.78**	**7.05**	**30.90**

[1] Combustion emissions from pilot fuel combustion only

Cotton Draw Midstream, LLC - Songbird Compressor Station

Emissions Summary

Controlled Emissions																		
	NO_x		CO		VOC		SO_2		PM_{10}		$PM_{2.5}$		H_2S		Total HAPs		Formaldehyde	
Unit	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
ENG-1	1.65	7.24	0.77	3.39	2.13	9.33	0.86	3.75	0.19	0.83	0.19	0.83	-	-	0.05	0.22	0.13	0.58
ENG-2	1.65	7.24	0.77	3.39	2.13	9.33	0.86	3.75	0.19	0.83	0.19	0.83	-	-	0.05	0.22	0.13	0.58
ENG-3	1.65	7.24	0.77	3.39	2.13	9.33	0.86	3.75	0.19	0.83	0.19	0.83	-	-	0.05	0.22	0.13	0.58
ENG-4	1.65	7.24	0.77	3.39	2.13	9.33	0.86	3.75	0.19	0.83	0.19	0.83	-	-	0.05	0.22	0.13	0.58
ENG-5	1.65	7.24	0.77	3.39	2.13	9.33	0.86	3.75	0.19	0.83	0.19	0.83	-	-	0.05	0.22	0.13	0.58
ENG-6	1.65	7.24	0.77	3.39	2.13	9.33	0.86	3.75	0.19	0.83	0.19	0.83	-	-	0.05	0.22	0.13	0.58
ENG-7	1.65	7.24	0.77	3.39	2.13	9.33	0.86	3.75	0.19	0.83	0.19	0.83	-	-	0.05	0.22	0.13	0.58
ENG-8	1.65	7.24	0.77	3.39	2.13	9.33	0.86	3.75	0.19	0.83	0.19	0.83	-	-	0.05	0.22	0.13	0.58
TK-1	-	-	-	-	1.76	7.72	-	-	-	-	-	-	-	-	0.10	0.46	-	-
TK-2	-	-	-	-	0.16	0.72	-	-	-	-	-	-	-	-	0.01	0.06	-	-
TK-3	-	-	-	-	0.16	0.72	-	-	-	-	-	-	-	-	0.01	0.06	-	-
TK-4	-	-	-	-	0.16	0.72	-	-	-	-	-	-	-	-	0.01	0.06	-	-
TK-5	-	-	-	-	1.07E-03	4.69E-03	-	-	-	-	-	-	-	-	2.29E-04	1.00E-03	-	-
TK-6	-	-	-	-	1.07E-03	4.69E-03	-	-	-	-	-	-	-	-	2.29E-04	1.00E-03	-	-
TK-7	-	-	-	-	1.07E-03	4.69E-03	-	-	-	-	-	-	-	-	2.29E-04	1.00E-03	-	-
L-1	-	-	-	-	0.24	1.04	-	-	-	-	-	-	-	-	0.07	0.29	-	-
DEHY-1[2]	-	-	-	-	0.94	4.13	-	-	-	-	-	-	-	-	0.40	1.76	-	-
RBL-1	0.11	0.47	0.09	0.40	0.01	0.03	4.99E-03	0.02	0.01	0.04	0.01	0.04	-	-	2.03E-03	0.01	-	-
ECD-1	0.18	0.77	0.35	1.54	0.92	4.05	3.01E-03	1.32E-02	-	-	-	-	-	-	3.93E-01	1.72	-	-
ECD-2	0.91	3.96	1.81	7.91	2.49	10.93	1.48E-02	6.50E-02	-	-	-	-	-	-	1.54E-01	0.67	-	-
FUG	-	-	-	-	1.70	7.46	-	-	-	-	-	-	-	-	0.09	0.37	-	-
SSM/M	0.13	0.55	0.25	1.09	40.26	8.51	0.00	0.02	-	-	-	-	-	-	0.08	0.35	-	-
Totals	**14.54**	**63.70**	**8.69**	**38.06**	**65.87**	**120.67**	**6.88**	**30.14**	**1.51**	**6.65**	**1.52**	**6.65**	**-**	**-**	**1.73**	**7.59**	**1.06**	**4.63**
Totals w/o FUG	**14.54**	**63.70**	**8.69**	**38.06**	**64.16**	**113.21**	**6.88**	**30.14**	**1.51**	**6.65**	**1.52**	**6.65**	**-**	**-**	**1.65**	**7.21**	**1.06**	**4.63**

Notes:

"*" Indicates that an hourly limit is not appropriate for this operating situation and is not being requested.

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

[1] Gunbarrel and storage tank emissions are routed to a flare (Unit ECD-2). 98% of the emissions are captured and 98% of the captured VOC, HAP, and H2S emissions are combusted. Uncaptured emissions are represented under the "Controlled Emissions" for the tanks and gunbarrel.

[2] The TEG dehydrator regenerator emissions is routed to a combustor (Unit ECD-1). 98% of the emissions are captured with 98% DRE.

Cotton Draw Midstream, LLC - Songbird Compressor Station
Emission Calculation Inputs

Site-Wide			
Description	**Value**	**Unit**	
Current Authorization		N/A	
Current Authorization Issue Date		N/A	
Operating Period		N/A	
Site Elevation	3,381	ft	Google earth
Cumulative Total Operating Hours	8,760	hr	
Daily Operating Hours	24	hr	

Fuel Gas			
Fuel Heat Value	2	gr S / 100 scf	NMED

Compressor Vents			
Parameter	**Value**	**Unit**	**Notes**
Venting Rate	120.0	scf/hr/compressor	Engineering Estimate

Gunbarrel Tank			
Parameter	**Value**	**Unit**	**Notes**
Number of Tanks	1	units	Facility Design
Volume	750	bbl	Facility Design
Capture Efficiency	98%	%	Emissions controlled by Process Flare
Hourly Throughput	17.12	bbl/hr	ProMax - Compressor Station Pstreams
Annual Throughput	150002.52	bbl/yr	ProMax - Compressor Station Pstreams

Condensate Storage Tanks			
Parameter	**Value**	**Unit**	**Notes**
Number of Tanks	3	units	Facility Design
Volume	400	bbl	Facility Design
Capture Efficiency	98%	%	Emissions controlled by Process Flare
Hourly Throughput	8.07	bbl/hr	ProMax - Compressor Station Pstreams
Annual Throughput	70685.81	bbl/yr	ProMax - Compressor Station Pstreams

Produced Water Storage Tank			
Parameter	**Value**	**Unit**	**Notes**
Number of Tanks	3	units	Facility Design
Volume	400	bbl	Facility Design
Capture Efficiency	98%	%	Emissions controlled by Process Flare
Hourly Throughput	8.33	bbl/hr	ProMax - Compressor Station Pstreams
Annual Throughput	72989.21	bbl/yr	ProMax - Compressor Station Pstreams

Cotton Draw Midstream, LLC - Songbird Compressor Station

Gunbarrel Tank

Gunbarrel Tank			
Unit(s):	TK-1		
Capacity (bbl)	750		
Number of Gunbarrels:	1		
Capture Efficiency:	98%		
Throughput (BPD):	411.0	bpd	150002.52 bbl/yr
Throughput (per tank)	411.0	bpd	150002.52 bbl/yr
Turnovers	200.0	turnovers/yr	

Flash, Working and Breathing Emissions							
Component	Flash Emissions (lb/hr)	Flash Emissions (tpy)	Working and Breathing Emissions (lb/hr)	Working and Breathing Emissions (tpy)	Total Uncontrolled Emissions (tpy)	Total Uncontrolled Emissions per Tank (tpy)	Controlled Emissions per Tank (tpy)[1]
H2S	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N2	8.63E-02	3.78E-01	2.12E-05	9.27E-05	3.78E-01	3.78E-01	7.56E-03
Methane	1.18E+01	5.18E+01	1.34E-02	5.87E-02	5.19E+01	5.19E+01	1.04E+00
CO2	8.50E-01	3.72E+00	4.35E-03	1.91E-02	3.74E+00	3.74E+00	7.48E-02
Ethane	2.00E+01	8.77E+01	1.22E-01	5.33E-01	8.82E+01	8.82E+01	1.76E+00
Propane	3.43E+01	1.50E+02	2.20E-01	9.64E-01	1.51E+02	1.51E+02	3.03E+00
Isobutane	8.71E+00	3.82E+01	6.65E-02	2.91E-01	3.85E+01	3.85E+01	7.69E-01
n-Butane	2.24E+01	9.81E+01	1.94E-01	8.51E-01	9.90E+01	9.90E+01	1.98E+00
Isopentane	6.96E+00	3.05E+01	7.21E-02	3.16E-01	3.08E+01	3.08E+01	6.16E-01
n-Pentane	7.46E+00	3.27E+01	8.22E-02	3.60E-01	3.30E+01	3.30E+01	6.60E-01
Hexane	4.44E+00	1.95E+01	5.98E-02	2.62E-01	1.97E+01	1.97E+01	3.94E-01
Heptane	2.00E+00	8.77E+00	2.82E-02	1.23E-01	8.89E+00	8.89E+00	1.78E-01
Octane	3.82E-01	1.67E+00	5.38E-03	2.36E-02	1.70E+00	1.70E+00	3.39E-02
Nonane	4.01E-02	1.76E-01	5.40E-04	2.37E-03	1.78E-01	1.78E-01	3.56E-03
Decane	7.24E-03	3.17E-02	9.21E-05	4.03E-04	3.21E-02	3.21E-02	6.43E-04
Undecane	2.27E-03	9.95E-03	3.79E-05	1.66E-04	1.01E-02	1.01E-02	2.02E-04
Dodecane	4.94E-05	2.16E-04	7.65E-07	3.35E-06	2.20E-04	2.20E-04	4.39E-06
Benzene	4.35E-01	1.91E+00	3.41E-03	1.49E-02	1.92E+00	1.92E+00	3.84E-02
Toluene	2.22E-01	9.74E-01	2.10E-03	9.21E-03	9.83E-01	9.83E-01	1.97E-02
Ethylbenzene	7.86E-03	3.44E-02	8.46E-05	3.71E-04	3.48E-02	3.48E-02	6.96E-04
m-Xylene	3.73E-02	1.63E-01	3.92E-04	1.72E-03	1.65E-01	1.65E-01	3.30E-03
p-Xylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
o-Xylene	9.57E-03	4.19E-02	8.96E-05	3.93E-04	4.23E-02	4.23E-02	8.46E-04
TEG	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sulfur Dioxide	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CO	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Water	6.63E-01	2.90E+00	8.61E-02	3.77E-01	3.28E+00	3.28E+00	6.56E-02
Total VOC	**87.43**	**382.96**	**0.74**	**3.22**	**386.18**	**386.18**	**7.72**
Total HAPs	**5.16**	**22.58**	**0.07**	**0.29**	**22.87**	**22.87**	**0.46**

[1] 98% of flash, working, and breathing emissions are captured and routed to an ECD (Unit ECD-2). The remaining 2% of emissions escape to the atmosphere from the separator.

[2] Flash, Working, and Breathing emissions are calculated using BR&E ProMax.

Cotton Draw Midstream, LLC - Songbird Compressor Station

Condensate Tanks

Condensate Tank			
Unit(s):	TK-2 through TK-4		
Capacity (bbl)	400		
Number of Gunbarrels:	3		
Capture Efficiency:	98%		
Throughput (BPD):	193.7	bpd	70685.81 bbl/yr
Throughput (per tank)	64.6	bpd	23561.94 bbl/yr
Turnovers	58.9	turnovers/yr	

Flash, Working and Breathing Emissions

Component	Flash Emissions (lb/hr)	Flash Emissions (tpy)	Working and Breathing Emissions (lb/hr)	Working and Breathing Emissions (tpy)	Total Uncontrolled Emissions (tpy)	Total Uncontrolled Emissions per Tank (tpy)	Controlled Emissions per Tank (tpy)[1]
H2S	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N2	7.89E-04	3.46E-03	1.32E-05	5.80E-05	3.52E-03	1.17E-03	2.34E-05
Methane	3.59E-01	1.57E+00	2.84E-02	1.24E-01	1.69E+00	5.65E-01	1.13E-02
CO2	6.08E-02	2.66E-01	1.62E-02	7.10E-02	3.37E-01	1.12E-01	2.25E-03
Ethane	2.30E+00	1.01E+01	8.87E-01	3.88E+00	1.40E+01	4.66E+00	9.31E-02
Propane	6.17E+00	2.70E+01	1.97E+00	8.62E+00	3.57E+01	1.19E+01	2.38E-01
Isobutane	1.88E+00	8.24E+00	5.39E-01	2.36E+00	1.06E+01	3.53E+00	7.07E-02
n-Butane	5.10E+00	2.24E+01	1.48E+00	6.47E+00	2.88E+01	9.61E+00	1.92E-01
Isopentane	1.75E+00	7.66E+00	4.79E-01	2.10E+00	9.76E+00	3.25E+00	6.51E-02
n-Pentane	1.94E+00	8.49E+00	5.29E-01	2.32E+00	1.08E+01	3.60E+00	7.21E-02
Hexane	1.29E+00	5.67E+00	3.54E-01	1.55E+00	7.22E+00	2.41E+00	4.81E-02
Heptane	6.36E-01	2.79E+00	1.62E-01	7.08E-01	3.49E+00	1.16E+00	2.33E-02
Octane	1.33E-01	5.83E-01	3.03E-02	1.33E-01	7.16E-01	2.39E-01	4.77E-03
Nonane	1.54E-02	6.76E-02	3.03E-03	1.33E-02	8.09E-02	2.70E-02	5.39E-04
Decane	3.03E-03	1.33E-02	5.20E-04	2.28E-03	1.55E-02	5.18E-03	1.04E-04
Undecane	1.05E-03	4.59E-03	2.06E-04	9.02E-04	5.49E-03	1.83E-03	3.66E-05
Dodecane	2.48E-05	1.09E-04	4.10E-06	1.80E-05	1.27E-04	4.22E-05	8.43E-07
Benzene	1.24E-01	5.43E-01	2.00E-02	8.78E-02	6.31E-01	2.10E-01	4.20E-03
Toluene	7.01E-02	3.07E-01	1.20E-02	5.26E-02	3.60E-01	1.20E-01	2.40E-03
Ethylbenzene	2.72E-03	1.19E-02	4.76E-04	2.08E-03	1.40E-02	4.66E-03	9.32E-05
m-Xylene	1.29E-02	5.67E-02	2.20E-03	9.65E-03	6.63E-02	2.21E-02	4.42E-04
p-Xylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
o-Xylene	3.35E-03	1.47E-02	5.02E-04	2.20E-03	1.69E-02	5.62E-03	1.12E-04
TEG	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sulfur Dioxide	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CO	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Water	5.19E-02	2.27E-01	6.16E-06	2.70E-05	2.27E-01	7.58E-02	1.52E-03
Total VOC	**19.14**	**83.83**	**5.58**	**24.43**	**108.27**	**36.09**	**0.72**
Total HAPs	**1.51**	**6.60**	**0.39**	**1.71**	**8.31**	**2.77**	**0.06**

[1] 98% of flash, working, and breathing emissions are captured and routed to an ECD (Unit ECD-2). The remaining 2% of emissions escape to the atmosphere from the separator.

[2] Flash, Working, and Breathing emissions are calculated using BR&E ProMax.

Cotton Draw Midstream, LLC - Songbird Compressor Station

Produced Water Tanks

Produced Water Tank			
Unit(s):	TK-5 through TK-7		
Capacity (bbl)	400		
Number of Gunbarrels:	3		
Capture Efficiency:	98%		
Throughput (BPD):	200.0	bpd	72989.21 bbl/yr
Throughput (per tank)	66.7	bpd	24329.74 bbl/yr
Turnovers	60.8	turnovers/yr	

Flash, Working and Breathing Emissions							
Component	Flash Emissions (lb/hr)	Flash Emissions (tpy)	Working and Breathing Emissions (lb/hr)	Working and Breathing Emissions (tpy)	Total Uncontrolled Emissions (tpy)	Total Uncontrolled Emissions per Tank (tpy)	Controlled Emissions per Tank (tpy)[1]
H2S	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
N2	3.27E-05	1.43E-04	2.99E-05	1.31E-04	2.74E-04	9.14E-05	1.83E-06
Methane	6.10E-03	2.67E-02	1.15E-02	5.02E-02	7.69E-02	2.56E-02	5.13E-04
CO2	7.53E-04	3.30E-03	2.85E-02	1.25E-01	1.28E-01	4.27E-02	8.55E-04
Ethane	1.34E-02	5.88E-02	3.75E-02	1.64E-01	2.23E-01	7.44E-02	1.49E-03
Propane	2.13E-02	9.32E-02	4.18E-02	1.83E-01	2.76E-01	9.21E-02	1.84E-03
Isobutane	5.69E-03	2.49E-02	7.76E-03	3.40E-02	5.89E-02	1.96E-02	3.93E-04
n-Butane	1.34E-02	5.85E-02	2.38E-02	1.04E-01	1.63E-01	5.42E-02	1.08E-03
Isopentane	4.14E-03	1.81E-02	5.07E-03	2.22E-02	4.03E-02	1.34E-02	2.69E-04
n-Pentane	2.05E-03	8.97E-03	9.85E-04	4.32E-03	1.33E-02	4.43E-03	8.86E-05
Hexane	1.01E-03	4.43E-03	3.00E-04	1.31E-03	5.74E-03	1.91E-03	3.83E-05
Heptane	4.07E-04	1.78E-03	6.57E-05	2.88E-04	2.07E-03	6.90E-04	1.38E-05
Octane	3.34E-05	1.46E-04	1.28E-06	5.59E-06	1.52E-04	5.06E-05	1.01E-06
Nonane	5.44E-06	2.38E-05	1.15E-07	5.04E-07	2.43E-05	8.11E-06	1.62E-07
Decane	2.79E-07	1.22E-06	7.19E-10	3.15E-09	1.23E-06	4.08E-07	8.17E-09
Undecane	1.24E-07	5.44E-07	1.28E-10	5.61E-10	5.45E-07	1.82E-07	3.63E-09
Dodecane	1.18E-08	5.15E-08	1.86E-11	8.16E-11	5.16E-08	1.72E-08	3.44E-10
Benzene	5.29E-04	2.32E-03	2.43E-02	1.07E-01	1.09E-01	3.63E-02	7.26E-04
Toluene	2.66E-04	1.16E-03	7.09E-03	3.10E-02	3.22E-02	1.07E-02	2.15E-04
Ethylbenzene	1.06E-05	4.62E-05	9.64E-05	4.22E-04	4.68E-04	1.56E-04	3.12E-06
m-Xylene	4.35E-05	1.91E-04	4.88E-04	2.14E-03	2.33E-03	7.77E-04	1.55E-05
p-Xylene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
o-Xylene	1.26E-05	5.50E-05	1.51E-04	6.61E-04	7.16E-04	2.39E-04	4.77E-06
TEG	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sulfur Dioxide	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NO2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CO	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Water	1.13E-03	4.93E-03	2.93E-03	1.28E-02	1.77E-02	5.91E-03	1.18E-04
Total VOC	**4.88E-02**	**2.14E-01**	**1.12E-01**	**4.90E-01**	**7.04E-01**	**2.35E-01**	**4.69E-03**
Total HAPs	**1.87E-03**	**8.20E-03**	**3.25E-02**	**1.42E-01**	**1.50E-01**	**5.01E-02**	**1.00E-03**

[1] 98% of flash, working, and breathing emissions are captured and routed to an ECD (Unit ECD-2). The remaining 2% of emissions escape to the atmosphere from the separator.

[2] Flash, Working, and Breathing emissions are calculated using BR&E ProMax.

For AECT	VOC		VOC	
	lb/hr	tpy	lb/hr	tpy
Flash	0.05	0.21	0.02	0.07
W&B	0.11	0.49	0.04	0.16

Cotton Draw Midstream, LLC - Songbird Compressor Station

Enclosed Combustion Device

Emission Unit: ECD-2
Source Description: TK-1 through TK-7, Compressor Vents and Condensate Loading
Control Efficiency: 98% DRE

VOC Heat Input and Flow Rate Calculation Per Unit

Parameters	Value	Unit	Notes
Number of ECDs	1	-	
VOC Emissions	546.27	tpy	TK-1 through TK-7, Compressor Vents and Condensate Loading
HAP Emissions	33.65	tpy	TK-1 through TK-7, Compressor Vents and Condensate Loading
Total Flared Gas Heating Value	2321.09	Btu/scf	Weighted average heating value from all streams
Total Flared Gas Flow	2303.40	scf/hr	Total flow from all streams to flare
Total Flared Gas Heating Rate	5.35	MMBtu/hr	Calculated based on heating value and steady-state flow
Flared Gas Flow Rate with Safety Factor	10%	%	Safety factor
	2533.74	scf/hr	Flow with safety factor
	22.20	MMscf/yr	
Short-Term Safety Factor	10%	-	Applied to emissions to account for variations in heat content.
Heating Rate	6.47	MMBtu/hr	
Flare pilot	65	scf/hr	Engineering Estimate
	10%		Safety factor
	72	scf/hr	Pilot flow with safety factor
	7.15E-05	MMscf/hr	
Hours of Operation	8760	hrs	
Pipeline Gas HHV	1260	Btu/scf	Facility specification
Flare Heat Input	9.01E-02	MMBtu/hr	
	0.63	MMscf/yr	
Total Flare Flow Rate	62525.73	SCF/D	
Heating Rate + Pilot	6.56	MMBtu/hr	

Emission Rates Per Unit

	NO_x	CO	VOC[1]	SO_2[2]	H_2S	CH_4[3]	CO_2[3]	N_2O[3]	HAPs[1]	Units	Notes
	0.1380	0.2755								lb/MMBtu	TNRCC RG-109 (high Btu; other)
						1.00E-03	53.06	1.00E-04		Kg/MMBtu	40 CFR 98 Subpart C Table C-01 & C-02
										lb H_2S/Mscf	
				2.00						gr S / 100 scf	NMED
			546.27		-				33.65	tpy	TK-1 through TK-7, Compressor Vents and C
Pilot Emissions	0.01	0.02	-	3.71E-04		1.99E-04	10.54	1.99E-05	-	lb/hr	
	0.05	0.11	-	1.63E-03		8.70E-04	46.16	8.70E-05	-	tpy	
Process Emissions	0.89	1.78	2.49	1.45E-02	-	0.01	756.74	1.43E-03	0.15	lb/hr	
	3.91	7.81	10.93	6.34E-02	-	0.06	3314.53	0.01	0.67	tpy	
Total Emissions	**0.91**	**1.81**	**2.49**	**1.48E-02**	**-**	**0.01**	**767.28**	**1.45E-03**	**0.15**	lb/hr	
	3.96	**7.91**	**10.93**	**6.50E-02**	**-**	**0.06**	**3360.69**	**0.01**	**0.67**	tpy	

1 Flash, working and breathing emissions from the gunbarrel (TK-1), condensate tank (TK-2 to TK-4), PW tanks (TK-5 to TK-

[2] Fuel sulfur content is assumed to be 2 gr/100 scf

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

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

GHG Emissions

CO_2[3]	N_2O[3]	CH_4[3]	CO_2e[4]	Units	Notes
767.28	1.45E-03	0.01		tpy	
1	298	25		GWP	40 CFR 98 Table A-1
767.3	**0.43**	**0.36**	**768.07**	tpy CO_2e	

[4] CO_2e tpy Emission Rate = CO_2 Emission Rate + N_2O Emission Rate*GWP Factor +CH_4 Emission Rate*GWP Factor

Exhaust Parameters

Exhaust temp (Tstk):	1600	°F	Engineer Estimate
Site Elevation:	3,381	ft MSL	
Ambient pressure (Pstk):	26.42	in. Hg	Calculated based on elevation
F factor:	10610	scf/MMBtu	40 CFR 60 Appx A Method 19
Exhaust flow	919.4	scfs	Exhaust flow (scfs) = Exhaust velocity (ft/s) * Pi * (Diameter^2)/4
	4125.4	acfs	acfs = scfs * (Pstd/Pstk)*(Tstk/Tstd), Pstd = 29.92 "Hg, Tstd = 520 °R
Stack diameter:	5.5	ft	Mfg. Specifications
Stack height:	35	ft	Mfg. Specifications
Exhaust velocity:	38.7	ft/sec	Exhaust flow ÷ stack area

Cotton Draw Midstream, LLC - Songbird Compressor Station

Enclosed Combustion Device

Emission Unit: ECD-1
Source Description: TEG BTEX Vapors
Combustion Efficiency: 98% DRE

VOC Heat Input and Flow Rate Calculation Per Unit

Parameters	Value	Unit	Notes
Number of process flares	1	-	
VOC Emissions	202.32	tpy	TEG BTEX Vapors
HAP Emissions	86.16	tpy	TEG BTEX Vapors
Total Flared Gas Heating Value	2339.38	Btu/scf	Weighted average heating value from all streams
Total Flared Gas Flow	420.11	scf/hr	Total flow from all streams to flare
Total Flared Gas Heating Rate	0.98	MMBtu/hr	Calculated based on heating value and steady-state flow
Flared Gas Flow Rate with Safety Factor	10%	%	Safety factor
	462.12	scf/hr	Flow with safety factor
	4.05	MMscf/yr	
Short-Term Safety Factor	10%	-	Applied to emissions to account for variations in heat content.
Heating Rate	1.19	MMBtu/hr	
Pilot Input Information			
Flare pilot	65	scf/hr	Engineering Estimate
	10%		Safety factor
	72	scf/hr	Pilot flow with safety factor
	7.15E-05	MMscf/hr	
Hours of Operation	8760	hrs	
Pipeline Gas HHV	1260	Btu/scf	Facility specification
Flare Heat Input	0.09	MMBtu/hr	
	0.63	MMscf/yr	
Total Flare Flow Rate	12806.90	SCF/D	
Heating Rate + Pilot	1.28	MMBtu/hr	

Emission Rates Per Unit

	NO_x	CO	VOC[1]	SO_2[2]	H_2S	CH_4[3]	CO_2[3]	N_2O[3]	HAPs[1]	Units	Notes
Emission Factors	0.14	0.28				1.00E-03	53.06	1.00E-04		lb/MMBtu	TNRCC RG-109 (high Btu; other)
										Kg/MMBtu	40 CFR 98 Subpart C Table C-01 & C-02
										lb H_2S/Mscf	
				2.00						gr S / 100 scf	NMED
			202.32		-				86.16	tpy	TEG BTEX Vapors
Pilot Emissions	0.01	0.02	-	3.71E-04	-	1.99E-04	10.54	1.99E-05	-	lb/hr	
	0.05	0.11	-	1.63E-03	-	8.70E-04	46.16	8.70E-05	-	tpy	
Process Emissions	0.16	0.33	0.92	2.64E-03	-	2.62E-03	139.11	2.62E-04	0.39	lb/hr	
	0.72	1.43	4.05	0.01	-	0.01	609.29	1.15E-03	1.72	tpy	
Total Emissions	**0.18**	**0.35**	**0.92**	**3.01E-03**	**-**	**2.82E-03**	**149.65**	**2.82E-04**	**0.39**	lb/hr	
	0.77	**1.54**	**4.05**	**1.32E-02**	**-**	**0.01**	**655.45**	**1.24E-03**	**1.72**	tpy	

[1] TEG BTEX vapors are controlled by ECD-1. 98% DRE

[2] Fuel sulfur content is assumed to be 2 gr/100 scf

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

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

GHG Emissions

CO_2[3]	N_2O[3]	CH_4[3]	CO_2e[4]	Units	Notes
655.45	1.24E-03	0.01		tpy	
1	298	25		GWP	40 CFR 98 Table A-1
655.4	**0.37**	**0.31**	**656.13**	tpy CO_2e	

[4] CO_2e tpy Emission Rate = CO_2 Emission Rate + N_2O Emission Rate*GWP Factor +CH_4 Emission Rate*GWP Factor

Exhaust Parameters			
Exhaust temp (Tstk):	1400	°F	Engineer Estimate
Site Elevation:	3,381	ft	
Ambient pressure (Pstk):	26.42	in. Hg	Calculated based on elevation
F factor:	10610	scf/MMBtu	40 CFR 60 Appx A Method 19
Exhaust flow	242.30	scfs	Exhaust flow (scfs) = Exhaust velocity (ft/s) * Pi * (Diameter^2)/4
	981.58	acfs	acfs = scfs * (Pstd/Pstk)*(Tstk/Tstd), Pstd = 29.92 "Hg, Tstd = 520 °R
Stack diameter:	5	ft	Mfg. Specifications
Stack height:	23.42	ft	Mfg. Specifications
Exhaust velocity:	12.34	ft/sec	Engineer Estimate

Cotton Draw Midstream, LLC - Songbird Compressor Station
Engines Emissions

Units: ENG-1 Through ENG-8
Description: Caterpillar G3608 Compressor Engines
Control Equipment: Oxidation Catalyst
Type: 4SLB

Engine Data	Value	Unit	Notes
Horsepower:	2500	hp	Catalyst Manufacturer Data
Fuel consumption:	7558	Btu/hp-hr	MFG Data
Fuel heat value: HHV	1260	Btu/scf	Site Specification Technical Data
Fuel heat value: LHV	1143	Btu/scf	Site Specification Technical Data
Heating rate:	18.9	MMBtu/hr	
Fuel usage:	0.0150	MMscf/hr	
	131.4	MMscf/yr	
Operating hours:	8760.0	hours/year	

Emission Rates for each engine[3]

Uncontrolled Emissions	NO_x[1]	CO[1]	VOC[1,4]	SO_2[1]	PM[2]	HCHO[1]	Acetaldehyde[5]	Acrolein[5]	Benzene[5]	Ethylbenzene[5]	n-Hexane[5]	Toluene[5]	Xylene[5]	Total HAPs[5]		
	0.30	3.51	1.09			0.16									g/hp-hr	Catalyst Data
Combustion Emission Factors					9.99E-03		8.36E-03	5.14E-03	4.40E-04	3.97E-05	1.11E-03	4.08E-04	1.84E-04		lb/MMBtu	AP-42 Table 3.2-2
							1.03E-02	6.35E-03	5.44E-04	4.90E-05	1.37E-03	5.04E-04	2.27E-04		lb/MMBtu	Scaled for Fuel Heat Value
				2.0											gr S / 100 scf	NMED
Safety Factor	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*		*Safety Factor*	
Total Emissions	**1.65**	**19.35**	**7.08**	**0.86**	**0.19**	**0.88**	**0.20**	**1.20E-01**	**1.03E-02**	**9.27E-04**	**2.59E-02**	**9.52E-03**	**4.29E-03**	**0.05**	**lb/hr**	
	7.24	**84.73**	**31.03**	**3.75**	**0.83**	**3.86**	**0.85**	**0.53**	**0.04**	**4.06E-03**	**0.11**	**0.04**	**0.02**	**0.22**	**tpy**	

Controlled Emissions	NO_x[1]	CO[1]	VOC[1,4]	SO_2[1]	PM[2]	HCHO[1]	Acetaldehyde[5]	Acrolein[5]	Benzene[5]	Ethylbenzene[5]	n-Hexane[5]	Toluene[5]	Xylene[5]	Total HAPs[5]	Units	Notes
	0.30	0.14	0.33			0.02									g/hp-hr	Catalyst Data
	0%	96%	70%			85%	0%	0%	0%	0%	0%	0%	0%		%	Control Efficiency
Combustion Emission Factors					9.91E-03		8.36E-03	5.14E-03	4.40E-04	3.97E-05	1.11E-03	4.08E-04	1.84E-04		lb/MMBtu	AP-42 Table 3.2-2
							1.03E-02	6.35E-03	5.44E-04	4.90E-05	1.37E-03	5.04E-04	2.27E-04		lb/MMBtu	Scaled for Fuel Heat Value
				2											gr S / 100 scf	NMED
Safety Factor	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*		*Safety Factor*	
Combustion Emissions	**1.65**	**0.77**	**2.13**	**0.86**	**0.19**	**0.13**	**0.20**	**0.12**	**1.03E-02**	**9.27E-04**	**2.59E-02**	**9.52E-03**	**4.29E-03**	**0.05**	**lb/hr**	
	7.24	**3.39**	**9.33**	**3.75**	**0.82**	**0.58**	**0.85**	**0.53**	**4.50E-02**	**4.06E-03**	**0.11**	**4.17E-02**	**1.88E-02**	**0.22**	**tpy**	

GHG Calculations

CO_2	N_2O	CH_4	CO_2e		
53.06	0.0001	0.001		kg/MMBtu	40 CFR 98 Subpart C Tables C-1 and C-2
1	298	25		GWP	40 CFR 98 Table A-1
9681.04	0.02	0.18		tpy	Engine
9681.04	5.44	4.56	9691.04	tpy CO_2e	
		Total:	**9691.04**	tpy CO2e	

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

CO_2e tpy Emission Rate = CO_2 Emission Rate* GWP Factor + N_2O Emission Rate*GWP Factor +CH_4 Emission Rate*GWP Factor

Notes

[1] Engine emissions pedigree, heating value basis 1260 HHV BTU/SCF
[2] It is assumed that PM_{10} = $PM_{2.5}$, PM emissions are derived from AP 42 Table 3.2-2 and scaled for Fuel heat value
[3] Emission rates represent of each compressor engine emissions
[4] VOC emissions included aldehydes
[5] Total HAPs are calculated using AP42 emissions factors for a 4-Stroke Lean Burn Engine.

Exhaust Parameters			
velocity	193.58	ft/s	
velocity	11614.5589	ft/min	
flow rate	16,136	ft^3/min	Engine Manufacturer
area	1.39	ft^2	
Stack diameter	1	ft	Per Client
Stack height	23	ft	Per Client
Stack Temperature	820	F	Catalyst Guarantee

Cotton Draw Midstream, LLC - Songbird Compressor Station

Glycol Dehydrator

Unit: DEHY-1
Description: Glycol Dehydrator
Control Equipment: Condenser and ECD (Unit ECD-1)
Capture Efficiency: 98%
Type of Glycol Employed: TEG
Glycol Flow Rate: 13 gpm

Component	Uncontrolled Flash Gas Emissions[1,3]		Uncontrolled Regenerator Emissions[1]		Total Uncontrolled Emissions[1]		Total Controlled Emissions[2,4]	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
H2S	-	-	-	-	-	-	-	-
N2	-	-	3.22E-03	0.01	0.00	0.01	6.45E-05	0.00
Methane	-	-	1.58	6.91	1.58	6.91	0.03	0.14
CO2	-	-	2.50	10.97	2.50	10.97	0.05	0.22
Ethane	-	-	3.83	16.76	3.83	16.76	0.08	0.34
Propane	-	-	7.26	31.81	7.26	31.81	0.15	0.64
Isobutane	-	-	1.77	7.76	1.77	7.76	0.04	0.16
n-Butane	-	-	7.70	33.72	7.70	33.72	0.15	0.67
Isopentane	-	-	3.18	13.94	3.18	13.94	0.06	0.28
n-Pentane	-	-	4.31	18.88	4.31	18.88	0.09	0.38
Hexane	-	-	4.23	18.52	4.23	18.52	0.08	0.37
Heptane	-	-	2.41	10.55	2.41	10.55	0.05	0.21
Octane	-	-	0.39	1.72	0.39	1.72	7.87E-03	0.03
Nonane	-	-	0.03	0.14	0.03	0.14	6.34E-04	2.77E-03
Decane	-	-	3.57E-03	0.02	3.57E-03	0.02	7.15E-05	3.13E-04
Undecane	-	-	7.38E-04	3.23E-03	7.38E-04	0.00	1.48E-05	6.46E-05
Dodecane	-	-	9.39E-06	4.11E-05	9.39E-06	0.00	1.88E-07	8.23E-07
Benzene	-	-	10.02	43.88	10.02	43.88	0.20	0.88
Toluene	-	-	5.02	22.00	5.02	22.00	0.10	0.44
Ethylbenzene	-	-	0.10	0.46	0.10	0.46	0.00	0.01
m-Xylene	-	-	0.52	2.28	0.52	2.28	0.01	0.05
p-Xylene	-	-	-	-	-	-	-	-
o-Xylene	-	-	0.18	0.78	0.18	0.78	3.58E-03	0.02
TEG	-	-	4.50E-10	1.97E-09	4.50E-10	1.97E-09	9.01E-12	3.95E-11
Sulfur Dioxide	-	-	-	-	-	-	-	-
NO2	-	-	-	-	-	-	-	-
CO	-	-	-	-	-	-	-	-
Water	-	-	2.67	11.71	2.67	11.71	0.05	0.23
Total	**-**	**-**	**57.72**	**252.81**	**57.72**	**252.81**	**1.15**	**5.06**
VOC	**-**	**-**	**47.13**	**206.45**	**47.13**	**206.45**	**0.94**	**4.13**
HAP	**-**	**-**	**20.07**	**87.92**	**20.07**	**87.92**	**0.40**	**1.76**

Dehy Emission Summary	Uncontrolled[1]		Controlled[2]	
	lb/hr	ton/yr	lb/hr	ton/yr
VOC	47.13	206.45	0.94	4.13
HAP	20.07	87.92	0.40	1.76
H_2S	0.00	0.00	0.00	0.00

Notes

[1] Uncontrolled emissions from the flash tank and regenerator are calculated using BR&E ProMax.

[2] 98% of emissions from regenerator is captured and routed to a combustor (Unit ECD-1). The remaining 2% of emissions escape to the atmosphere.

[3] TEG Flash gas is routed to the reboiler as fuel

[4] Uncaptured emissions are represented as controlled emissions

Cotton Draw Midstream, LLC - Songbird Compressor Station

Condensate & Produced Water Loading

Unit ID: L-1

Source Description: Condensate and produced water loading

Facility throughput 0.1 bbl/d

1421.08 gal/yr

Controlled by: ECD-2

Capture Efficiency: 98% Condensate and Produced Water Loading

Loading Emissions[1,2]			
Condensate Loading		**Produced Water Loading**	
VOC Emissions		**VOC Emissions**	
0.61	lb/hr	0.23	lb/hr
2.66	tpy	0.99	tpy
HAP Emissions		**HAP Emissions**	
0.04	lb/hr	0.07	lb/hr
0.19	tpy	0.29	tpy
H_2S Emissions		**H_2S Emissions**	
-	lb/hr	-	lb/hr
-	tpy	-	tpy

Uncontrolled Loading			**Controlled Loading**	
Pollutant	**lb/hr**	**tons/yr**	**lb/hr**	**tons/yr**
VOCs	0.83	3.65	0.24	1.04
HAPs	0.11	0.47	0.07	0.29
H_2S	-	-	-	-

1 Condensate and produced water Loadout will have vapor balance tied to tank combustor and loading emissions will be controlled by ECD-2 with 98% capture efficiency.

[2] Loading emissions are calculated using a BR&E ProMax simulation.

Cotton Draw Midstream, LLC - Songbird Compressor Station

Reboiler

Unit: RBL-1

Description: Reboiler associated with glycol Dehydrator

Reboiler Fuel Usage	Value	Units	Notes
Fuel Consumption	1.10	MMBtu/hr	Input heat rate
Fuel heat value	1,260	btu/scf	Fuel Gas Analysis
Hourly fuel usage	0.87	Mscf/hr	Fuel usage*
Fuel Throughput	20.95	Mscf/d	Throughput
Annual fuel usage	7.65	MMscf/yr	Annual usage
Operating hours	8760	hrs/yr	Continuous Operation

*Fuel Usage (MMBtu/hr) * (10^6 Btu/MMBtu) / Fuel LHV (Btu/scf) * (Mscf/1000 scf)

Controlled Emissions - Glycol Dehydrator with Condenser (on Regenerator) & Reboiler			
Flow to Reboiler	428.68	scf/hr	ProMax - BTEX Overheads Emissions Stream
	0.429	Mscf/hr	Condenser vent gas routed to reboiler
	1260.0	btu/scf	Promax simulation
	3.76	MMscf/yr	

	NO_x	**CO**	**VOC[1]**	**SO_2**	**H_2S[1]**	**PM**		
	100	84	5.5		-	7.6	lb/MMscf	Unit emission rates from AP-42 Table 1.4-1 & 2
	124	104	6.8		-	9.4		Adjusted emission factor: EFF X (Dehy Stream Heat Value/1,020 Btu/scf)
				2.00	-		gr S / 100 scf	NMED
Reboiler (DEHY-Reboiler)				0.00	-		lb SO_2/hr	SO_2 Rate * fuel usage
					-		lb H_2S/hr	H_2S from condenser vent gas* (pilot fuel usage/condenser vent gas flow rate)
	0.11	0.09	0.01	0.00	-	0.01	lb/hr	lb/MMscf * (Mscf/hr / 1000 Mscf/1 MMscf)
	0.47	0.40	0.03	0.02	-	0.04	tpy	lb/hr * 8760 hrs/yr / 2000 lb/ton
Requested Limits	**0.11**	**0.09**	**0.01**	**0.0050**	**-**	**0.01**	**lb/hr**	
	0.47	**0.40**	**0.03**	**0.02**	**-**	**0.04**	**tpy**	

	n-Hexane[1]	**Benzene[1]**	**Toluene[1]**	**Ethylbenzene[1]**	**Xylenes[1]**	**HCHO[1]**	**Total HAPs[1,2]**		
	1.80	0.0021	0.0034	-	-	0.075		lb/MMscf	Unit emission rates from AP-42 Table 1.4-3
Reboiler (DEHY-Reboiler)	2.22	0.0026	0.0042	-	-	0.093			Adjusted EF to Fuel Gas HHV
	0.0019	2.26E-06	3.67E-06	-	-	8.09E-05	0.0020	lb/hr	Reboiler Emissions
	0.009	9.92E-06	1.61E-05	-	-	3.54E-04	0.0089	tpy	
Requested Limits	**1.94E-03**	**2.26E-06**	**3.67E-06**	**-**	**-**	**8.09E-05**	**2.03E-03**	**lb/hr**	
	8.50E-03	**9.92E-06**	**1.61E-05**	**-**	**-**	**3.54E-04**	**8.88E-03**	**tpy**	

[1] The reboiler controls VOCs and HAP with a 98% destruction efficiency.

[2] Total HAPs associated with reboiler fuel gas combustion is calculated using BR&E ProMax 6.

GHG Calculations

	CO_2[3]	**N_2O[3]**	**CH_4[3]**	**CO_2e[3]**		
	53.06	0.0001	0.001		kg/MMBtu	40 CFR 98 Subpart C Tables C-1 and C-2
Reboiler	1	298	25		GWP	40 CFR 98 Table A-1
(DEHY-Reboiler)	563.6	0.0011	0.011		tpy	Reboiler
	563.6	**0.32**	**0.27**	**564.17**	tpy CO_2e	
Total	**563.59**	**0.32**	**0.27**	**564.17**	tpy CO_2e	

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

CO_2e tpy Emission Rate = CO_2 Emission Rate + N_2O Emission Rate*GWP Factor +CH_4 Emission Rate*GWP Factor

Exhaust Parameters			
Heat Rate:	1100	MBtu/hr	
Exhaust temp (Tstk):	500	°F	Engineering Estimate
Site Elevation:	3,381	ft MSL	
Ambient pressure (Pstk):	26.42	in. Hg	Calculated based on elevation
F factor:	10610	wscf/MMBtu	40 CFR 60 Appx A Method 19
Exhaust flow	194.5	scfm	Calculated from F factor and heat rate
Exhaust flow:	406.7	acfm	scfm * (Pstd/Pstk)*(Tstk/Tstd), Pstd = 29.92 "Hg, Tstd = 520 °R
Stack diameter:	3.50	ft	Engineering estimate
Stack height:	26	ft	Engineering estimate
Exhaust velocity:	0.70	ft/sec	Exhaust flow ÷ stack area

Cotton Draw Midstream, LLC - Songbird Compressor Station

Basis for Fugitive Emissions

Units with Components	Number
Inlet compression	8
Separators	1
VOC Storage Tanks	4

Component Type	Light Liquid	Gas	Total
Connections	828	702	1530
Flanges	735	378	1113
Open-Ends	24	0	24
Pumps	18	0	18
Valves	18	48	66
"Others"	0	0	0
TOTALS	**1623**	**1128**	**2751**

Gas VOC Mass Percentage	**11.76%**
GAS HAP Mass Percentage	**0.57%**
Light Oil VOC Mass Percentage	**100.00%**
Light Oil HAP Mass Percentage	**5%**

Component Type	Emission Factor[2] Light Liquids kg\hr	Emission Factor[2] Gas kg\hr	Emission Rate Light Liquid lbs\hr	Emission Rate Gas lbs\hr	Emission Rate Light Liquid tpy	Emission Rate Gas 40
Connections	2.10E-04	2.00E-04	0.38	0.31	1.68	1.35
Flanges	1.10E-04	3.90E-04	0.18	0.32	0.78	1.42
Open-Ends	1.40E-03	2.00E-03	0.07	0.00	0.32	0.00
Pumps	1.30E-02	2.40E-03	0.51	0.00	2.25	0.00
Valves	2.50E-03	4.50E-03	0.10	0.48	0.43	2.08
"Others"	7.50E-03	8.80E-03	0.00	0.00	0.00	0.00
		Totals	1.248	1.11	5.47	4.85
			2.36		10.32	

Facility-wide Fugitive Emissions Per Piece of Equipment

Subcomponent		Emission Factor[1]	Control Efficiency	VOC Content[2]	H_2S Content[2] (wt%)	HAP Content[2] (wt%)	Subcomponent Counts[3]	VOCs	HAP
Valves	Gas	9.92E-03	0.0%	11.76%	0.0000%	0.57%	48	0.056	2.71E-03
	Light Oil	5.51E-03	0.0%	100.00%	0.0000%	5.00%	18	0.0992	4.96E-03
	Heavy Oil	1.85E-05	0.0%	100.00%	0.0000%	5.00%	0	0.00E+00	0.00E+00
Flanges	Gas	8.60E-04	0.0%	11.76%	0.0000%	0.57%	378	0.038	1.85E-03
	Light Oil	2.43E-04	0.0%	100.00%	0.0000%	5.00%	735	1.78E-01	8.91E-03
	Heavy Oil	8.60E-07	0.0%	100.00%	0.0000%	5.00%	0	0.00E+00	0.00E+00
Connectors	Gas	4.41E-04	0.0%	11.76%	0.0000%	0.57%	702	0.036	1.76E-03
	Light Oil	4.63E-04	0.0%	100.00%	0.0000%	5.00%	828	0.383	1.92E-02
	Heavy Oil	1.65E-05	0.0%	100.00%	0.0000%	5.00%	0	0.00E+00	0.00E+00
Pumps	Light Oil	2.87E-02	0.0%	100.00%	0.0000%	5.00%	0	0.00E+00	0.00E+00
	Heavy Oil	2.87E-02	0.0%	100.00%	0.0000%	5.00%	18	5.16E-01	2.58E-02
Other	Gas	1.94E-02	0.0%	11.76%	0.0000%	0.57%	0	0.0000	0.00E+00
	Light Oil	1.65E-02	0.0%	100.00%	0.0000%	5.00%	24	0.397	1.98E-02
	Heavy Oil	7.06E-05	0.0%	100.00%	0.0000%	5.00%	0	0.00E+00	0.00E+00
						Hourly VOC Emission Rate (lb/hr)[4]	1.70		
						Annual VOC Emission Rate (tpy)[5]	7.46		
						Hourly H_2S Emission Rate (lb/hr)[4]	--		
						Annual H_2S Emission Rate (tpy)[5]	--		
						Hourly HAP Emission Rate (lb/hr)[4]	0.085		
						Annual HAP Emission Rate (tpy)[5]	0.37		

Notes:

[1] Emission factors from Table 2-4 of EPA Protocol for Equipment Leak Emission Estimates, 1995.

[2] Weight percent of liquid components are assumed to be 100 % VOC and 5% HAP

[3] Subcomponent counts for each subcomponent are based on estimated average component counts for each piece of equipment.

[4] Hourly emissions and annual emissions are calculation from AECT tools.

Gas Analysis	
	Wt %
Component	(%)
H2S	0.0000
Nitrogen	1.0880
Methane	74.4120
Carbon Dioxide	0.7250
Ethane	12.0190
Propane	6.3100
Isobutane	0.8970
n-Butane	2.1730
Isopentane	0.5480
n-Pentane	0.6100
Hexane	0.4460
Heptane	0.3590
Octanes	0.1740
Nonanes	0.0540
Decanes	0.0290
Undecanes	0.0300
Dodecanes	0.0020
Benzene	0.0470
Toluene	0.0460
E-Benzene	0.0040
m-xylene	0.0210
p-Xylene	0.0000
O-Xylene	0.0060
Total VOCs	**11.76**
Total HAPs	**0.5700**

Cotton Draw Midstream, LLC - Songbird Compressor Station

Startup, Shutdown,Maintenance/Malfunction Emissions Summary

Units: SSM/M

Uncontrolled Emissions												
Unit	**NO_x**		**CO**		**VOC**		**SO_2**		**H_2S**		**Total HAPs**	
	lb/hr	**tons/yr**	**lb/hr**	**tons/yr**	**lb/hr**	**tons/yr**	**lb/hr**	**tons/yr**	**lb/hr**	**tons/yr**	**lb/hr**	**tons/yr**
FL-1 SSM[1]	0.012	0.05	0.025	0.11	-	-	0.0040	0.017	-	-	-	-
Compressor Vents	-	-	-	-	14.19	62.15	-	-	-	-	0.66	2.89
Pigging	-	-	-	-	38.54	0.98	-	-	-	-		
TOTAL	**0.012**	**0.054**	**0.025**	**0.109**	**52.731**	**63.134**	**0.004**	**0.017**	**-**	**-**	**0.661**	**2.895**

[1] Combustion emissions from pilot fuel combustion only

Controlled Emissions												
Unit	**NO_x**		**CO**		**VOC**		**SO_2**		**H_2S**		**Total HAPs**	
	lb/hr	**tons/yr**	**lb/hr**	**tons/yr**	**lb/hr**	**tons/yr**	**lb/hr**	**tons/yr**	**lb/hr**	**tons/yr**	**lb/hr**	**tons/yr**
Flare SSM	0.13	0.55	0.25	1.09	1.36	5.97	0.0040	0.02	-	-	0.06	0.28
Compressor Vents	-	-	-	-	0.35	1.55	-	-	-	-	0.02	0.07
Pigging	-	-	-	-	38.54	0.983	-	-	-	-		
TOTAL	**0.125**	**0.548**	**0.250**	**1.095**	**40.260**	**8.511**	**0.004**	**0.017**	**-**	**-**	**0.080**	**0.350**

Notes

Cotton Draw Midstream, LLC - Songbird Compressor Station

SSM Flare

Emission Unit: FL-1 SSM
Source Description: Compressor Blowdown events
Control Efficiency: 98% DRE

VOC Heat Input and Flow Rate Calculation Per Unit

Parameters	Value	Unit	Notes
Number of SSM flares	1	-	
Blowdown Volume	5000000.00	scf/yr	Conservative estimation for total blowdown volume from facility
VOC Emissions	298.71	tpy	Compressor Blowdown events
HAP Emissions	13.90	tpy	Compressor Blowdown events
Total SSM Heating Value	1173.05	Btu/scf	Weighted average heating value from all streams
Total SSM Flow	570.776	scf/hr	Total flow from all streams to flare
Total SSM Heating Rate	0.6695	MMBtu/hr	Calculated based on heating value and steady-state flow
SSM Flow Rate with Safety Factor	10%	%	Safety factor
	627.85	scf/hr	Flow with safety factor
	5.500	MMscf/yr	
Short-Term Safety Factor	10%	-	Applied to emissions to account for variations in heat content.
Heating Rate	0.810	MMBtu/hr	
Flare pilot	65	scf/hr	Manufacturer specs
	10%		Safety factor
	72	scf/hr	Pilot flow with safety factor
	7.15E-05	MMscf/hr	
Hours of Operation	8760.00	hrs	
Pipeline Gas HHV	1260	Btu/scf	Facility specification
Flare Heat Input	0.090	MMBtu/hr	
	0.63	MMscf/yr	
Heating Rate + Pilot	0.90	MMBtu/hr	
Purge Gas Flow Rate	6	scf/hr	Manufacturer specs
Purge Gas VOC Emission	3.58E-04	tpy	
Purge Gas HAP Emission	1.67E-05	tpy	
Purge Gas Heating Rate	1173.05	Btu/scf	
Flare Heat Input	7.04E-03	MMBtu/hr	
	6.17E+01	MMscf/yr	
Total Daily Flow Rate	15402.63	SCF/D	

Emission Rates Per Unit

	NO_X	CO	VOC[1]	SO_2[2]	H_2S	CH_4[3]	CO_2[3]	N_2O[3]	HAPs[1]	Units	Notes
Emission Factors	0.1380	0.2755								lb/MMBtu	TNRCC RG-109 (high Btu; other)
						1.00E-03	53.06	1.00E-04		Kg/MMBtu	40 CFR 98 Subpart C Table C-01 & C-02
										lb H_2S/Mscf	
				2.00						gr S / 100 scf	NMED
			298.71		-				13.90	tpy	Compressor Blowdown events
Pilot Emissions	0.01	0.02	-	3.71E-04		1.99E-04	10.54	1.99E-05	-	lb/hr	
	0.05	0.11	-	1.63E-03		8.70E-04	46.16	8.70E-05	-	tpy	
Process + Purge Emissions	0.11	0.23	1.36	3.62E-03	-	1.80E-03	95.59	1.80E-04	0.06	lb/hr	
	0.49	0.99	5.97	0.02	-	0.01	418.70	7.89E-04	0.28	tpy	
Total Emissions	**0.13**	**0.25**	**1.36**	**3.99E-03**	**-**	**2.00E-03**	**106.13**	**2.00E-04**	**0.06**	lb/hr	
	0.55	**1.09**	**5.97**	**1.75E-02**	**-**	**0.01**	**464.85**	**8.76E-04**	**0.28**	tpy	

[1] The flare controls VRU downtime with an assumed 98% DRE for VOC and HAPs. 98% DRE

[2] Fuel sulfur content is assumed to be 2 gr/100 scf

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

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

GHG Emissions

CO_2[3]	N_2O[3]	CH_4[3]	CO_2e[4]	Units	Notes
464.85	8.76E-04	0.01		tpy	
1	298	25		GWP	40 CFR 98 Table A-1
464.85	**0.26**	**0.22**	**465.33**	tpy CO_2e	

[4] CO_2e tpy Emission Rate = CO_2 Emission Rate + N_2O Emission Rate*GWP Factor +CH_4 Emission Rate*GWP Factor

Exhaust Parameters

Stack Height	35	ft	Mfg. Specs
Stack Diameter	0.33	ft	Mfg. Specs
Exhaust Temperature	1832	F	NMED Air Dispersion Modeling Guidelines
exit velocity	65.617	ft/s	NMED Air Dispersion Modeling Guidelines

Cotton Draw Midstream, LLC - Songbird Compressor Station

Compressor Vents

Unit: Compressor Vents
Description: Distance Piece and Packing Venting
Control Equipment: Condenser and ECD (Unit ECD-2)
Venting Rate: 120 scf/hr/compressor
Capture Efficiency: 98%

Component	Uncontrolled Flash Gas Emissions[1,3]		Uncontrolled Compressor Venting Emissions[1]		Total Uncontrolled Emissions[1]		Total Controlled Emissions[2]	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
H2S	-	-	-	-	-	-	-	-
N2	-	-	7.79E-01	3.41	0.78	3.41	1.56E-02	0.07
Methane	-	-	30.52	133.66	30.52	133.66	0.61	2.67
CO2	-	-	0.81	3.57	0.81	3.57	0.02	0.07
Ethane	-	-	9.21	40.34	9.21	40.34	0.18	0.81
Propane	-	-	7.02	30.75	7.02	30.75	0.14	0.62
Isobutane	-	-	1.29	5.64	1.29	5.64	0.03	0.11
n-Butane	-	-	3.06	13.41	3.06	13.41	0.06	0.27
Isopentane	-	-	0.89	3.88	0.89	3.88	0.02	0.08
n-Pentane	-	-	0.94	4.12	0.94	4.12	0.02	0.08
Hexane	-	-	0.57	2.49	0.57	2.49	0.01	0.05
Heptane	-	-	0.27	1.18	0.27	1.18	0.01	0.02
Octane	-	-	0.05	0.24	0.05	0.24	1.09E-03	0.00
Nonane	-	-	0.01	0.03	0.01	0.03	1.19E-04	5.23E-04
Decane	-	-	1.15E-03	0.01	1.15E-03	0.01	2.30E-05	1.01E-04
Undecane	-	-	3.84E-04	1.68E-03	3.84E-04	0.00	7.69E-06	3.37E-05
Dodecane	-	-	8.80E-06	3.85E-05	8.80E-06	0.00	1.76E-07	7.71E-07
Benzene	-	-	0.06	0.24	0.06	0.24	0.00	0.00
Toluene	-	-	0.03	0.13	0.03	0.13	0.00	0.00
Ethylbenzene	-	-	0.00	0.00	0.00	0.00	0.00	0.00
m-Xylene	-	-	0.01	0.02	0.01	0.02	0.00	0.00
p-Xylene	-	-	-	-	-	-	-	-
o-Xylene	-	-	0.00	0.01	0.00	0.01	2.73E-05	0.00
TEG	-	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sulfur Dioxide	-	-	-	-	-	-	-	-
NO2	-	-	-	-	-	-	-	-
CO	-	-	-	-	-	-	-	-
Water	-	-	0.08	0.36	0.08	0.36	0.00	0.01
Total	**-**	**-**	**55.59**	**243.50**	**55.59**	**243.50**	**1.11**	**4.87**
VOC	**-**	**-**	**14.19**	**62.15**	**14.19**	**62.15**	**0.28**	**1.24**
HAP	**-**	**-**	**0.66**	**2.89**	**0.66**	**2.89**	**0.01**	**0.06**

Compressor Vents Emission Summary	Uncontrolled[1]		Controlled[2]		Controlled w/ SF [3]	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
VOC	14.19	62.15	0.28	1.24	0.35	1.55
HAP	0.66	2.89	0.01	0.06	0.02	0.07
H_2S	0.00	0.00	0.00	0.00	0.00	0.00

Notes

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

[2] 98% of emissions from compressor venting is captured and routed to a combustor (Unit ECD-2). The remaining 2% of emissions escape to the atmosphere.

[3] 25% Safety Factor included

Cotton Draw Midstream, LLC - Songbird Compressor Station

Pigging Emissions Calculations

Pigging Parameters			
	Internal Diameter (ft)	Length (ft)	Volume (scf)
24" Section	1.94	68	200.49
30" Section	2.44	15	70.00
Total			270.48

Operating Pressure, psig	Inlet Gas Density, (lbm/ft3)	lbs released per venting event	wt% VOC	lbs VOC released per venting event	(lbs/yr VOC)[1]	VOC (tpy) [1]
100	0.49	132.74	29.03%	38.54	1966	0.98

[1] Annual VOC is based on pigging occuring 51 weeks of the year.

Inlet Gas Compositions	
Components	wt%
H2S	0.00%
N2	1.34%
Methane	52.37%
CO2	1.40%
Ethane	15.86%
Propane	12.21%
Isobutane	2.29%
n-Butane	5.54%
Isopentane	1.73%
n-Pentane	1.93%
Hexane	1.69%
Heptane	1.58%
Octane	0.87%
Nonane	0.30%
Decane	0.18%
Undecane	0.21%
Dodecane	0.01%
Benzene	0.16%
Toluene	0.19%
Ethylbenzene	0.02%
m-Xylene	0.10%
p-Xylene	0.00%
o-Xylene	0.03%
TEG	0.00%
Sulfur Dioxide	0.00%
NO2	0.00%
CO	0.00%
Water	0.00%
Total	100.00%
Total VOC	29.03%

Section 7

Information Used To Determine Emissions

Information Used to Determine Emissions shall include the following:

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

Documentation used to support calculation in this permit application

- Current version of AP-42 located at: http://www.epa.gov/ttn/chief/ap42/index.html. Specific sections used in this application:
  - Subsection 1.4 – Natural Gas External Combustion Sources-Natural Gas (Table 1.4-1, 1.4-2 & 1.4-3) **[Units ECD-1, ECD-2, FL-1 SSM, and RBL-1]**
  - Subsection 3.2 – Natural Gas-Fired Reciprocating Engines (Table 3.2-2) **[Units ENG-1 through ENG-8]**
- Compressor Manufacturer Specifications **[Units ENG-1 through ENG-8]**
- TCEQ TNRCC RG-109 Flare Guidance documentation **[Units FL-1 SSM, ECD-1, and ECD-2]**
- ProMax output for gunbarrel tank **[Unit TK-1]**, condensate Tanks **[Unit TK-2, TK-3, and TK-4]**, and produced water tanks **[Units TK-5, TK-6, and TK-7]**.
- Laboratory Services Extended Gas analysis No. 1129G. **[Unit DEHY-1 and inlet gas analysis for ProMax input]**
- 40 CFR Subpart C (Table C-1 and C-2) **[Units ENG-1 through ENG-8, RBL-1, FL-1 SSM, ECD-1, and ECD-2]**

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

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

[a] Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. To convert from $lb/10^6$ scf to $kg/10^6$ m^3, multiply by 16. Emission factors are based on an average natural gas higher heating value of 1,020 Btu/scf. To convert from $lb/10^6$ scf to lb/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. SCC = Source Classification Code. ND = no data. NA = not applicable.

[b] Expressed as NO_2. For large and small wall fired boilers with SNCR control, apply a 24 percent reduction to the appropriate NO_X emission factor. For tangential-fired boilers with SNCR control, apply a 13 percent reduction to the appropriate NO_X emission factor.

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

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

Pollutant	Emission Factor ($lb/10^6$ scf)	Emission Factor Rating
CO_2[b]	120,000	A
Lead	0.0005	D
N_2O (Uncontrolled)	2.2	E
N_2O (Controlled-low-NO_X burner)	0.64	E
PM (Total)[c]	7.6	D
PM (Condensable)[c]	5.7	D
PM (Filterable)[c]	1.9	B
SO_2[d]	0.6	A
TOC	11	B
Methane	2.3	B
VOC	5.5	C

[a] Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. Data are for all natural gas combustion sources. To convert from $lb/10^6$ scf to $kg/10^6$ m^3, multiply by 16. To convert from $lb/10^6$ scf to 1b/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. TOC = Total Organic Compounds. VOC = Volatile Organic Compounds.

[b] Based on approximately 100% conversion of fuel carbon to CO_2. $CO_2[lb/10^6 \text{ scf}] = (3.67)(CON)(C)(D)$, where CON = fractional conversion of fuel carbon to CO_2, C = carbon content of fuel by weight (0.76), and D = density of fuel, 4.2×10^4 $lb/10^6$ scf.

[c] All PM (total, condensible, and filterable) is assumed to be less than 1.0 micrometer in diameter. Therefore, the PM emission factors presented here may be used to estimate PM_{10}, $PM_{2.5}$ or PM_1 emissions. Total PM is the sum of the filterable PM and condensible PM. Condensible PM is the particulate matter collected using EPA Method 202 (or equivalent). Filterable PM is the particulate matter collected on, or prior to, the filter of an EPA Method 5 (or equivalent) sampling train.

[d] Based on 100% conversion of fuel sulfur to SO_2. Assumes sulfur content is natural gas of 2,000 grains/10^6 scf. The SO_2 emission factor in this table can be converted to other natural gas sulfur contents by multiplying the SO_2 emission factor by the ratio of the site-specific sulfur content (grains/10^6 scf) to 2,000 grains/10^6 scf.

TABLE 1.4-3. EMISSION FACTORS FOR SPECIATED ORGANIC COMPOUNDS FROM NATURAL GAS COMBUSTION[a]

CAS No.	Pollutant	Emission Factor (lb/10^6 scf)	Emission Factor Rating
91-57-6	2-Methylnaphthalene[b, c]	2.4E-05	D
56-49-5	3-Methylcholanthrene[b, c]	<1.8E-06	E
	7,12-Dimethylbenz(a)anthracene[b,c]	<1.6E-05	E
83-32-9	Acenaphthene[b,c]	<1.8E-06	E
203-96-8	Acenaphthylene[b,c]	<1.8E-06	E
120-12-7	Anthracene[b,c]	<2.4E-06	E
56-55-3	Benz(a)anthracene[b,c]	<1.8E-06	E
71-43-2	Benzene[b]	2.1E-03	B
50-32-8	Benzo(a)pyrene[b,c]	<1.2E-06	E
205-99-2	Benzo(b)fluoranthene[b,c]	<1.8E-06	E
191-24-2	Benzo(g,h,i)perylene[b,c]	<1.2E-06	E
207-08-9	Benzo(k)fluoranthene[b,c]	<1.8E-06	E
106-97-8	Butane	2.1E+00	E
218-01-9	Chrysene[b,c]	<1.8E-06	E
53-70-3	Dibenzo(a,h)anthracene[b,c]	<1.2E-06	E
25321-22-6	Dichlorobenzene[b]	1.2E-03	E
74-84-0	Ethane	3.1E+00	E
206-44-0	Fluoranthene[b,c]	3.0E-06	E
86-73-7	Fluorene[b,c]	2.8E-06	E
50-00-0	Formaldehyde[b]	7.5E-02	B
110-54-3	Hexane[b]	1.8E+00	E
193-39-5	Indeno(1,2,3-cd)pyrene[b,c]	<1.8E-06	E
91-20-3	Naphthalene[b]	6.1E-04	E
109-66-0	Pentane	2.6E+00	E
85-01-8	Phenanathrene[b,c]	1.7E-05	D
74-98-6	Propane	1.6E+00	E

TABLE 1.4-3. EMISSION FACTORS FOR SPECIATED ORGANIC COMPOUNDS FROM NATURAL GAS COMBUSTION (Continued)

CAS No.	Pollutant	Emission Factor ($lb/10^6$ scf)	Emission Factor Rating
129-00-0	Pyrene[b, c]	5.0E-06	E
108-88-3	Toluene[b]	3.4E-03	C

[a] Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. Data are for all natural gas combustion sources. To convert from $lb/10^6$ scf to $kg/10^6$ m^3, multiply by 16. To convert from $lb/10^6$ scf to lb/MMBtu, divide by 1,020. Emission Factors preceeded with a less-than symbol are based on method detection limits.

[b] Hazardous Air Pollutant (HAP) as defined by Section 112(b) of the Clean Air Act.

[c] HAP because it is Polycyclic Organic Matter (POM). POM is a HAP as defined by Section 112(b) of the Clean Air Act.

[d] The sum of individual organic compounds may exceed the VOC and TOC emission factors due to differences in test methods and the availability of test data for each pollutant.

Table 3.2-2. UNCONTROLLED EMISSION FACTORS FOR 4-STROKE LEAN-BURN ENGINES[a]
(SCC 2-02-002-54)

Pollutant	Emission Factor (lb/MMBtu)[b] (fuel input)	Emission Factor Rating
Criteria Pollutants and Greenhouse Gases		
NO_x[c] 90 - 105% Load	4.08 E+00	B
NO_x[c] <90% Load	8.47 E-01	B
CO[c] 90 - 105% Load	3.17 E-01	C
CO[c] <90% Load	5.57 E-01	B
CO_2[d]	1.10 E+02	A
SO_2[e]	5.88 E-04	A
TOC[f]	1.47 E+00	A
Methane[g]	1.25 E+00	C
VOC[h]	1.18 E-01	C
PM10 (filterable)[i]	7.71 E-05	D
PM2.5 (filterable)[i]	7.71 E-05	D
PM Condensable[j]	9.91 E-03	D
Trace Organic Compounds		
1,1,2,2-Tetrachloroethane[k]	<4.00 E-05	E
1,1,2-Trichloroethane[k]	<3.18 E-05	E
1,1-Dichloroethane	<2.36 E-05	E
1,2,3-Trimethylbenzene	2.30 E-05	D
1,2,4-Trimethylbenzene	1.43 E-05	C
1,2-Dichloroethane	<2.36 E-05	E
1,2-Dichloropropane	<2.69 E-05	E
1,3,5-Trimethylbenzene	3.38 E-05	D
1,3-Butadiene[k]	2.67E-04	D
1,3-Dichloropropene[k]	<2.64 E-05	E
2-Methylnaphthalene[k]	3.32 E-05	C
2,2,4-Trimethylpentane[k]	2.50 E-04	C
Acenaphthene[k]	1.25 E-06	C

Table 3.2-2. UNCONTROLLED EMISSION FACTORS FOR 4-STROKE LEAN-BURN ENGINES
(Continued)

Pollutant	Emission Factor (lb/MMBtu)[b] (fuel input)	Emission Factor Rating
Acenaphthylene[k]	5.53 E-06	C
Acetaldehyde[k,l]	8.36 E-03	A
Acrolein[k,l]	5.14 E-03	A
Benzene[k]	4.40 E-04	A
Benzo(b)fluoranthene[k]	1.66 E-07	D
Benzo(e)pyrene[k]	4.15 E-07	D
Benzo(g,h,i)perylene[k]	4.14 E-07	D
Biphenyl[k]	2.12 E-04	D
Butane	5.41 E-04	D
Butyr/Isobutyraldehyde	1.01 E-04	C
Carbon Tetrachloride[k]	<3.67 E-05	E
Chlorobenzene[k]	<3.04 E-05	E
Chloroethane	1.87 E-06	D
Chloroform[k]	<2.85 E-05	E
Chrysene[k]	6.93 E-07	C
Cyclopentane	2.27 E-04	C
Ethane	1.05 E-01	C
Ethylbenzene[k]	3.97 E-05	B
Ethylene Dibromide[k]	<4.43 E-05	E
Fluoranthene[k]	1.11 E-06	C
Fluorene[k]	5.67 E-06	C
Formaldehyde[k,l]	5.28 E-02	A
Methanol[k]	2.50 E-03	B
Methylcyclohexane	1.23 E-03	C
Methylene Chloride[k]	2.00 E-05	C
n-Hexane[k]	1.11 E-03	C
n-Nonane	1.10 E-04	C

Table 3.2-2. UNCONTROLLED EMISSION FACTORS FOR 4-STROKE LEAN-BURN ENGINES
(Continued)

Pollutant	Emission Factor (lb/MMBtu)[b] (fuel input)	Emission Factor Rating
n-Octane	3.51 E-04	C
n-Pentane	2.60 E-03	C
Naphthalene[k]	7.44 E-05	C
PAH[k]	2.69 E-05	D
Phenanthrene[k]	1.04 E-05	D
Phenol[k]	2.40 E-05	D
Propane	4.19 E-02	C
Pyrene[k]	1.36 E-06	C
Styrene[k]	<2.36 E-05	E
Tetrachloroethane[k]	2.48 E-06	D
Toluene[k]	4.08 E-04	B
Vinyl Chloride[k]	1.49 E-05	C
Xylene[k]	1.84 E-04	B

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

[b] Emission factors were calculated in units of (lb/MMBtu) based on procedures in EPA Method 19. To convert from (lb/MMBtu) to (lb/10^6 scf), multiply by the heat content of the fuel. If the heat content is not available, use 1020 Btu/scf. To convert from (lb/MMBtu) to (lb/hp-hr) use the following equation:

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

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

[d] Based on 99.5% conversion of the fuel carbon to CO_2. CO_2 [lb/MMBtu] = (3.67)(%CON)(C)(D)(1/h), where %CON = percent conversion of fuel carbon to CO_2, C = carbon content of fuel by weight (0.75), D = density of fuel, 4.1 E+04 lb/10^6 scf, and

BHE COMPRESSION SERVICES ENGINE EMISSIONS PEDIGREE

BHECS Unit TBD

Cotton Draw Midstream Songbird Compressor Station

ENGINE SPECIFICATIONS

Make	Caterpillar	Model	G3608A4
Serial Number	TBD	Manufacture Date	Post 7/1/2010
Fuel Type	Natural Gas	Combustion Type	4 Stroke Lean Burn
HP Rating	2500	# of Combustion Cylinders	8
RPM	1000	Displacement	10350 in^3

ENGINE AIR REGULATION LIMITS

NSPS Subpart JJJJ	EMD after 7/1/2010	NESHAP Subpart ZZZZ	Comply with JJJJ
NOx	1.0 g/hp-hr	If located at Major Source , also meet	14 ppm CH2O or 93% CO reduction
CO	2.0 g/hp-hr		
VOC	0.7 g/hp-hr		

RAW ENGINE EMISSIONS

Fuel Heating Value Basis	1260	HHV Btu/scf		
Site HP Rating	2500	Avg Fuel Consumption Rate	15,000	scf/hr
Site Max HP[3]	2500	Max Fuel Consumption Rate	18,750	scf/hr + 25% Safety Factor

			Raw Engine Emissions		
Criteria Pollutants	**Emission Factor**		**Avg lb/hr**	**Max lb/hr[3]**	**Annual TPY**
NO_x	0.3	g/hp-hr[1]	1.653	1.653	7.242
CO	3.51	g/hp-hr[1]	19.345	19.345	84.732
Total VOC (excl. CH2O)	1.09	g/hp-hr[1]	6.007	6.007	26.313
CH2O	0.16	g/hp-hr[1]	0.882	0.882	3.862
SO_2	5.88E-04	lb/MMBtu[2]	0.011	0.014	0.049
PM_{10}	7.71E-05	lb/MMBtu[2]	0.001	0.002	0.006
PM	9.91E-03	lb/MMBtu[2]	0.187	0.234	0.820

						100-yr CO_{2e}
Greenhouse Gases			**100-yr GWP**	**Avg lb/hr**	**Max lb/hr[3]**	**Annual Metric TPY**
CO_2	460	g/hp-hr[1]	1	2,535	2,535	10,072
CH_4	2.34	g/hp-hr[1]	25	322	322	1,281
N_2O	9.50E-08	tonnes/mmBTU (HHV)[4]	298	1	1	5

[1] Emissions factor based on Caterpillar's Gas Engine Rating Program (GERP) manufacturer specifications using site-specific fuel gas composition.

[2] Emissions factor based on EPA's AP-42 Emissions Factors (Fifth Edition, Volume I) , Chapter 3.2 Natural Gas-Fired Reciprocating (7/00), Table 3.2.2 Uncontrolled Emissions Factors for 4-Stroke Lean-Burn Engines.

[3] Maximum lb/hr emissions are based on Caterpillar published Maximum HP Rating for the G3608TALE A4 engine.

[4] Emissions factor is based on an API Compendium Emissions Factors documented in Table 4-5 (page 4-21) of API's "Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industry", August 2009.

POST-CONTROL EMISSIONS

Post-Combustion Controls	Oxidation Catalyst	Other Emissions Controls	Exhaust Pipe Insulation
Catalytic Converter Make	DCL America Inc.	Catalytic Converter Model	3ARC1T6-20/24HGS
		Number of Catalyst Elements in Housing	6

		Post-Controlled Engine Emissions		
Criteria Pollutants	**Control Efficiency, %**	**Avg lb/hr**	**Max lb/hr[3]**	**Annual TPY**
NO_x	0%	1.653	1.653	7.242
CO	96%	0.774	0.774	3.389
Total VOC (excl. CH2O)	70%	1.802	1.802	7.894
CH2O	85%	0.132	0.132	0.579
SO_2	0%	0.011	0.014	0.049
PM_{10}	0%	0.001	0.002	0.006
PM	0%	0.187	0.234	0.820

					100-yr CO_{2e}
Greenhouse Gases		**100-yr GWP**	**Avg lb/hr**	**Max lb/hr[3]**	**Annual Metric TPY**
CO_2	0%	1	2,535	2,535	10,072
CH_4	0%	25	322	322	1,281
N_2O	0%	298	1	1	5

G3608

GAS ENGINE SITE SPECIFIC TECHNICAL DATA
3608

CATERPILLAR®

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

RATING STRATEGY:	STANDARD
RATING LEVEL:	CONTINUOUS
FUEL SYSTEM:	GAV
	WITH AIR FUEL RATIO CONTROL
SITE CONDITIONS:	
FUEL:	Songbird (BIG SINKS COMP FUEL_01262022)
FUEL PRESSURE RANGE(psig): (See note 1)	58.0-70.3
FUEL METHANE NUMBER:	52.6
FUEL LHV (Btu/scf):	1143
ALTITUDE(ft):	3400
INLET AIR TEMPERATURE(°F):	105
STANDARD RATED POWER:	2500 bhp@1000rpm

				MAXIMUM RATING	SITE RATING AT MAXIMUM INLET AIR TEMPERATURE		
RATING		**NOTES**	**LOAD**	**100%**	**100%**	**75%**	**50%**
ENGINE POWER	(WITHOUT FAN)	(2)	bhp	2500	2500	1875	1250
INLET AIR TEMPERATURE			°F	105	105	105	105
ENGINE DATA							
FUEL CONSUMPTION (LHV)		(3)	Btu/bhp-hr	6857	6857	7084	7584
FUEL CONSUMPTION (HHV)		(3)	Btu/bhp-hr	7558	7558	7808	8359
AIR FLOW (@inlet air temp, 14.7 psia)	(WET)	(4)(5)	ft3/min	6757	6757	5121	3482
AIR FLOW	(WET)	(4)(5)	lb/hr	28477	28477	21581	14672
FUEL FLOW (60°F, 14.7 psia)			scfm	250	250	194	138
INLET MANIFOLD PRESSURE		(6)	in Hg(abs)	106.0	106.0	80.1	55.9
EXHAUST TEMPERATURE - ENGINE OUTLET		(7)	°F	809	809	852	916
EXHAUST GAS FLOW (@engine outlet temp, 14.5 psia)	(WET)	(5)(8)	ft3/min	16136	16136	12652	9040
EXHAUST GAS MASS FLOW	(WET)	(5)(8)	lb/hr	29340	29340	22249	15149
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	3.51	3.51	3.50	3.51
THC (mol. wt. of 15.84)		(9)(10)	g/bhp-hr	4.17	4.17	4.43	4.49
NMHC (mol. wt. of 15.84)		(9)(10)	g/bhp-hr	1.83	1.83	1.94	1.97
NMNEHC (VOCs) (mol. wt. of 15.84)		(9)(10)(11)	g/bhp-hr	1.09	1.09	1.16	1.18
HCHO (Formaldehyde)		(9)(10)	g/bhp-hr	0.16	0.16	0.17	0.20
CO2		(9)(10)	g/bhp-hr	460	460	478	508
EXHAUST OXYGEN		(9)(12)	% DRY	11.7	11.7	11.4	11.0
HEAT REJECTION							
HEAT REJ. TO JACKET WATER (JW)		(13)	Btu/min	28122	28122	23442	19278
HEAT REJ. TO ATMOSPHERE		(13)	Btu/min	9361	9361	9837	9525
HEAT REJ. TO LUBE OIL (OC)		(13)	Btu/min	13023	13023	12384	11293
HEAT REJ. TO A/C - STAGE 1 (1AC)		(13)(14)	Btu/min	29137	29137	14953	4493
HEAT REJ. TO A/C - STAGE 2 (2AC)		(13)(14)	Btu/min	9471	9471	5976	3019
COOLING SYSTEM SIZING CRITERIA							
TOTAL JACKET WATER CIRCUIT (JW+1AC)		(14)(15)	Btu/min	61528			
TOTAL STAGE 2 AFTERCOOLER CIRCUIT (OC+2AC)		(14)(15)	Btu/min	25571			
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. Refer to product O&M manual for details on additional lower load capability. No overload permitted at rating shown.

For notes information consult page three.

G3608

GAS ENGINE SITE SPECIFIC TECHNICAL DATA
3608

CATERPILLAR®

Constituent	Abbrev	Mole %	Norm
Water Vapor	H2O	0.0000	0.0000
Methane	CH4	75.0852	75.0852
Ethane	C2H6	11.7657	11.7657
Propane	C3H8	5.8386	5.8386
Isobutane	iso-C4H10	0.9692	0.9692
Norbutane	nor-C4H10	1.9243	1.9243
Isopentane	iso-C5H12	0.4226	0.4226
Norpentane	nor-C5H12	0.4514	0.4514
Hexane	C6H14	0.1803	0.1803
Heptane	C7H16	0.0599	0.0599
Nitrogen	N2	1.0669	1.0669
Carbon Dioxide	CO2	2.2243	2.2243
Hydrogen Sulfide	H2S	0.0001	0.0001
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	0.0106	0.0106
Nonane	C9H20	0.0009	0.0009
Ethylene	C2H4	0.0000	0.0000
Propylene	C3H6	0.0000	0.0000
TOTAL (Volume %)		100.0000	100.0000

Fuel Makeup:	Songbird (BIG SINKS COMP FUEL_01262022)
Unit of Measure:	English

Calculated Fuel Properties

Caterpillar Methane Number:	52.6
Lower Heating Value (Btu/scf):	1143
Higher Heating Value (Btu/scf):	1260
WOBBE Index (Btu/scf):	1313
THC: Free Inert Ratio:	29.38
Total % Inerts (% N2, CO2, He):	3.29%
RPC (%) (To 905 Btu/scf Fuel):	100%
Compressibility Factor:	0.996
Stoich A/F Ratio (Vol/Vol):	11.86
Stoich A/F Ratio (Mass/Mass):	15.62
Specific Gravity (Relative to Air):	0.759
Fuel Specific Heat Ratio (K):	1.280

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.

Equipment Specification

Proposal Information

Proposal Number:	TJ-22-007131 Rev(1)	Date:	**11/16/2022**
Project Reference:	Songbird 3608 6 Catalyst Performance		

Engine Information

Engine Make:	Caterpillar	Speed:	Rated
Engine Model:	G3608A4	Power Output:	2,500 bhp
Rated Speed:	1000 RPM	Exhaust Flow Rate:	16,136 acfm (cfm)
Fuel Description:	Natural Gas	Exhaust Temperature:	820 ° F
Hours Of Operation:	8760 Hours per year	Fuel Consumption:	38.3 gal/hr
Load:	100%	O_2:	11.3%
		H_2O:	17%

Emission Data (100% Load)

Emission	Raw Engine Emissions						Target Outlet Emissions						Calculated Reduction
	g/bhp-hr	*tons/yr*	*ppmvd @ 15% O_2*	*ppmvd*	*g/kW-hr*	*lb/MW-hr*	*g/bhp-hr*	*tons/yr*	*ppmvd @ 15% O_2*	*ppmvd*	*g/kW-hr*	*lb/MW-hr*	
NO_x*	*0.3*	7.24	26	42	0.402	0.89							
CO	*3.5*	84.49	492	800	4.694	10.35	0.14	3.38	20	32	0.188	0.41	*96%*
NMNEHC**	*1.09*	26.31	267	435	1.462	3.22	0.33	7.89	80	131	0.439	0.97	70%
CH_2O	*0.16*	3.86	21	34	0.215	0.47	0.02	0.58	3	5	0.032	0.07	*85%*

Replacement Element

Catalyst (MECB-OXZ-SQ-3600-21010026)

Element Model Number:	MECB-OXZ-SQ-3600-21010026
Number of Catalyst Layers:	2
Number of Catalyst Per Layer:	3
Catalyst Back Pressure:	6.0 inH_2O (Clean)
Design Exhaust Flow Rate:	16,136 acfm (cfm)
Design Exhaust Temperature:	820° F
Dimensions:	15 in x 36 in
Exhaust Temperature Limits***:	550° F – 1250° F (catalyst inlet); 1350° F (catalyst outlet)

November 22nd, 2022

ZAP Engineering and Construction Services, Inc

Attention: Athena Lakobong, Buyer

Subject: CDM Songbird Compressor Station
Enclosed Combustor Tag ECD-9101

Dear Athena:

Thank you for the opportunity to present our proposal for the supply of an identical MRW Enclosed Tank Combustor System to the one supplied for Falcon. MRW is proposing our standard combustor sized for a capacity of 12 MM BTU/HR to provide the most economical, robust, and complete system.

The system described herein includes the following:

- *One (1) MRW* Enclosed *Combustor System* – Durable and reliable, the stack will be designed for combustion of the tank vapor off gas.
- *MRW Pilot* - MRW pilots are designed for fast, reliable ignition and extended life.
- *MRW Burner Assembly* – *the* MRW burner will efficiently mix the air and fuel for efficient combustion. The burner is designed to minimize backpressure at high rates, allowing for a very low-pressure vent system that is less likely to cause vapors to escape through the tank battery relief systems.
- *Refractory Lining for Stack* – 2" of 2300°F refractory installed in the flare will increase stack life and improve combustion in the flame zone.
- *One (1) Automatic MRW Burner Management & Ignition System* – This proprietary control system is essential to the successful operation of the combustor including pilot ignition and monitoring, emergency shutdowns, high temperature monitoring, customer communications, etc. (OPTION for PROFIRE)
- *Combustion Air blower*
- *Inlet Flame Arrestor* designed to prevent flame propagation into the upstream piping header in the unlikely event of a flashback.
- *High Temperature Shutdown/Alarm* – The shutdown/alarm will be triggered by a thermocouple located in the stack when a high temperature is reached.

MRW supplies the best enclosed combustors built. Our engineering staff has over 240 years of combustion system design and fabrication experience. Building custom combustion equipment is all we do. We believe our experience and dedication to customer satisfaction are unmatched in the industry. We offer you the confidence of hundreds of successful systems and a team dedicated to meeting your requirements.

The principals of MRW have spent our entire careers designing and building custom combustion equipment. Our reputations are impeccable and we have always met the customer's requirements. We will maintain this record as we continue to provide the most current combustion technology to meet customer needs.

We look forward to working with you further to discuss the supply of this combustor system.

Best Regards,

Keith Herbert
Principal Engineer

PROCESS SPECIFICATIONS

Design Basis:

Table 1: Process Design Basis – Case 1, case 2 is a turndown operation

Inlet Gas (SCFD)	Composition	Total Design Maximum Heat Release MMBtu/hr	Size of Combustor
Case 1 150,000	Per Supplied Spec.	12	5 X 27
Case 2 225,000	"	10.5	-

- The design destruction efficiency of the non-methane hydrocarbons is 98%.
- The design pressure drop will be less than 8 oz for Case 1 and less than 12 oz for Case 2

UTILITIES

Table 2: Flare System Utilities

SERVICE	*UTILITIES*
Pilot Fuel Gas	0.05 MMBTU/HR or less at 15 psig
Power	460 volt, 3 phase, 60 cycle

EQUIPMENT DESCRIPTION

1. **Vapor Combustor Stack**→ One (1) MRW Vapor Combustor complete with the following features:

   1.1. 27-foot overall height and 5-foot diameter Combustor.
   1.2. Vertical, cylindrical, and self-supported combustor. The firebox shell will be of A-36 or equal material welded to AWS standards.
   1.3. The stack will be lined with two (2) 1" layers of ceramic blanket on pins and keepers. All seams are overlapped in all directions to compensate for shrinkage of the blanket after exposure to high temperatures.
   1.4. Burner access opening.
   1.5. Nozzles as follows:
      1.5.1. Sight port.
   1.6. One MRW pilot assembly as described in Item 2 below.
   1.7. One MRW Burner Assembly to allow stable combustion and proper air and fuel mixing.
   1.8. The combustor stack will be sandblasted and painted with a primer and top coat.

2. **Pilot Burner**→ One continuous and energy efficient pilot burner assembly complete with the following features:

   2.1. Designed for reliable flame stability in any operating conditions.
   2.2. Pilot burner tip shall be fabricated from stainless steel, adding extended life to the pilot burner assembly.
   2.3. Air/Fuel Gas mixer attached to pilot burner assembly to allow for a combustible mixture at the pilot burner tip.
   2.4. Equipped with sight port for visual indication of pilot flame.
   2.5. Easily accessible from outside the unit to prevent confined space access.

3. **Burner Management & Ignition System** → One MRW Proprietary Burner Management & Ignition System complete with the following components(OPTION for PROFIRE)

   3.1. One (1) PLC Based NEMA 4X Burner Management & Ignition System Control Panel designed for industrial outdoor use.

3.2. MRW's Proprietary PLC to be pre-programed and pre-wired to the pilot pipe train. PLC to include fully integrated permissives and fail-safe valves and operation(OPTION for PROFIRE)
3.3. Strategically placed spark ignition rod in the tip for rapid & reliable ignition of pilot fuel gas.
3.4. The MRW local control panel shall power the ignition transformer for automatic ignition/re-ignition of the pilot.
3.5. Shade Aide or equal sun shade for the panel screen
3.6. Electrical classification is unclassified
3.7. Electric Spark Ignition Pilot (EFG).
3.8. The control system will include an expandable PLC and will be capable of sending a signal to indicate loss of pilot or high temperature shutdown.
3.9. MRW's Proprietary ignition transformer/flame rod monitoring devices are designed for fast, fail-safe, and reliable ignition and monitoring of the pilot flame.
3.10. MRW has included our standard BMS for combustors of this type.(OPTION for PROFIRE)
3.11. Pilot valve to be pre-piped and prewired into the control system.
3.12. 200' of thermocouple wire
3.13. Auto Ignition - The flare pilot switches shall automatically trigger the ignition transformers to ignite the burner pilot.
3.14. **Pilot Monitoring Device:**
3.14.1. ☑ Flame Rod - The pilot shall be equipped with a flame rod to accurately detect the pilot flame.

4. **Flame Arrestor**→ Inlet Flame Arrestor(3") designed to prevent flame propagation into the waste gas piping in the unlikely event of a flashback:

4.1. Designed for Group D Gasses & sized to minimize backpressure on tanks.
4.2. Flanged design for easy maintenance and removal.
4.3. Shipped loose for field installation by others

5. **Combustion Air/Purge blower**

5.1 one centrifugal air blower c/w TEFC motor for purging the stack prior to startup and providing combustion air during normal operation(motor starter by others)

PRICING

Table 3: Equipment Pricing List

ITEM	*PRICE EACH*
Vapor Combustor Size 5 X 27	[redacted]
OPTION add to substitute PROFIRE BMS for MRW BMS	[redacted]

Notes:

1. We have not included an inlet shutoff valve. It is recommended and we can offer an optional add price upon request.

TERMS

The above prices are firm for 30 days.
The above price is FOB destination with freight prepaid and added to invoice
Prices are exclusive of all taxes, import-export duties or other duties.
Shipping preparations are for domestic shipping only.

Terms and Conditions to be mutually agreed to.

DELIVERY SCHEDULE

- **Our typ schedule would be to submit dwgs for approval 5 weeks after order and o then be ready to ship 14 weeks after approval.**

PAYMENT TERMS – AS RECENTLY AGREED

25% at time of order
30% at submittal of approval drawings
30% at start of fabrication
10% upon notice of ready to ship
5% upon VDDR completion but not to exceed 60 days after shipment.

Invoices are due 100% net 30 days.

OPERATING AND MAINTENANCE MANUALS

One Electronic Manual is included in the selling price.

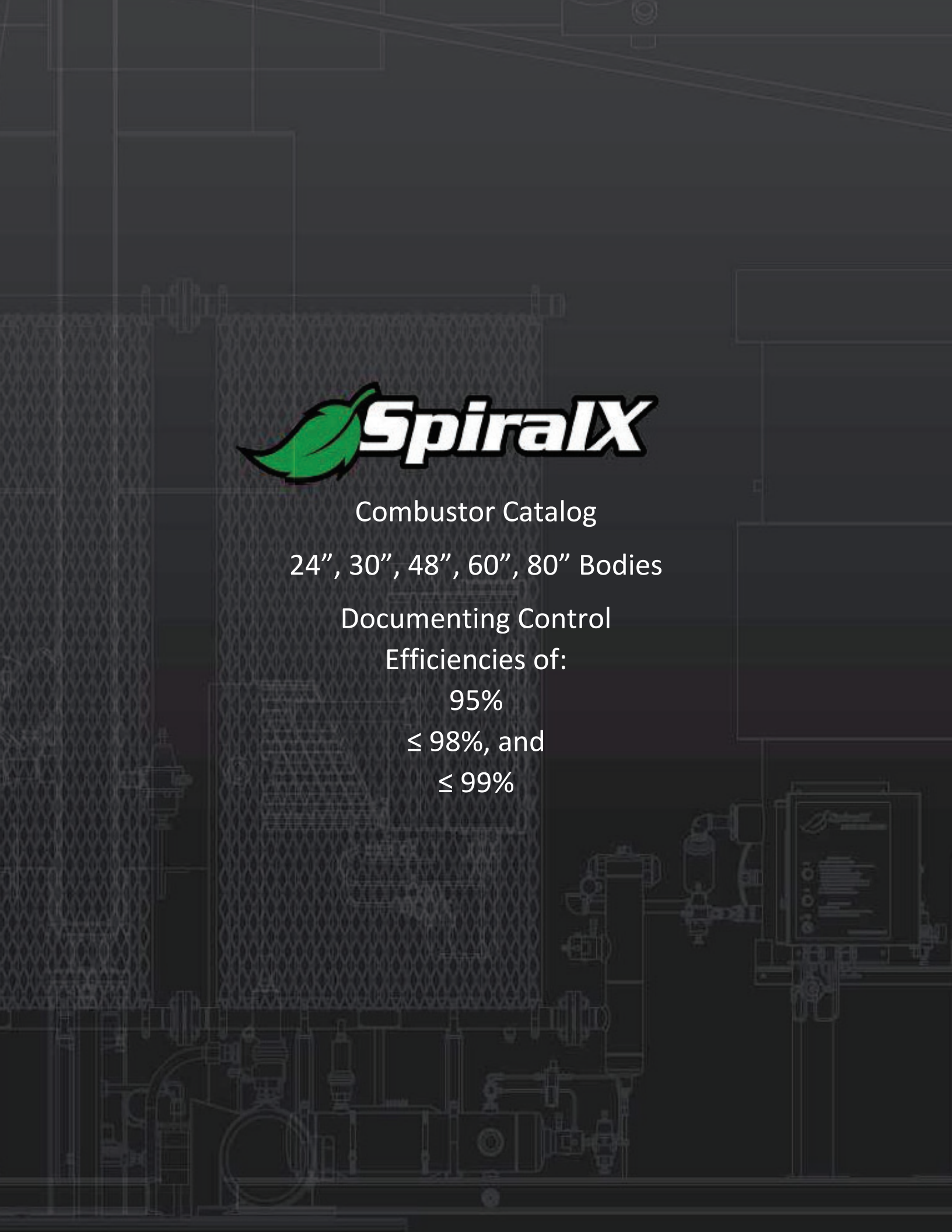
TRAINING, STARTUP, AND COMMISSIONING ASSISTANCE

MRW can provide qualified personnel to assist in startup and commissioning of the flare system. This service is available at a rate of [redacted] per 8-hour day plus travel and living expenses. Overtime (1.5 x standard hourly rate) will be charged for holidays, weekends, or normal workdays in excess of 8 hours.

WARRANTY

MRW warrants for a period of twelve (12) months from readiness to ship that the equipment is designed in accordance with the customer's specifications and/or drawings provided to MRW, and that the equipment is free from defects and workmanship. MRW's only responsibility under this warranty is to adjust, repair or replace faulty equipment at MRW's sole discretion. MRW will not be responsible for any other costs or damages of any kind whatsoever, including removal costs, site labor, lost production, lost sales, lost profits, cost of capital or any other incidental or consequential damages whatsoever. In no event is MRW's liability under this warranty greater that the value of the faulty equipment.

Warranty is not given on parts or accessories unless manufactured by MRW. However, the warranty of the actual manufacturer would apply to these parts.



Combustor Catalog

24”, 30”, 48”, 60”, 80” Bodies

Documenting Control Efficiencies of:

95%

≤ 98%, and

≤ 99%

Table of Contents

1 | INTRODUCTION

SpiralX LLC offers 24”, 30”, 48”, 60” or 80” enclosed flare combustors as an efficient method of destroying BTEX. They are compliant with regulations governing upstream oil and gas facilities (40 CFR 60, Subpart OOOOa) and gas dehydration facilities (40 CFR 63, Subparts HH and HHH). Based on the **Texas Air Quality Act (2015)**, they are designed for the destruction of volatile organic compounds (VOCs) at the following efficiencies:

- ≤ 98% claimed where the pilot flame is continuously monitored with a thermocouple or equivalent device (40 CFR §60.18).
- ≤ 99% claimed when compounds contain only carbon, hydrogen, and oxygen with no more than three carbon atoms. [TAQA (2015), Appendix A]

They can be built on-skid with the condenser as a single unit, or separately on an independent skid. All our combustion units use a Profire™ Burner Management System for the most reliable and efficient means of monitoring the pilot flame. Please look over the many types of units and accessories available within this catalog to see which combustor assembly is right for you. Please call us at 469-480-8802 for any questions you may have.

For more information on SpiralX combustors and other products, visit our YouTube channel: https://youtu.be/UEUGKs_EYhE

1.1 | Competitive Advantage

SpiralX has modified product design per customer feedback and includes:

- Stainless steel burner grids for increased product life. Shown to outlast standard carbon steel and ceramic burner grids.
- Lifting supports located at the top of the combustor for easier handling during transport and a top ring bracket for adding optional accessories such as rain/snow caps and body extensions.
- Dual burner grid option for burning exhaust from two different sources.
- Precision laser cutting for more precise and consistent designs.
- Multi-piece combustor design allows for faster fabrication and easier shipping methods.

1.2 | Important Safety Information

Combustors are an explosion and fire hazard and must always be handled and inspected with caution.

Combustors should always be level or at a slight incline from their condenser units to avoid condensate from entering the combustion chamber.

Condensate fluid is extremely flammable; all safety precautions must be used when operating this system. All outlet piping of BTEX exhaust must slope upward towards method of destruction/collection to allow condensate to fall back into accumulator tank.

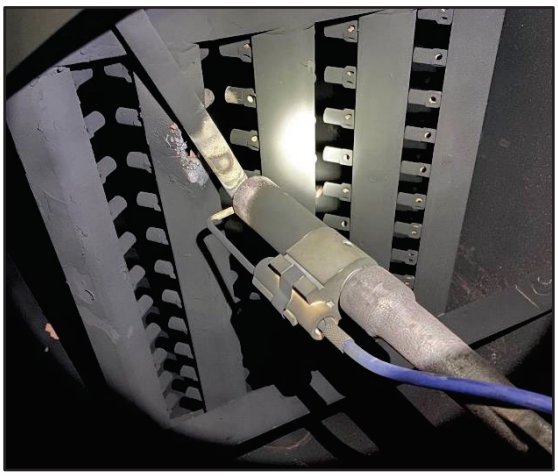
Positions of components shown within this document may differ slightly from your actual unit.

EXPLOSION HAZARD

Do not attempt to service or open access panel unless proper safety precautions have been taken.

All pressure values detailed in this document or in SpiralX general arrangements (GAs) and piping and instrumentation diagrams (P&IDs) must be followed. Setting pressure regulators to incorrect values can result in components not being able to function and/or component damage.

In regards to SpiralX combustors, the fuel gas regulator must be set to 5-7 PSI. Higher values can produce too extreme of a flame, damaging the burner grid as seen in the figure shown here. Always make sure the fuel gas regulator is set to the correct value and the burner jet is positioned in between the burner rails (use access panel to easily reposition pilot assembly).



2 | SIZING

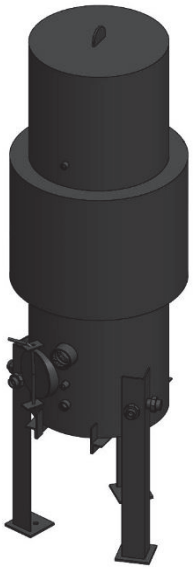
SpiralX LLC combustors are made from A36 structural steel and come in 24”, 30”, 48”, 60” or 80” diameter bodies, depending on the amount of BTEX destruction required. These bodies are surrounded by a steel grate to protect objects from coming is direct contact with the combustion section during operation. The sizes are listed below with their respective dimensions. Note that the on-site dimensions can change depending on the type of skid utilized for the combustor.

2.1 | 24” Combustor

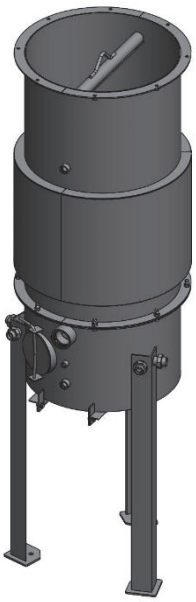
HEIGHT: 97”

WEIGHT: 900 LBS. w/ internals & rain cap

DIAMETER: 28” with grate. 32.17” max with legs.



2.2 | 30” Combustor

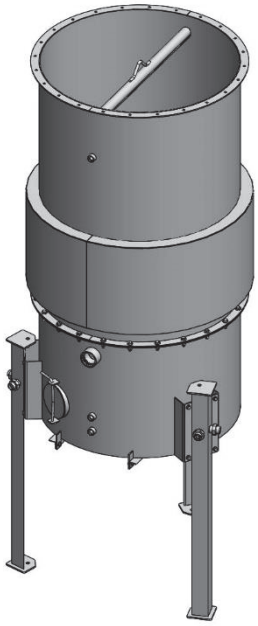


HEIGHT: 113.00”

WEIGHT: 980 LBS. w/ internals & rain cap

DIAMETER: 34.125” with grate. 37.86” max with legs.

2.3 | 48” Combustor

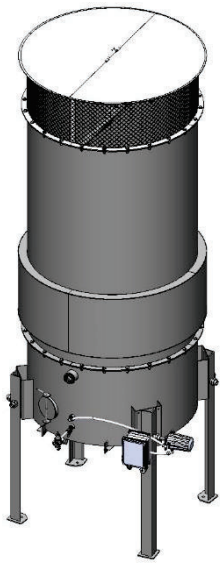


HEIGHT: 139.38”

WEIGHT: 1500 LBS. w/ internals & rain cap

DIAMETER: 54” with grate. 63.61” max with legs.

2.4 | 60” Combustor

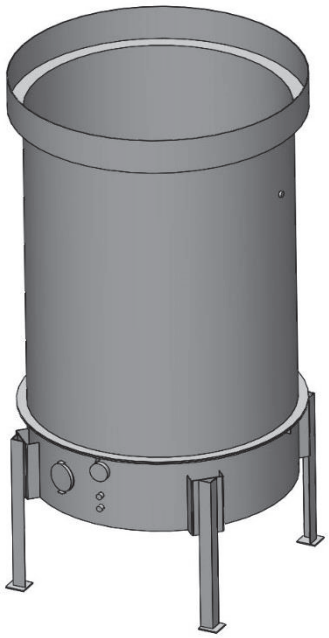


HEIGHT: 161”

WEIGHT: 1000 LBS.

DIAMETER: 64” with grate. 76.25” max with legs.

2.5 | 80” Combustor



HEIGHT: 161”

WEIGHT: 1200 LBS.

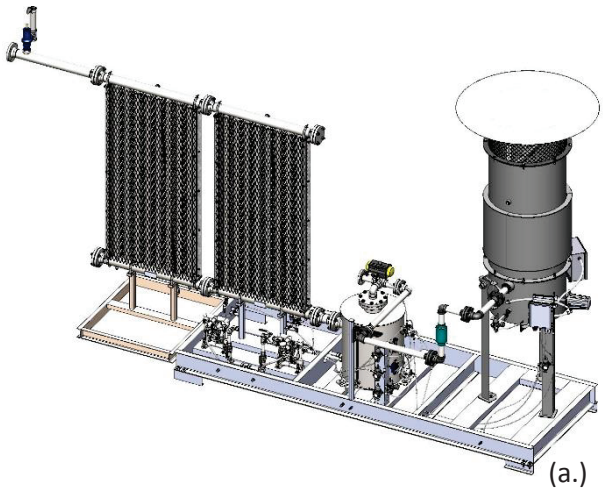
DIAMETER: 80” 98” max with legs.

3 | CONFIGURATIONS AND ACCESSORIES

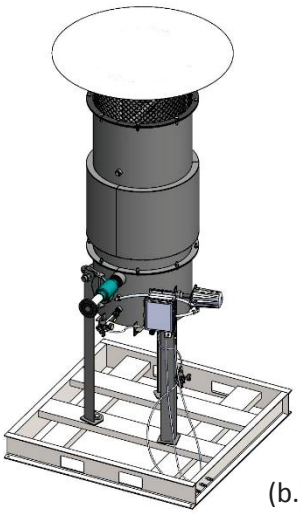
SpiralX combustors are made to suit many environments and regulations within the industry. Here is a list of different designs SpiralX offers.

3.1 | Skid Options

Spatial restrictions can sometimes limit the required footprint of the BTEX system, so SpiralX offers combustor designs that can be attached to or separate from the condenser system.



(a.)

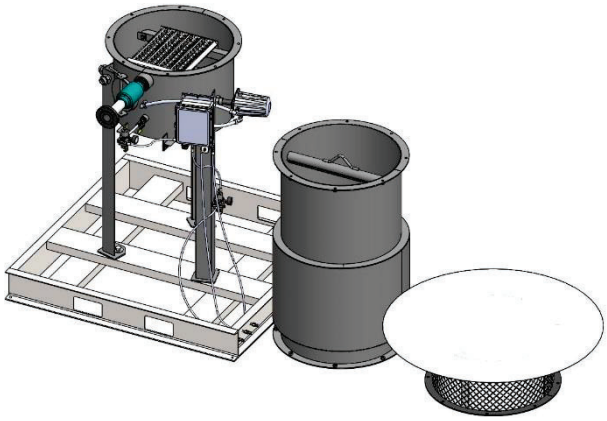


(b.)

Example of combustor attached to condenser skid (a.) and a stand-alone combustor skid that can be set close by on site (b.).

Modular configuration:

Our multi-piece design for our combustors offers several advantages both in house and on site.

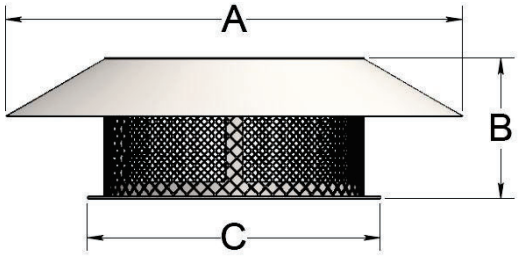


- Smaller, multiple pieces are easier to handle during fabrication for faster production times.
- Separating the body at the burner grid level allows for easier assembly/maintenance of the burner grid and pilot arm.
- Combustors can now ship upright without a permit regardless of body size to save on shipping costs.
- Easier replacement of pieces in the field instead of complete unit replacement in the event of combustor damage.

3.2 | Rain/Snow Cap

The rain cap can be attached to the top ring bracket to protect the pilot flame from being extinguished during rainstorms. In the colder regions, the cap can prevent snow from filling up the combustor which can make initial pilot ignition very difficult and time consuming.

Plain Carbon Steel

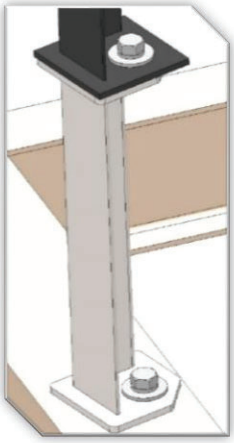


	30”	***48”***
A	53”	69.75”
B	16.3”	16.3”
C	34”	52”
Weight	66 lbs.	107 lbs.

3.3 | Body Extension

SpiralX offers an extended 120” middle section to the combustor for sites that have safety regulations requiring destroyed gases to be vented at higher altitudes. The tops of these extensions have top ring brackets as well in case a rain cap is also needed.

3.4 | Leg Extension



Leg extensions can raise the combustor exhaust similar to a body extension by lifting the entire combustor, but only to an additional height of 20.75”. The main function of the leg extensions is to make the combustor inlet higher than the condenser outlet. This prevents condensate from entering the combustor which can be hazardous.

3.5 | Standard Accessories

3.5.1 – Profire™ BMS

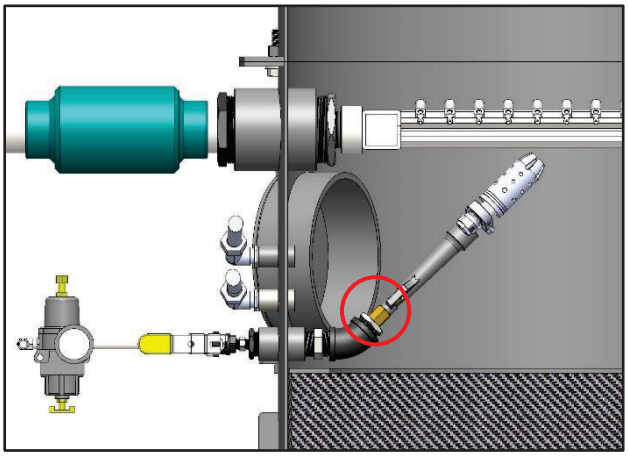
All SpiralX combustors are fitted with Profire™ Burner Management Systems (BMS). The 2100 model offers advanced pilot monitoring with automatic reignition upon spark detection and self-regulating valve automation based on combustor temperature. All monitored data can optionally be communicated to a central location in real time and remotely controlled via the SCADA and Modbus RS-485 add-ons. This on-board data logging feature can record pilot status and other key operating parameters, allowing for ≤ 98% destruction efficiency to be claimed, based on the **Texas Air Quality Act (2015)**.

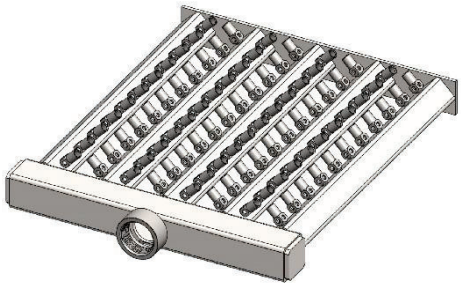
For simpler systems that only require flame detection and ignition, a more cost-effective Flare Ignition System (1300F model) is available, designed solely for automatic ignition of flare stacks.

These systems are rated for Class 1, Div. II, but can be wired remotely to the combustor for sites with Div. I environments. Hook ups can be made with stainless steel tubing or JIC hosing.

3.5.2 – Profire Pilot & Gas Consumption

Based on an orifice diameter of #60 for the Profire pilot arm and an inlet supply pressure of 5-7 psi, the combustor fuel gas consumption rate can be calculated at 15-17 scfh.





3.5.3 – Stainless Steel Burner Grid

SpiralX burner grids are manufactured in-house with stainless steel for corrosion resistance and durability. A single coupling housing facilitates gas supply hook-up as well.

3.6 | Body Insulation

Due to the increased heat output of the larger combustor bodies, all 60” combustors and larger are fitted with 2-inch ceramic fiber insulation rated for 2300°F. Recommended operating temperature is 2150°F. The insulation spans the entire lower section of the combustor body so the insulation does not interfere with installation of the top body.

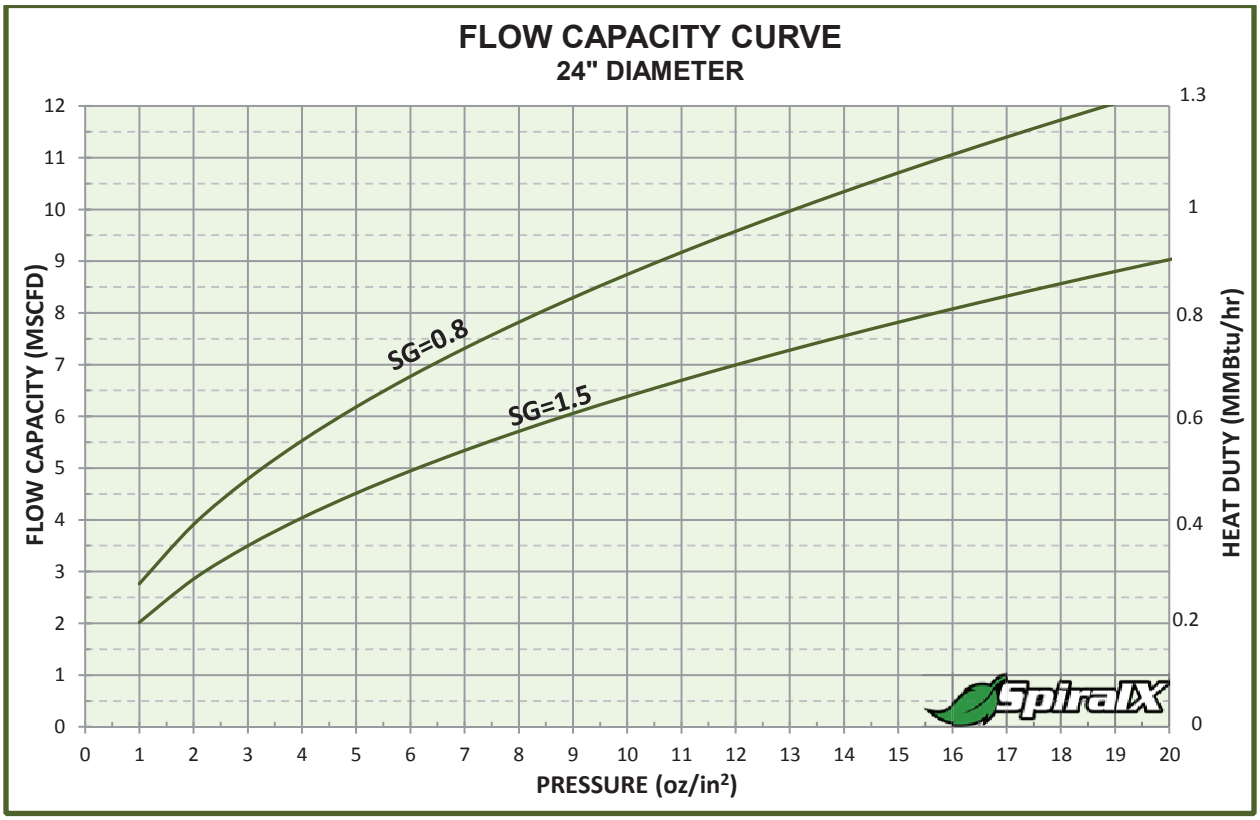
4 | APPLICATION

SpiralX combustors are used for a variety of functions within the oil & gas industry. If you are interested in a SpiralX combustor for the following applications, please request the relevant manuals for more information on other units we offer to handle your BTEX and other volatile organic compounds (V.O.C.s):

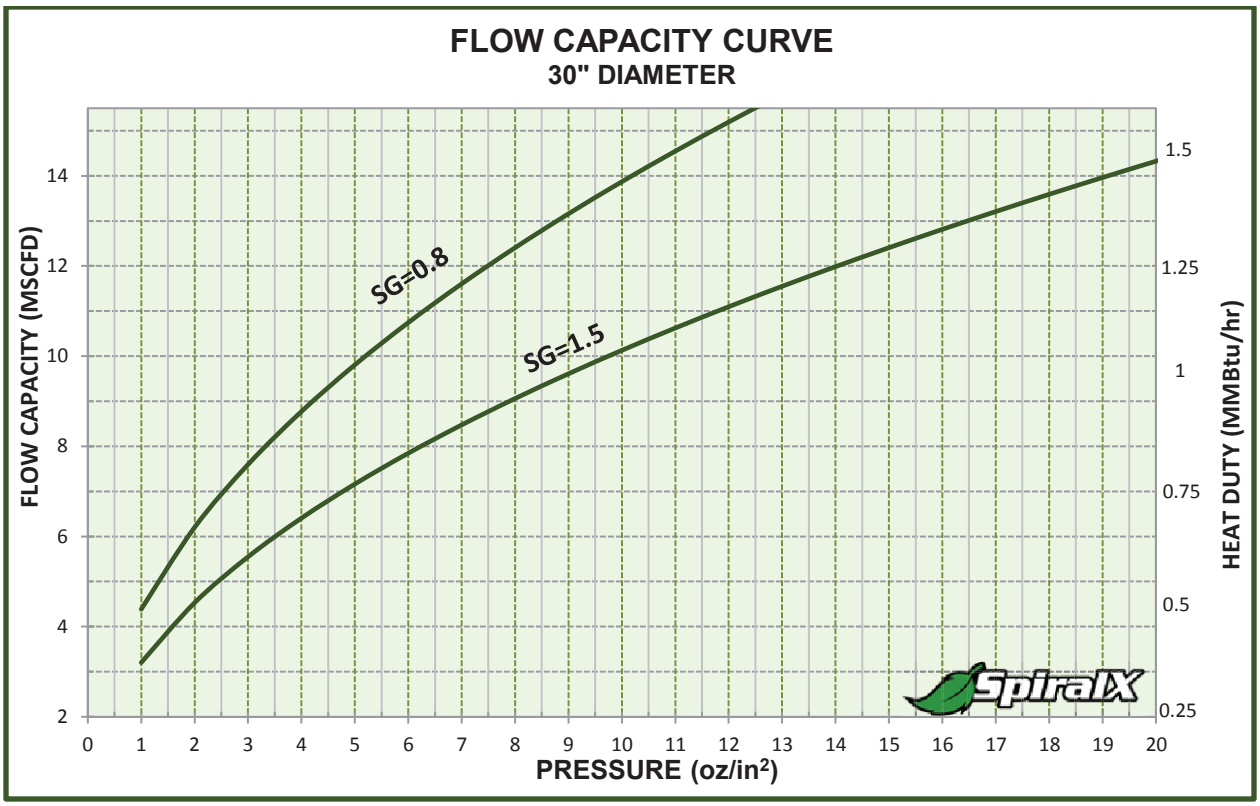
- Flash Gas Management
- Tank Batteries
- BTEX Removal and Destruction – Temperate Weather Applications
- BTEX Removal and Destruction – Arctic applications

5 | PERFORMANCE

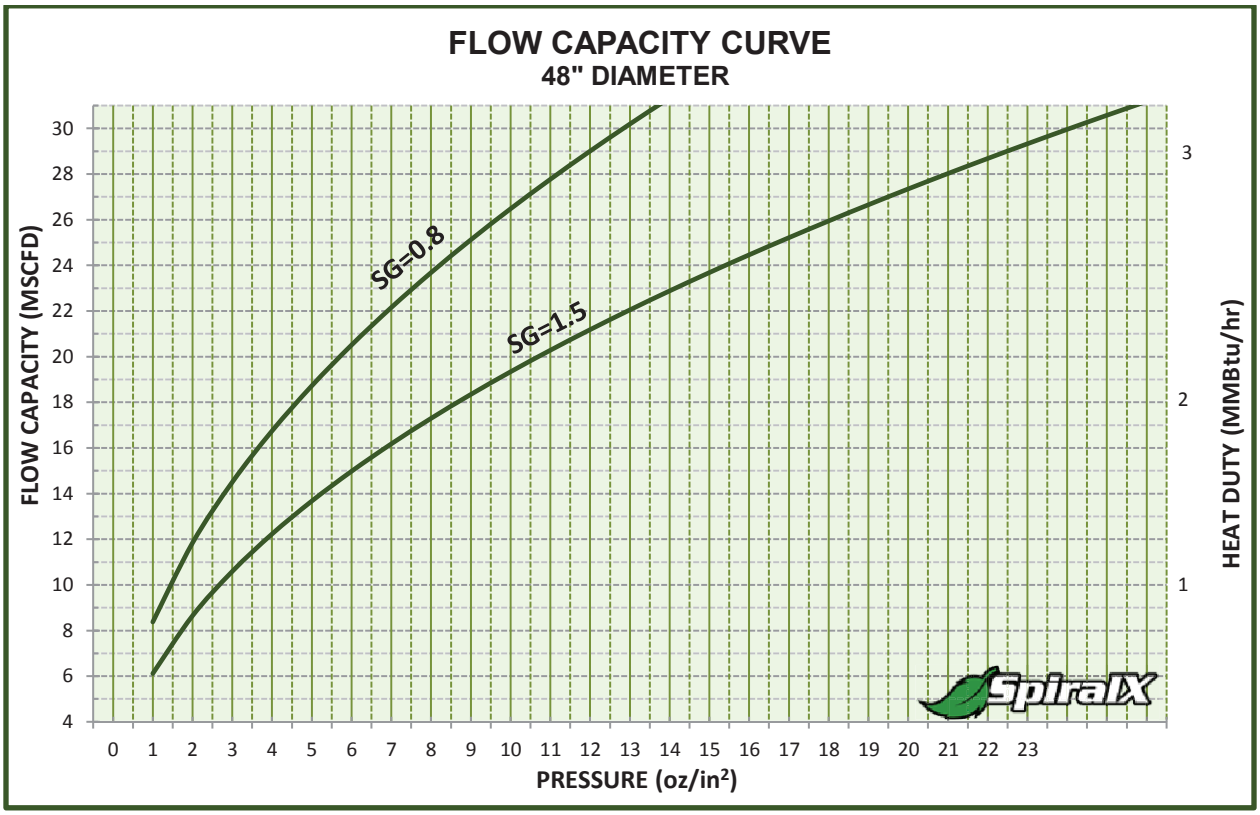
Capacity based on a specific gravity of 0.8 for flash gas applications and 1.5 for typical BTEX streams. Fuel gas



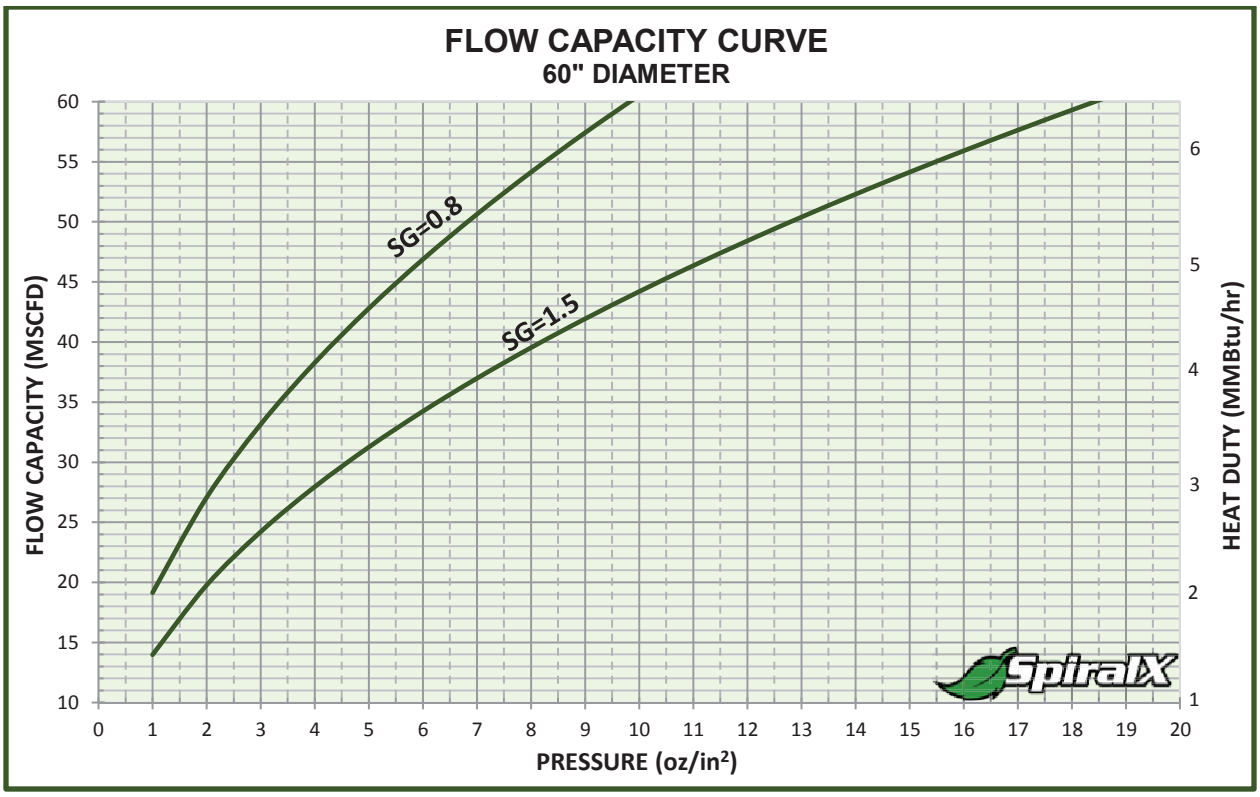
Flow capacity curve of BTEX for 24” diameter combustor as a function of pressure.



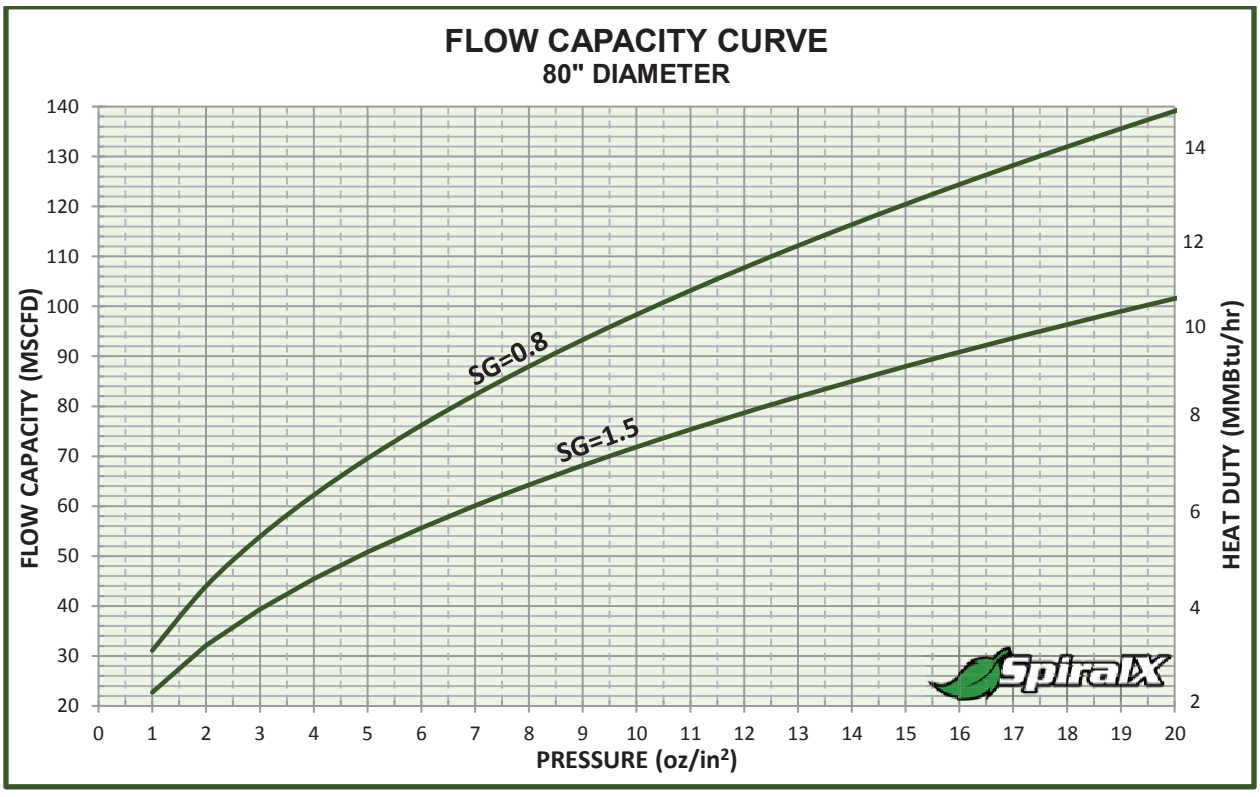
Flow capacity curve of BTEX for 30” diameter combustor as a function of pressure.



Flow capacity curve of BTEX for 48” diameter combustor as a function of pressure.



Flow capacity curve of BTEX for 60” diameter combustor as a function of pressure.



Flow capacity curve of BTEX for 80” diameter combustor as a function of pressure.

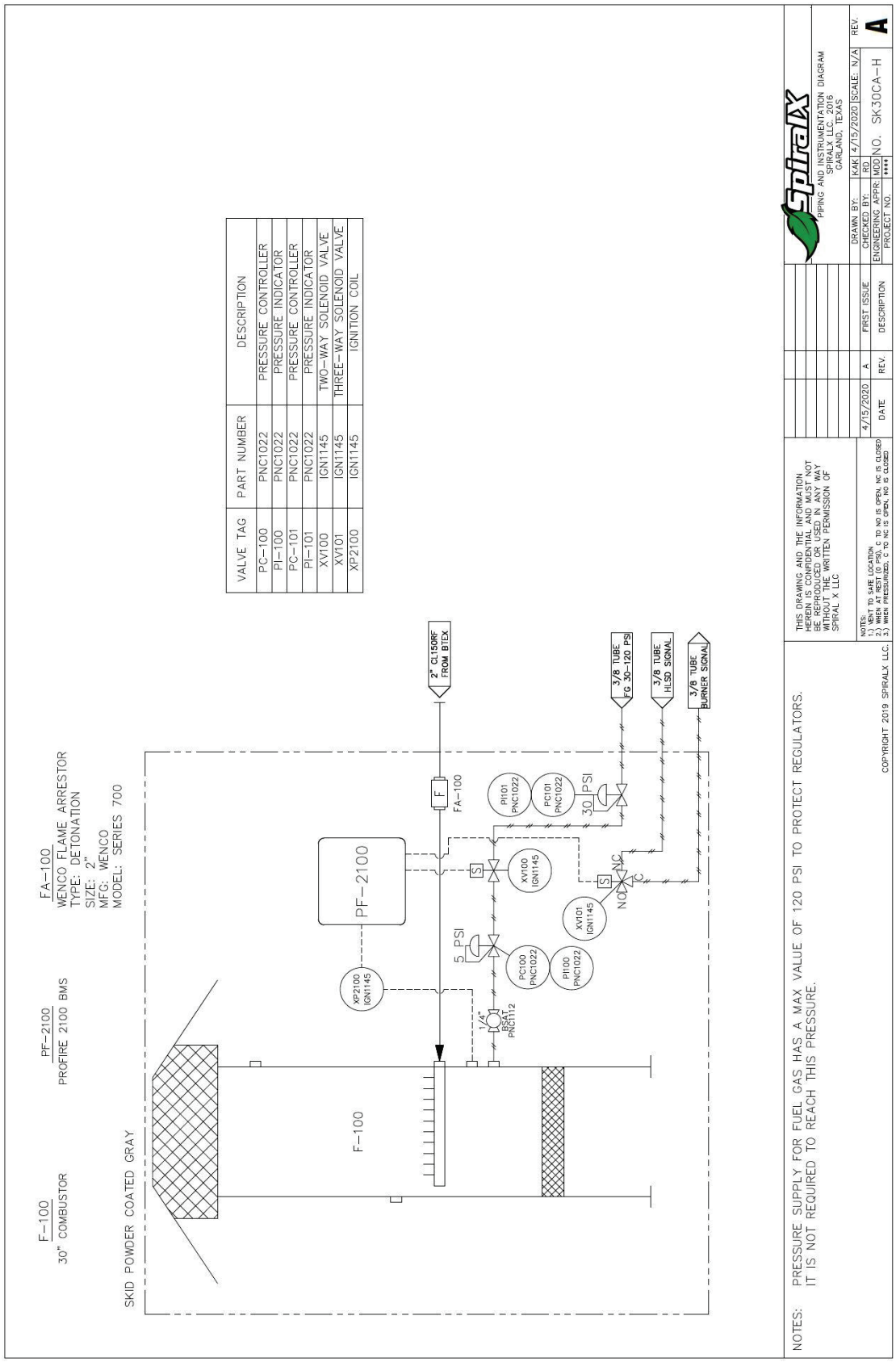
6 | DIAGRAMS & DRAWINGS

The following diagrams are typical for stand-alone combustors only. The dimensions and layouts of combustors on-skid with condenser systems can vary based on system needs and series model.

6.1 | Piping and Instrumentation Diagram (P&ID)

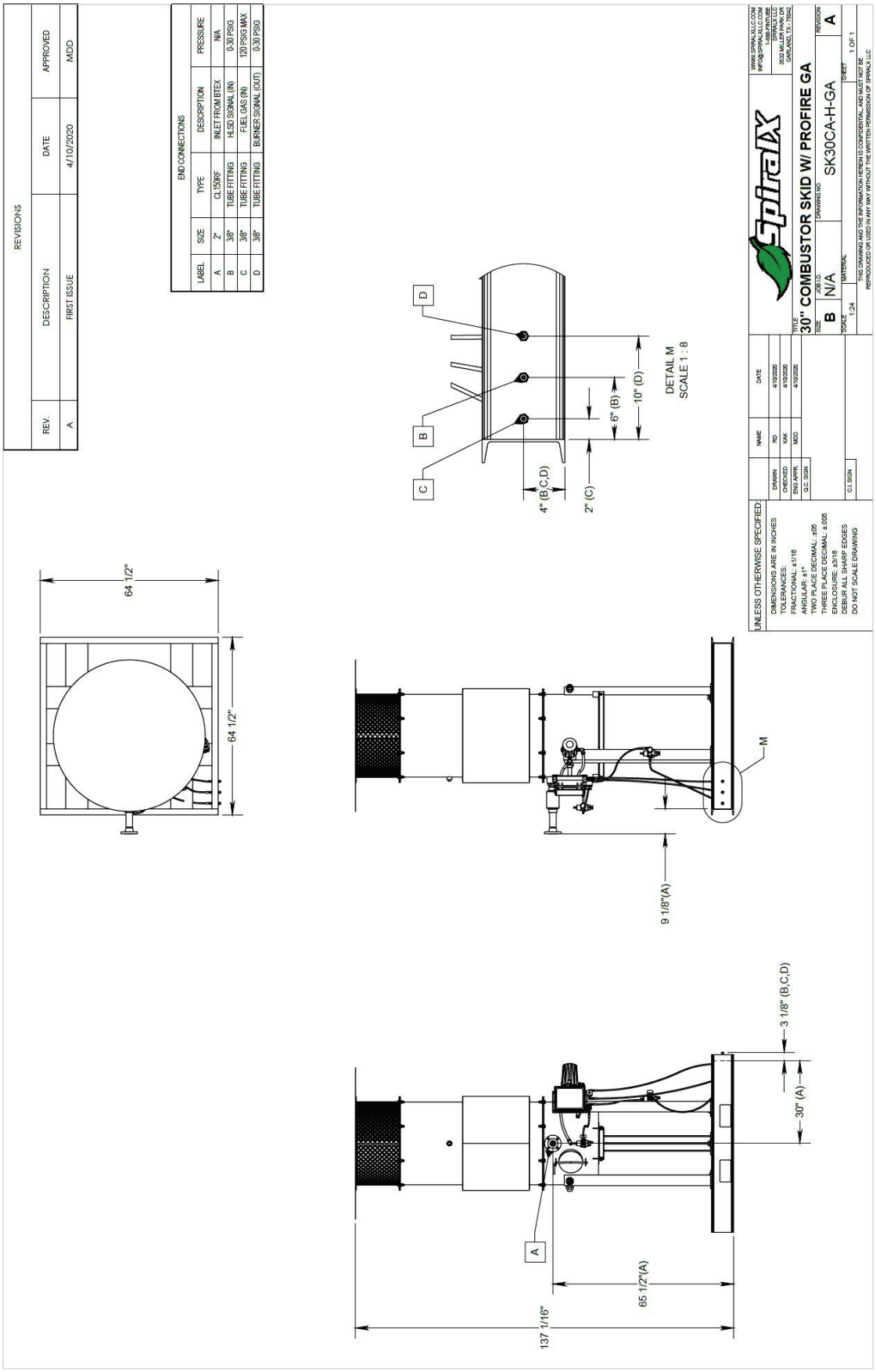
For standalone skid

P&ID for 30” combustor shown. 48”, 60” and 80” combustor will be similar.

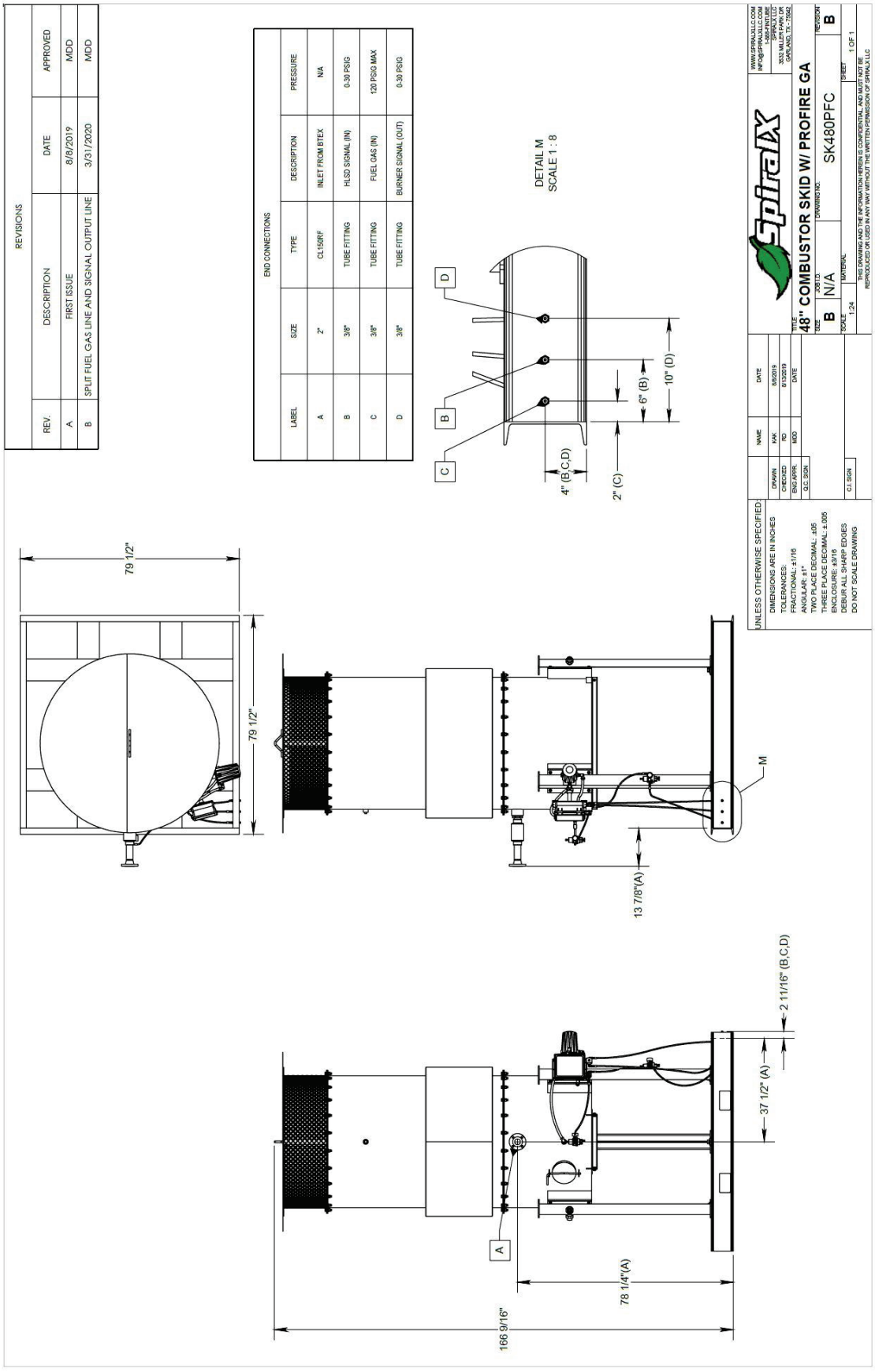


6.2 | General Arrangement of Units

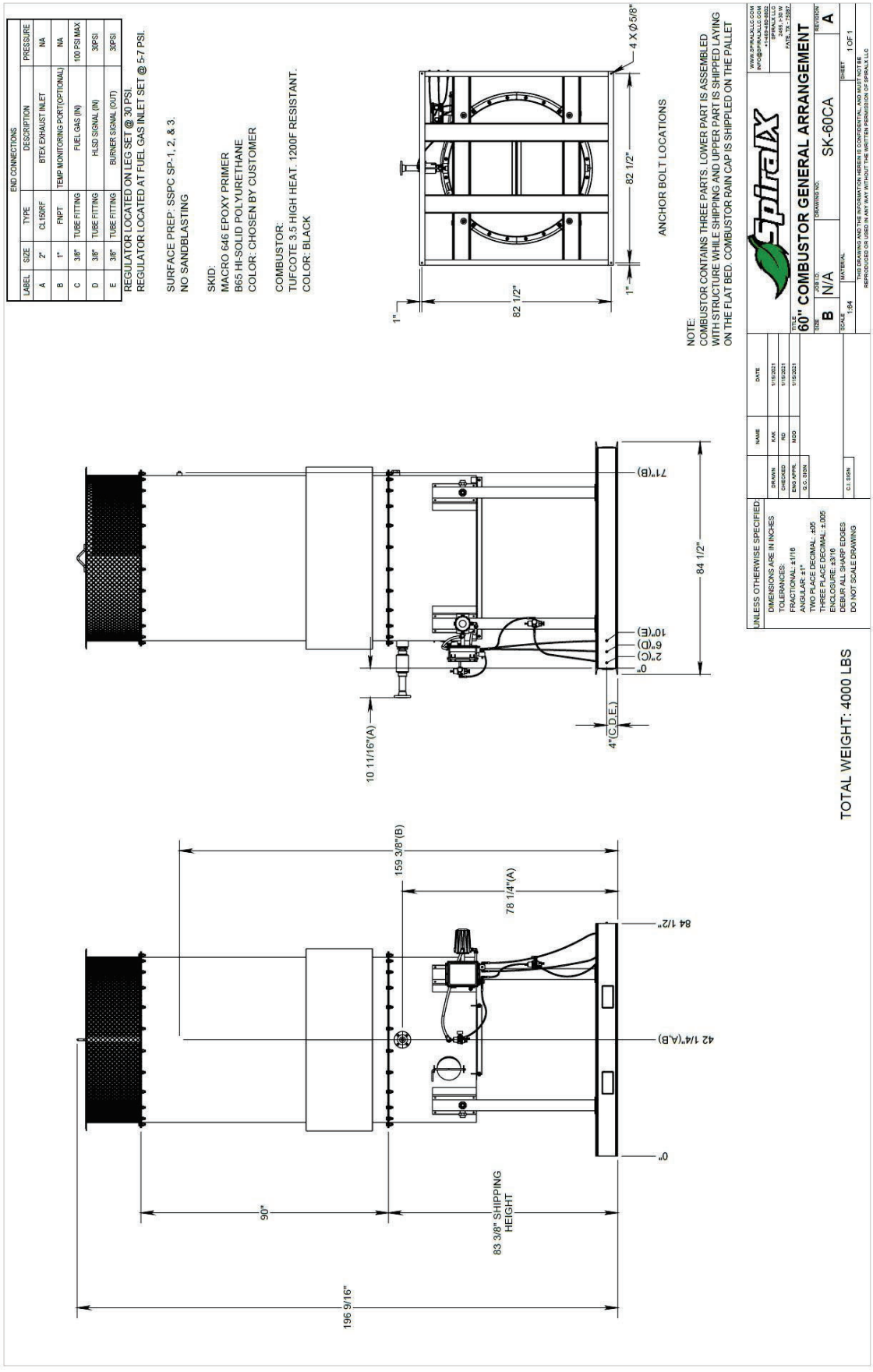
For stand-alone 30” combustor skid.



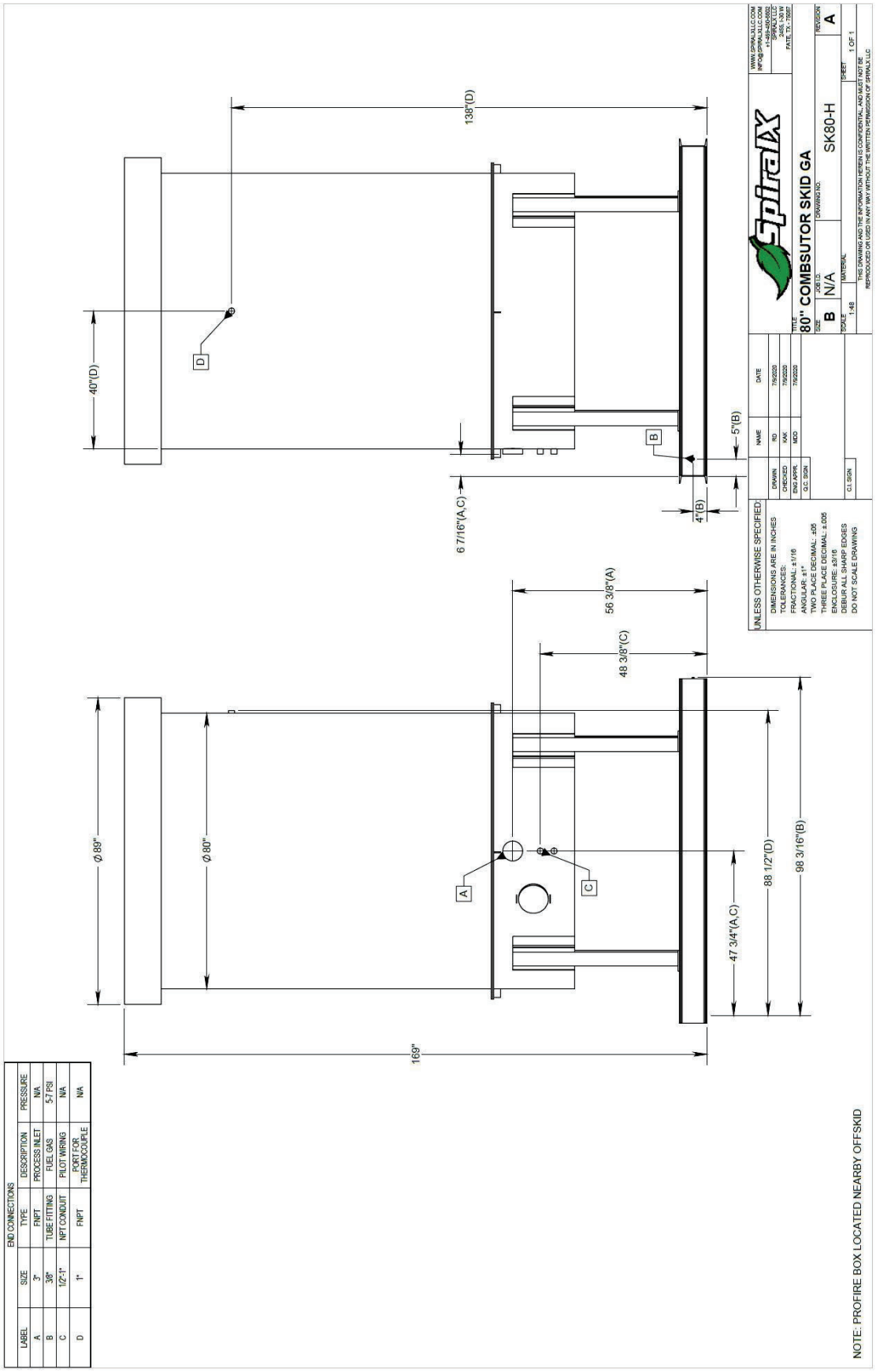
For stand-alone skid. 48” combustor.



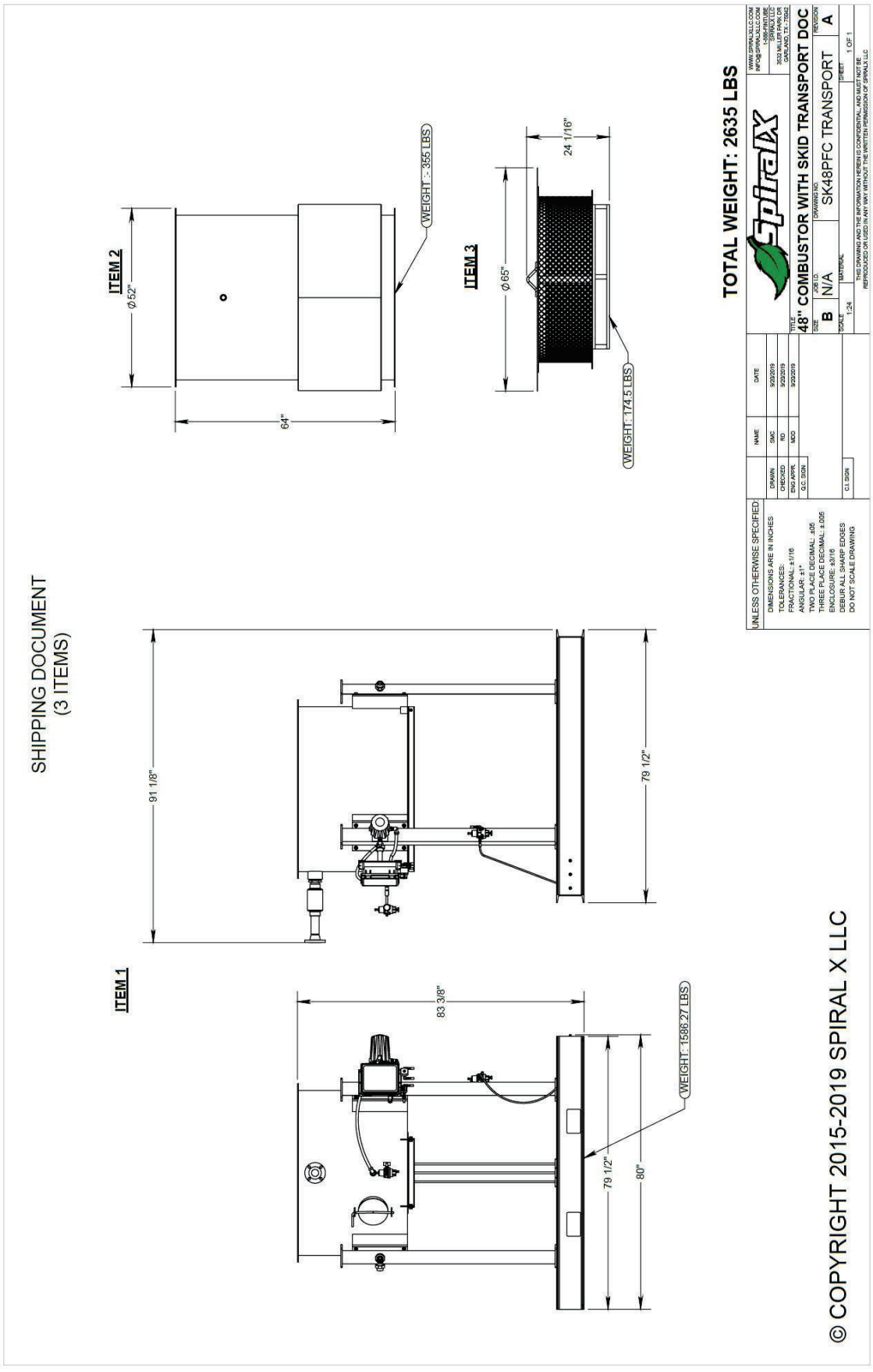
60” combustor.



80” combustor



6.3 | Typical Stand-Alone Combustor Shipping Document.



7 | CERTIFICATE OF COMPLIANCE

Certificate of Compliance
Title 40 of the Code of Federal Regulations

SpiralX LLC certifies the following items:

24" ENCLOSED COMBUSTOR, SPIRALX LLC P/N: 24-CV
30" ENCLOSED COMBUSTOR, SPIRALX LLC P/N: 30-CV
48" ENCLOSED COMBUSTOR, SPIRALX LLC P/N: 48-CV
60" ENCLOSED COMBUSTOR, SPIRALX LLC P/N: 60-CV
80" ENCLOSED COMBUSTOR, SPIRALX LLC P/N: 80-CV

are designed for the destruction of volatile organic compounds (VOCs) in compliance with regulations governing upstream oil and gas facilities (40 CFR 60, Subpart OOOOa) and gas dehydration facilities (40 CFR 63, Subparts HH and HHH). The reduction in the mass content of volatile organic compounds is a minimum of 95% as prescribed in 40 CFR 60.5412a(d)(iv). ≤ 98% claimed for VOCs and H_2S with continuously monitored pilot flame. ≤ 99% claimed for compounds containing only carbon, hydrogen, and oxygen with no more than three carbon atoms and a continuously monitored pilot flame.

Date : FEBRUARY 26, 2019

Bryan C. Holland
President of SpiralX LLC

www.spiralxllc.com
Manufacturing Facility: 2455 E I-30
Fate, TX 75087

APPENDIX A

Table 1: Flare Requirements

Acceptable Control Efficiency	Requirements

destruction efficiencies of:
 	
≤ 98% for VOCs and H_2S, and
 	
≤ 99% for compounds containing only carbon, hydrogen, and oxygen with no more than three carbon atoms
	The flare must:
	
	• meet 40 CFR §60.18 requirements for minimum heating value of waste gas and maximum flare tip velocity
	• have supplemental fuel gas added to any flared streams if needed to ensure gases are sufficiently combustible
	• be fueled by sweet gas or liquid petroleum gas except where only field gas is available and it is not sweetened at the site
	• be designed for and operated with no visible emissions, except for periods not to exceed a total of five minutes during any two consecutive hours (acid gas flares which must comply with opacity limits and records of 30 TAC §111.111(a)(4) are exempt from this)
	• be lit at all times when gas streams are present by having a continuous pilot flame or an automatic ignition system
	  • if a continuous pilot is utilized, the presence of a flame must be continuously monitored with a thermocouple or other equivalent device (such as an infrared monitor) as specified in 40 CFR §60.18
	  • if an automatic ignition system is utilized, it must ensure ignition when waste gas is present
	Notes:
	
	• the time, date, and duration of any loss of flare pilot flame, or auto-ignition must be recorded
	• monitors must be accurate to and calibrated at a frequency in accordance with manufacturer specifications
	• a temporary, portable, or backup flare used less than 480 hours per year is not required to be monitored
	• emergency/upset emissions are not authorized; the only emissions authorized from an emergency flare are the pilot emissions; the pilot is subject to monitoring as described above

Engineering Proposal

Project Name:	ZAP for CDM Songbird RFQ# 992199
Project Location:	New Mexico
Prepared For:	Tiffany Wilhite 303-656-4830 wilhitet@zapecs.com
Sales Contact:	Crystal Grubbs 720-431-9991 crystal@missionflares.com
Prepared by:	Michael Bryant 512-599-8038 Michael@missionflares.com
Quote Number:	22292r1
Date:	1/17/2023

Table of Contents

1. INTRODUCTION

Mission Flares & Combustion is pleased to offer an MVF-4 Variable Orifice Sonic Flare Package to meet the specified needs of your application. Manufactured in the United States, this solution has been proven successful at controlling harmful hydrocarbon and VOC emissions, reducing the negative impact on the environment.

Benefits of using Mission's flaring technology:

- Smokeless combustion
- >98% destruction efficiency
- Low radiation profile

2. COMMERCIAL SUMMARY

2.1. SCOPE OF SUPPLY

Item	Qty	Description	Price
		MVF 4 x 35'	
1	1	MVF 4 Variable flow flare tip • 2' long x 4" nominal diameter • Spring actuated variable area design • Flare tip material ○ 310SS	
2	1	Self-supported flare riser • 35' total flare height • 12" nominal diameter main riser • 4" x 150# RF inlet flange • Material: A-106B or equivalent • Paint per Mission Flares standard	
3	1	Pilot Assembly • Primary ignition system, high energy sparking • Thermocouple for flame detection	
4	1	Pilot Gas Valve Train • Ball Valve • Y-Strainer • Pressure Regulator • Pressure Gauge	
5	1	Ignition System • Mounted remote from the flare • Manual and Automatic ignition mode • NEMA 4 enclosure • Automatic pilot re-lighting upon pilot failure • Includes self-supporting control stand	
6	1	Pilot retractability package for 35' flare • Allows pilot to be maintained from grade level • Track assembly, manual winch, cable, and pulley assembly	

7	1	Documentation • Operating and Maintenance Manual (1 hard copy and an electronic copy) • Piping and Instrumentation Drawing • General Arrangement Drawing	
		Total for items 1-7:	[redacted]

2.2. OPTIONAL ITEMS

		OPTIONAL ITEMS	
7	1	Solar Package 12 VDC • 4 Days Autonomous, 3-watt continuous • 12 Volt solar panel • Charge controller 12V 8 amp • One (1) 12V battery • Battery enclosure with self-supporting stand and solar panel mounting	[redacted]
8	1	4" Flame Arrestor • Carbon Steel Body • Stainless steel internals • RF 150# Connections	[redacted]

2.3. VALIDITY

The prices listed in this quotation are valid for fifteen (15) days.
Due to the current volatility in the steel market prices are subject to change after 15 days.

2.4. DELIVERY

Estimated Delivery Time: 4 to 6 weeks (Client Approval Waived)

*The quoted delivery time is based on our current production schedule. An updated delivery schedule will be provided at time of order.

2.5. SHIPPING TERMS

FOB-Destination

2.6. FREIGHT

Prepaid and added to our invoice at cost + 15%. Estimated to be [redacted]

2.7. PACKING AND SHIPPING PREPARATION

Inland freight packing for technology items only and does not include stacks, vessels, skids, ladders and platforms or utility piping.

2.8. TERMS OF PAYMENT

Progress payments as per the following*:

50% Upon receipt of order
50% Upon notification of readiness for shipment

*Payment terms are only valid as long as client is approved for credit by Mission Flares and Combustion's financial institution. Three credit references and financial statements may be required for this purpose.

2.9. COMMISSIONING

Hourly Labor Rate*:	[redacted]
Daily Travel Rate:	[redacted]
Overtime Rate:	[redacted]
Mileage Rate:	[redacted]
Standard Workday**:	8 – Hour Day

**Standard workday starts at 8 AM and ends at 5 PM with one hour for lunch.

2.10. SPARE PARTS

Part #	Description	For Start UP & Commissioning	For 2 years operation	Price each
1000250	Ignition module	0	1	[redacted]
1000375	Ignition Rod	1	2	[redacted]
1000125	Thermocouple, Type K	0	1	[redacted]
1000300	Pilot Inspirator	0	1	[redacted]
1000185	Pilot Orifice	0	1	[redacted]

3. TECHNICAL SUMMARY

3.1. DESIGN CONDITIONS

	A	B
Maximum inlet flow rate HP:	2.84 MMSFD	0.11 MMSCFD
Inlet Temperature:	49° F	160° F
Design Inlet Pressure:	5 psig	4 oz/in^2
Smokeless flow rate:	0 – 100% of Maximum flow, meets Ringelmann 1	0 – 100% of Maximum flow, meets Ringelmann 1
Destruction Rate Efficiency:	>98%	>98%

3.2. SITE CONDITIONS

Ambient Temperature:	-20 to 90 °F
Wind Speed:	120 MPH
Seismic Classification:	Site Class C, Design Category A
Elevation (above mean sea level):	3,350 ft

3.3. UTILITIES

Pilot Gas:	58,500 BTU/hr required per pilot If natural gas is used: 65 SCFH @ 8-10 psig (per pilot)
Electrical:	12 VDC (BMS)
Purge Gas:	6 scfh

3.4. DESIGN CLARIFICATIONS

No clarifications.

3.5. DOCUMENTATION

Mission Flares and Combustion will provide the following documents along with the equipment on this project:

- Documents as agreed on project VDR.

3.6. QUALITY / NON-DESTRUCTIVE TESTING

- Visual Inspection
- Dimensional check
- Dry film thickness: painted carbon steel components only

4. EXCLUSION LIST

This proposal is an offer in accordance with the below exclusions. These items can be included in our scope of work upon client request, subject to price and delivery impact.

4.1. TECHNICAL EXCLUSIONS

- Civil and foundation design for any equipment including dead men, anchor bolts or nuts, design of anchor bolt length or projection as this is part of civil engineering foundation design.
- This design is exclusive of all external loadings due to upstream piping. Wind, seismic and temperature loadings have been considered. Allowable nozzle loads other than those published by API-537 are not considered.
- Bolt kits (stud bolts, nuts, gaskets, isolation kits, etc.) at battery limit flanged connections are not included.
- Supply to customer of shop details, fabrication drawings or proprietary calculations.
- Installation of equipment including supply of cranes and/or personnel. General installation instructions and assembly drawings are provided. These instructions are meant to provide guidance and general steps to complete the installation. These procedures are not intended to be a substitute for experienced installation personnel. Field assembly and erection of the flare/combustor is outside the scope of work to be provide by MISSION FLARES AND COMBUSTION and is the sole responsibility of others. It is understood that the field contractor retained for this purpose is familiar with the assembly and erection of tall towers.

- No interconnecting piping, wire or conduit is included between proposed equipment, unless otherwise indicated in the scope of work section of this proposal.
- The ignition system, control panel, pilots and related valve trains are MISSION FLARES AND COMBUSTION standard package. As such, they are designed and/or manufactured according to our standards and procedures using our standard components.
- Dispersion calculations, nozzle load calculations, finite element analysis or other stress analysis, apart from structural calculations of the stack are not included unless specifically mentioned in the scope of supply section of this proposal.
- NACE compliant carbon steel is not included unless specifically mentioned in the scope of supply section of this proposal.
- If NACE compliant carbon steel is proposed, materials which exceed the requirements of NACE MR-0175 are not considered.
- Passivation or pickling of stainless-steel materials or post weld heat treatment or associated charts unless specifically mentioned in the scope of supply section of this proposal.
- Any testing or procedures not marked as included in the quality / testing section of this proposal is not included.
- MISSION FLARES AND COMBUSTION standard weld procedures apply to our equipment unless otherwise stated in this proposal.
- Hydrostatic testing of any piece of equipment other than stamped ASME pressures vessels is not included unless specifically indicated in this proposal.
- Painting for coating of stainless steel, internal surfaces of equipment or galvanized equipment.
- External insulation, insulation clips or heat tracing of any kind. Refectory included for enclosed combustion equipment will be specifically indicated in the scope of supply section of this proposal.
- Armored cable or cable tray of any kind is not included. Standard wire and conduit within the MISSION FLARES AND COMBUSTION battery limits is included.
- Material certification as per BSEN 10204, 3.2 are not included.

4.2. COMMERCIAL EXLUSIONS

- Whereas regards statements in client specifications or purchase orders concerning specification order of precedence, please be advised that MISSION FLARES AND COMBUSTION's proposal including integral exclusion list, precedes and precludes all other documents or agreements whether written or verbal.
- Freight cost and logistics will be offered to our customers as an optional line item or as part of the base price, but not at cost as the phrase "prepay and add" is sometimes interpreted.
- MISSION FLARES AND COMBUSTION strictly prohibits the use or sale of our equipment in countries sanctioned by the United States Government.
- Third party inspection is not included.

- All documents will be supplied in PDF format only.
- All documentation will be prepared in the English language. Translation is available at an additional cost; however, only text generated by MISSION FLARES AND COMBUSTION will be translated. Drawings, cut sheets, stat sheets and/or standard documents will be provided in English.
- No MISSION FLARES AND COMBUSTION presence at meetings including, but not limited to kick-off meetings, HAZOP meetings, drawing review meetings and inspection / certification meetings are included unless explicitly stated in the scope of supply section of this proposal.
- Spare parts when quoted do not include cross sectional drawings, export packing or freight.
- There are no bank guarantees, performance bonds or warranty bonds included in our scope of supply or price. Cost for these requirements will be added to our base price quote as options, if required. All bond and/or bank guarantee formats, if applicable, must be agreed to in writing by MISSION FLARES AND COMBUSTION.
- Storage of equipment after notification of readiness for shipment unless negotiated.

5. WARRANTY

If within 18 months after the data of notice of availability for shipment, or one year after start up, whichever occurs first, any Goods furnished by Seller prove to be defective in material or workmanship, and Seller is so notified in writing, upon examination by Seller, Seller will, at Seller's discretion, either repair the Goods for supply identical or substantially similar replacement Goods, F.O.B. manufacturing facility. Any repaired or replacement Goods will be warranted against defects in material or workmanship for the unexpired portion of the warranty applicable to the particular Goods. Goods not manufactured by Seller are subject only to warranties of Seller's vendors and Seller hereby assigns to Buyer all rights in such vendor warranties, provided, however. Seller shall furnish to the Buyer reasonable assistance in enforcing such rights. Seller will not be responsible for costs of making access for, or of export/import, shipment, removal, or installation of any items needed to repair or replace any defective Goods. Inexpensive items requiring repairs or replacement and routine maintenance-related or consumable items shall be outside the scope of these limited warranties. With regard to warranty related remedial work, the Seller will not be responsible for materials or workmanship of others or shipment, labor and other related expenses for any work performed by other in the repair or replacement of defective Goods, without Seller's prior written consent. Seller's performance guarantees, if any, shall be deemed to be met by a satisfactory demonstration of the performance guarantees during a performance test, which shall be the responsibility of the Buyer, pursuant to mutually agreed upon test procedures. If the performance test is not completed within 45 days after notice of availability for shipment, the performance test shall be deemed to be satisfactorily performed for any and all purposes.

6. TERMS AND CONDITIONS

This proposal is based upon Mission Flares and Combustion's "Standard Terms and Conditions of Sale." We have attached a copy for your reference.

7. AUTHORIZATION TO PROCEED

By signing this document, you are agreeing and accepting the order as stated in this proposal (as described above), as well as the terms, deliverables, and conditions as stated.

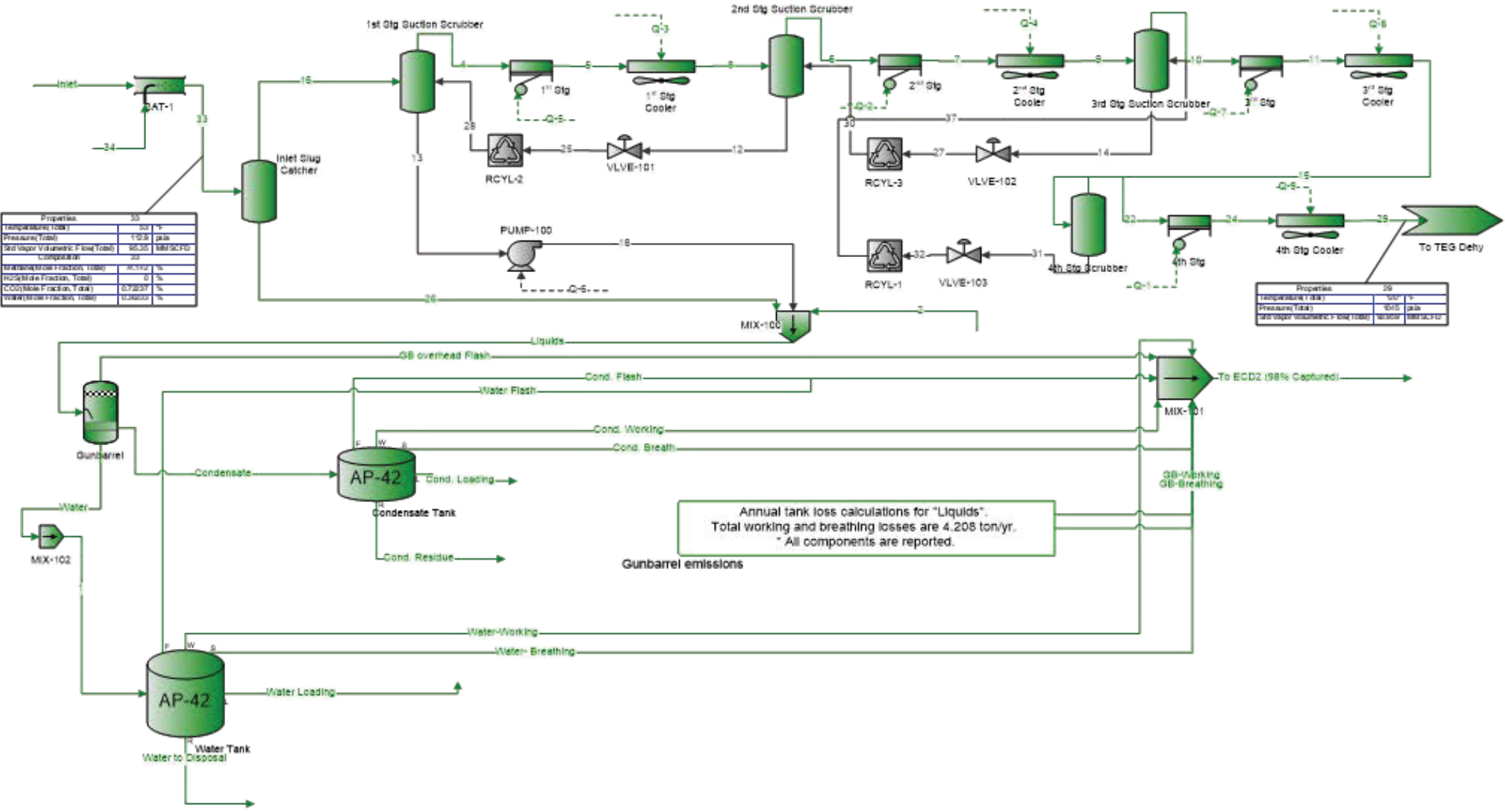
Signature:_____ Date of Authorization:_____

Print Name:_____ **Print Title:** _____

PERTINENT PROJECT INFORMATION

Proposal No.	22292
Well Name / Shipping Address	
Billing/Invoice Address	
PO# / AFE#	
Billing Contact	
Main Point of Contact	Name & Title: Phone: Cell: Email:
Main Point of Contact 2	Name & Title: Phone: Cell: Email:

Comments	



Properties	33	
Temperature(Total)	60	F
Pressure(Total)	1109	psia
Std Vapor Volumetric Flow(Total)	95.35	MMSCFD
Composition	33	
Methane(Mole Fraction, Total)	0.742	%
H2S(Mole Fraction, Total)	0	%
CO2(Mole Fraction, Total)	0.7237	%
Water(Mole Fraction, Total)	0.0502	%

Properties	29	
Temperature(Total)	120	F
Pressure(Total)	1015	psia
Std Vapor Volumetric Flow(Total)	90.604	MMSCFD

LABORATORY SERVICES Natural Gas Analysis
www.permianls.com
575.397.3713 2609 W Marland Hobbs NM 88240

Extended Gas Analysis Report

Sample Point Code	Sample Point Name	Sample Point Location
11292G	Vanmar Comp. Station Inlet Gas	Vanmar Comp. Station Inlet Gas

Source Laboratory	Lab File No	Container Identity	Sampler
Laboratory Services	2021038503	0301	D Jett - Spot

District	Area Name	Field Name	Facility Name
USA	USA	USA	New Mexico

Date Sampled	Date Effective	Date Received	Date Reported
Jan 23, 2021 12:00	Jan 23, 2021 12:00	Jan 25, 2021 14:41	Jan 26, 2021

Ambient Temp (°F)	Flow Rate (Mcf)	Analyst	Press PSI @ Temp °F Source Conditions
53.00		TG	42 @

Operator	Lab Source Description
AKM	Devon Energy

Component	Normalized Mol %	Un-Normalized Mol %	GPM
Nitrogen (N2)	1.0880	1.082268	
Carbon Dioxide (CO2)	0.7250	0.720648	
Hydrogen Sulfide (H2S)	0.0000	0	
Methane (C1)	74.4120	74.013114	
Ethane (C2)	12.0190	11.954546	3.2140
Propane (C3)	6.3100	6.275886	1.7380
IsoButane (IC4)	0.8970	0.892306	0.2930
n-Butane (NC4)	2.1730	2.161546	0.6850
IsoPentane (IC5)	0.5480	0.544894	0.2000
n-Pentane (NC5)	0.6100	0.606381	0.2210
Hexanes (C6's)	1.2180	1.215	0.5080
TOTAL	100.0000	99.4666	6.8590

Method(s): Gas C6+ - GPA 2261, Extended Gas - GPA 2286, Calculations - GPA 2172

Analyzer Information

Device Type:	Gas Chromatograph	Device Make:	Agilent
Device Model:	7890B	Last Cal Date:	Jan 6, 2021

Gross Heating Values (Real, BTU/ft³)

14.696 PSI @ 60.00 Â°F	14.73 PSI @ 60.00 Â°F	
Dry	Dry	Saturated
1,332.1	1,340.8	1,318.2

Calculated Total Sample Properties

GPA2145-16 *Calculated at Contract Conditions

Relative Density Real	Relative Density Ideal
0.7883	0.7853

Molecular Weight: 22.7470

C6+ Group Properties

Assumed Composition

C6 - 36.334% C7 - 33.419% C8 - 30.247%

Field H2S: 0 PPM

PROTREND STATUS:
Passed By Validator on Jan 29, 2021

DATA SOURCE:
Imported

PASSED BY VALIDATOR REASON:
First sample taken @ this point, composition looks reasonable

VALIDATOR:
Torrance Galvan

VALIDATOR COMMENTS:
OK

Sample Point Code - Name @ Location

Operator

11292G - Vanmar Comp. Station Inlet Gas - Vanmar Comp. Station Inlet Gas

AKM

Component	Normalized Mol %	Un-Normalized Mol %	GPM
Nitrogen (N2)	1.0880	1.08227	
Carbon Dioxide (CO2)	0.7250	0.720648	
Hydrogen Sulfide (H2S)	0.0000	0	
Methane (C1)	74.4120	74.0131	
Ethane (C2)	12.0190	11.9545	3.2140
Propane (C3)	6.3100	6.27589	1.7380
IsoButane (IC4)	0.8970	0.892306	0.2930
n-Butane (NC4)	2.1730	2.16155	0.6850
IsoPentane (IC5)	0.5480	0.544894	0.2000
n-Pentane (NC5)	0.6100	0.606381	0.2210
Hexanes (C6's)	0.4460	0.443	0.1810
Heptanes (C7's)	0.3590	0.359	0.1430
Octanes (C8's)	0.1740	0.174	0.0810
Nonanes (C9's)	0.0540	0.054	0.0290
Decanes (C10's)	0.0290	0.029	0.0170
Undecanes (C11's)	0.0300	0.03	0.0140
Dodecanes (C12's)	0.0020	0.002	0.0020

BTEX

Component	Normalized Mol %	Un-Normalized Mol %	GPM
Benzene	0.0470	0.047	0.0130
Toluene	0.0460	0.046	0.0150
EthylBenzene	0.0040	0.004	0.0020
M+P Xylene	0.0210	0.021	0.0090
O Xylene	0.0060	0.006	0.0020

October 2000
RG-109 (Draft)

Air Permit Technical Guidance for Chemical Sources:

Flares and Vapor Oxidizers

printed on recycled paper

Air Permits Division

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Waste Stream	Destruction/Removal Efficiency (DRE)		
VOC	98 percent (generic) 99 percent for compounds containing no more than 3 carbons that contain no elements other than carbon and hydrogen in addition to the following compounds: methanol, ethanol, propanol, ethylene oxide and propylene oxide		
H_2S	98 percent		
NH_3	case by case		
CO	case by case		
Air Contaminants	**Emission Factors**		
thermal NO_x	steam-assist:	high Btu	0.0485 lb/MMBtu
		low Btu	0.068 lb/MMBtu
	other:	high Btu	0.138 lb/MMBtu
		low Btu	0.0641 lb/MMBtu
fuel NO_x	NO_x is 0.5 wt percent of inlet NH_3, other fuels case by case		
CO	steam-assist:	high Btu	0.3503 lb/MMBtu
		low Btu	0.3465 lb/MMBtu
	other:	high Btu	0.2755 lb/MMBtu
		low Btu	0.5496 lb/MMBtu
PM	none, required to be smokeless		
SO_2	100 percent S in fuel to SO_2		

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

Section 8

Map(s)

A map such as a 7.5 minute topographic quadrangle showing the exact location of the source. The map shall also include the following:

The UTM or Longitudinal coordinate system on both axes	An indicator showing which direction is north
A minimum radius around the plant of 0.8km (0.5 miles)	Access and haul roads
Topographic features of the area	Facility property boundaries
The name of the map	The area which will be restricted to public access
A graphical scale	

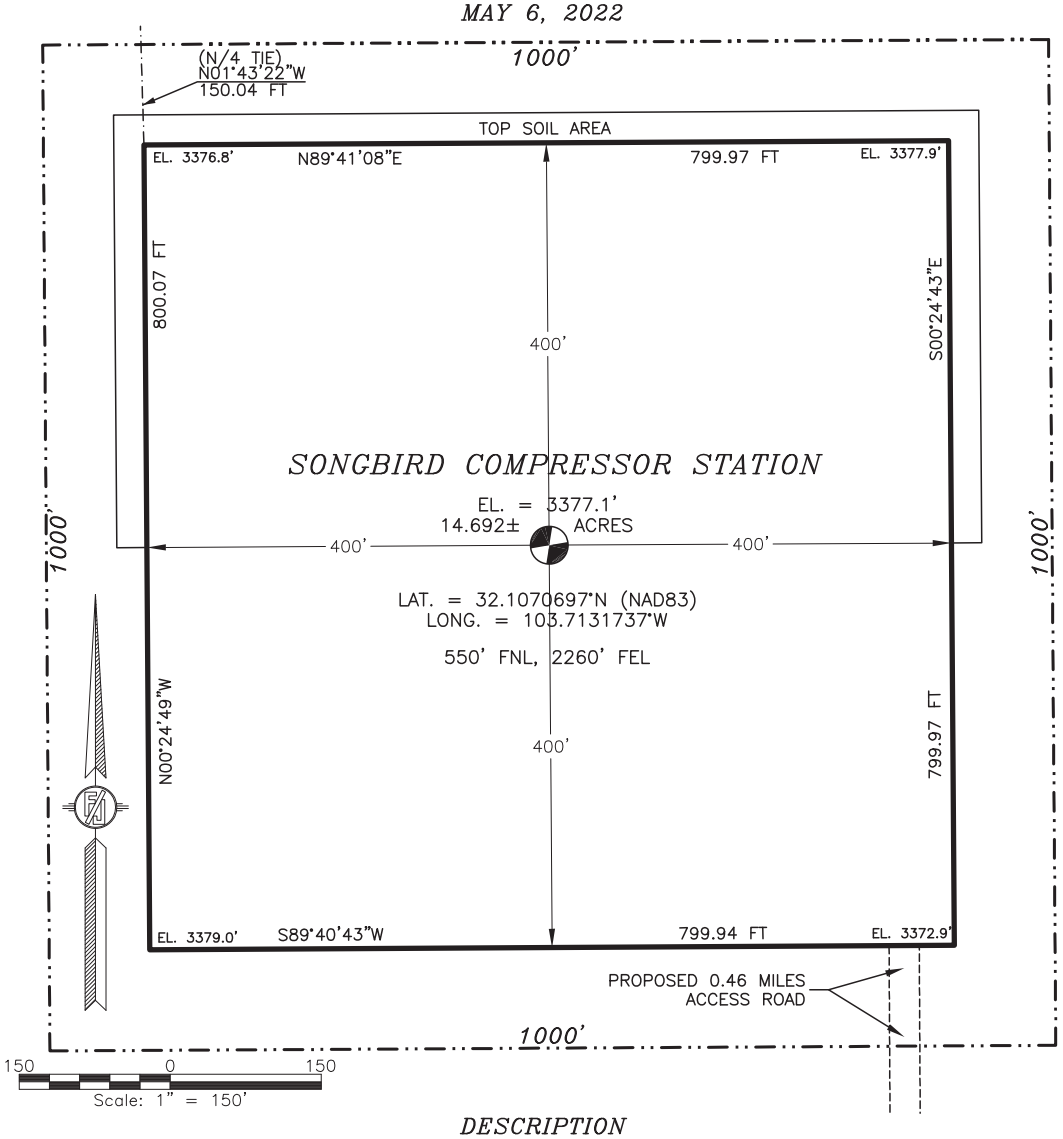
A topographic map is attached.

SONGBIRD COMPRESSOR STATION (AA000549611)

COTTON DRAW MIDSTREAM, LLC

IN THE NW/4 NE/4 OF
SECTION 30, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

MAY 6, 2022



DESCRIPTION

A CERTAIN PIECE OR PARCEL OF LAND AND REAL ESTATE LYING IN BUREAU OF LAND MANAGEMENT LAND IN THE NW/4 NE/4 OF SECTION 30, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.

BEGINNING AT THE NORTHWEST CORNER OF THE PARCEL, WHENCE THE NORTH QUARTER CORNER OF SECTION 30, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS N01°43'22"W, A DISTANCE OF 150.04 FEET;
THENCE N89°41'08"E A DISTANCE OF 799.97 FEET TO THE NORTHEAST CORNER OF THE PARCEL;
THENCE S00°24'43"E A DISTANCE OF 799.97 FEET TO THE SOUTHEAST CORNER OF THE PARCEL;
THENCE S89°40'43"W A DISTANCE OF 799.94 FEET TO THE SOUTHWEST CORNER OF THE PARCEL;
THENCE N00°24'49"W A DISTANCE OF 800.07 FEET TO THE NORTHWEST CORNER OF THE PARCEL, THE POINT OF BEGINNING;
CONTAINING 14.692 ACRES MORE OR LESS.

GENERAL NOTES

1.) THE INTENT OF THIS SURVEY IS TO ACQUIRE A BUSINESS LEASE FOR THE PURPOSE OF BUILDING A COMPRESSOR STATION

2.) BASIS OF BEARING IS NEW MEXICO STATE PLANE EAST ZONE MODIFIED TO THE SURFACE (NAD83), COORDINATES ARE NAD 83, ELEVATIONS ARE NAVD 88

DRIVING DIRECTIONS: FROM THE INTERSECTION OF C.R. 1 (ORLA) AND MONSANTO ROAD, GO WEST ON MONSANTO ROAD APPROX. 2.1 MILES, TURN LEFT AND GO SOUTH APPROX. 1.25 MILES TO A ROAD SURVEY ON RIGHT (WEST), FOLLOW ROAD SURVEY WEST AND NORTH APPROX. 0.46 MILES TO THE SOUTHEAST PAD CORNER FOR THIS LOCATION.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 6th DAY OF MAY 2022

FILIMON F. JARAMILLO PLS 12797

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

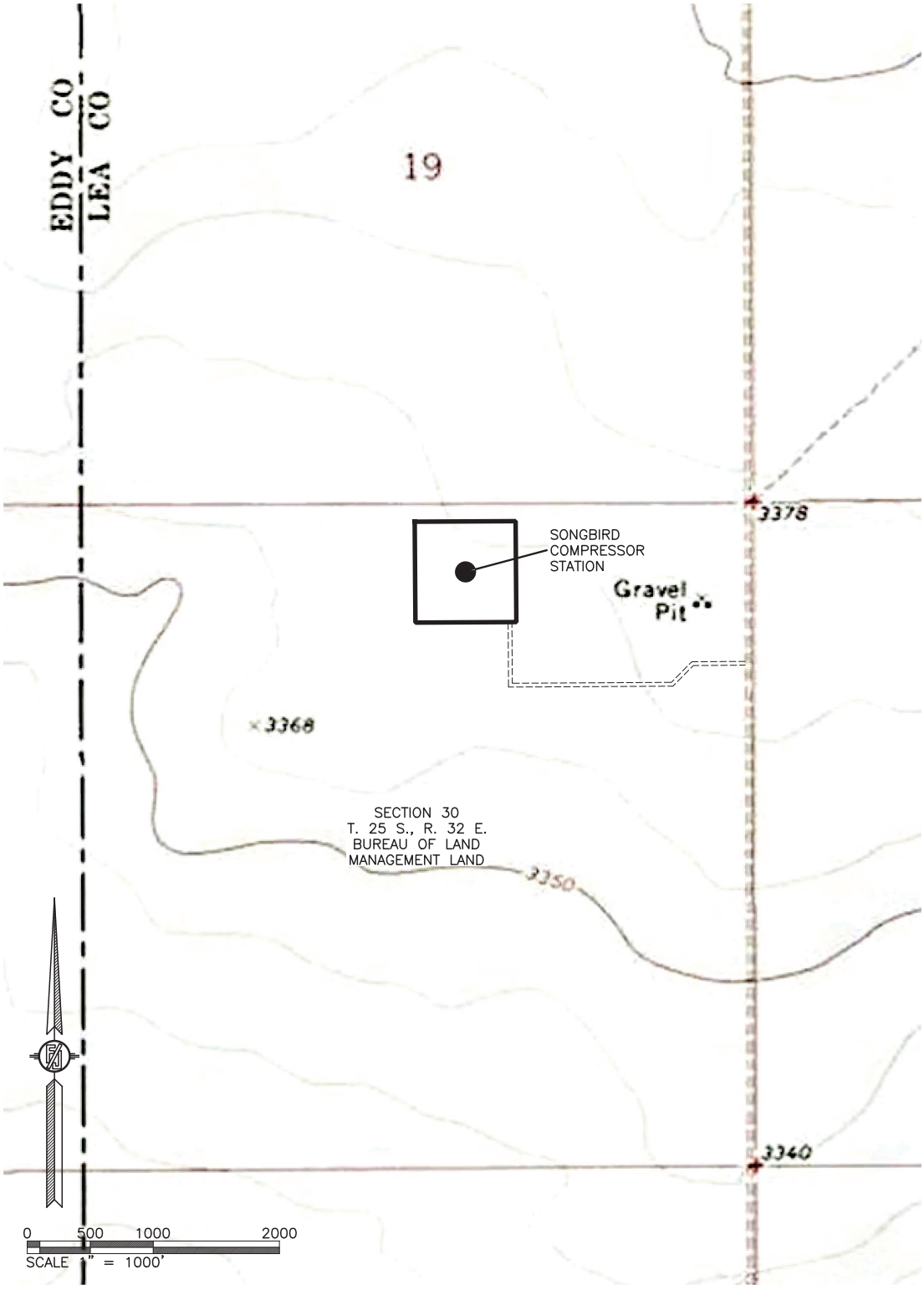
SONGBIRD COMPRESSOR STATION (AA000549611)

COTTON DRAW MIDSTREAM, LLC

IN THE NW/4 NE/4 OF
SECTION 30, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

MAY 6, 2022

QUAD MAP



SHEET: 2-3

SURVEY NO. 9407

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

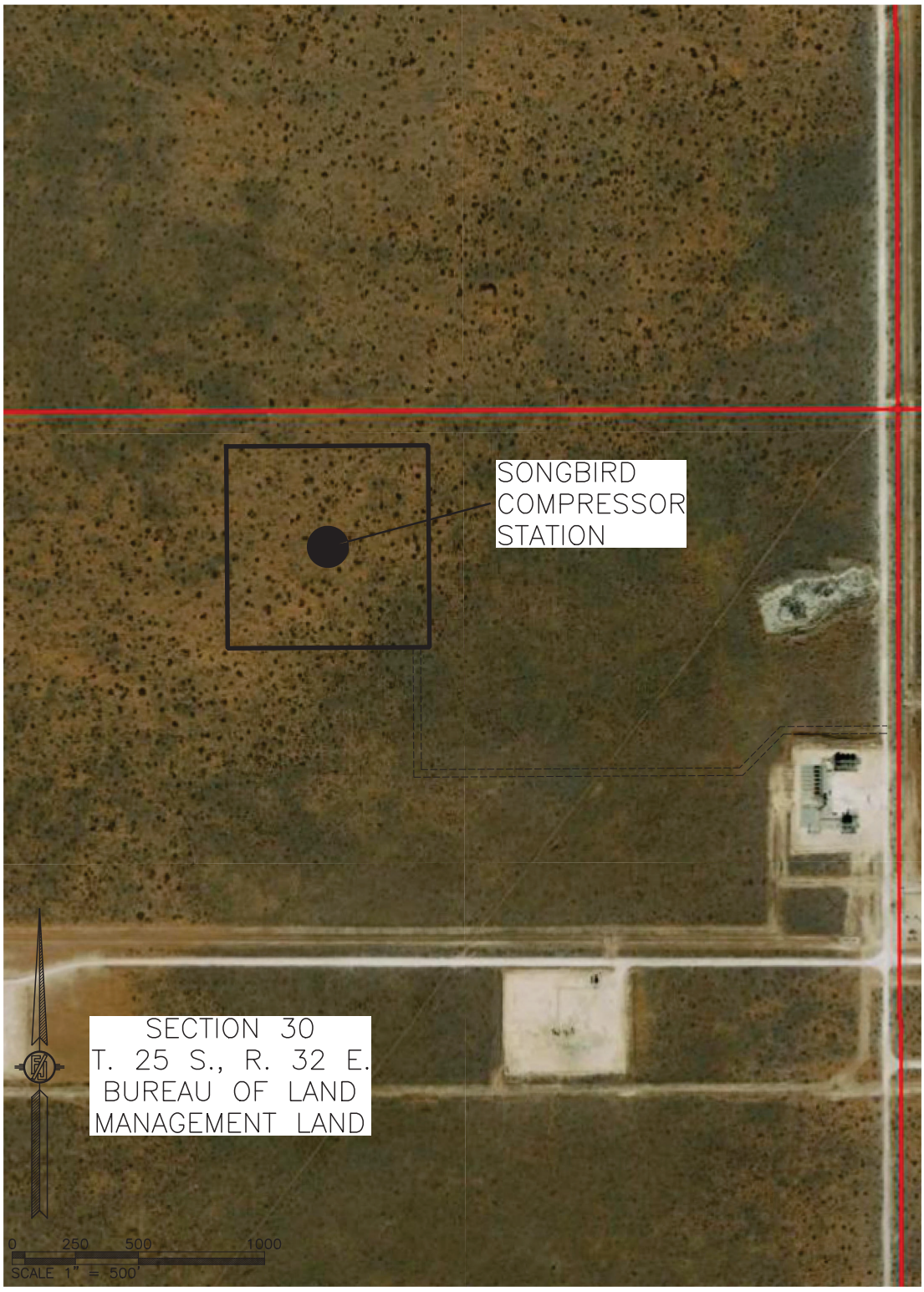
SONGBIRD COMPRESSOR STATION (AA000549611)

COTTON DRAW MIDSTREAM, LLC

IN THE NW/4 NE/4 OF
SECTION 30, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

MAY 6, 2022

AERIAL PHOTO

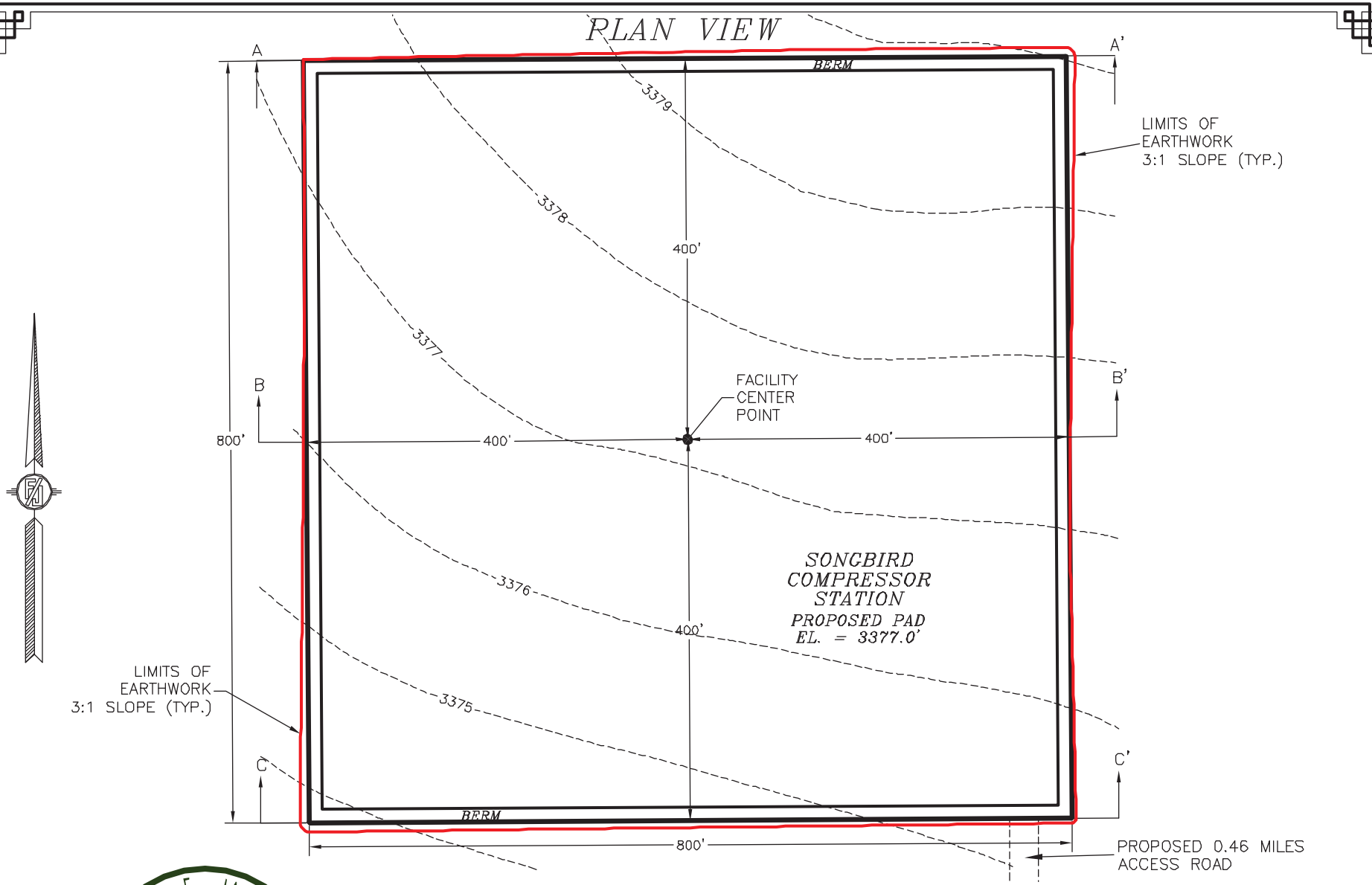


SHEET: 3-3

SURVEY NO. 9407

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

PLAN VIEW



I, FILIMON F. JARAMILLO, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

FILIMON F. JARAMILLO, NMPS 12797

COTTON DRAW MIDSTREAM, LLC
PAD ELEVATIONS AND CROSS SECTIONS
FOR SONGBIRD COMPRESSOR STATION
SECTION 30, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

MAY 6, 2022

015 75 150 300
SCALE 1" = 150'

CUT	FILL	NET
12844 CU. YD	15661 CU. YD	2817 CU. YD (FILL)

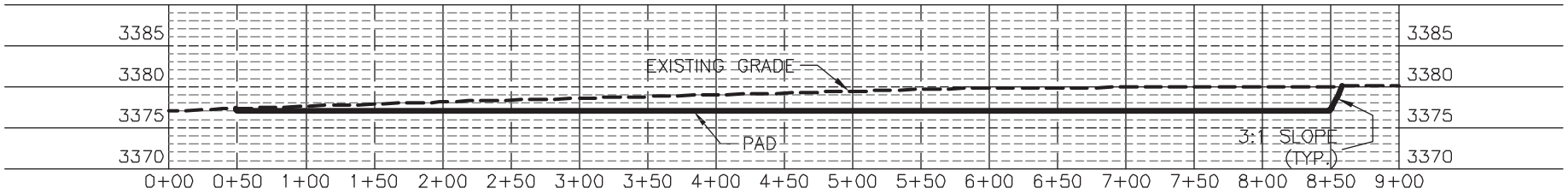
EARTHWORK QUANTITIES ARE ESTIMATED

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

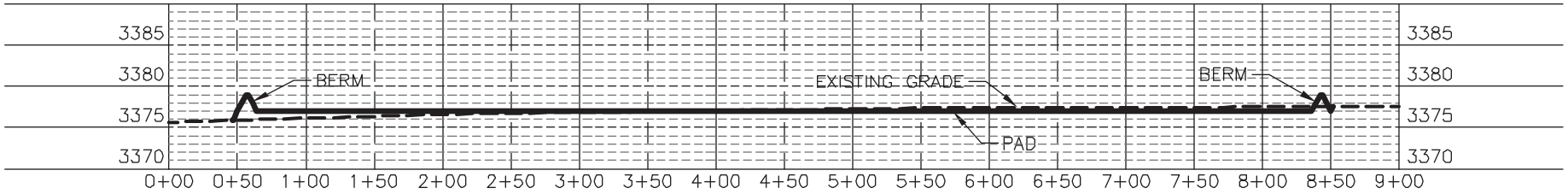
SHEET 1-2
SURVEY NO. 9407

CROSS-SECTIONS

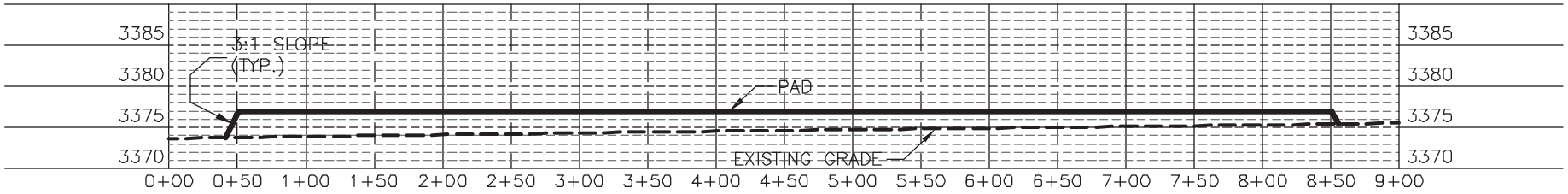
SECTION A-A'



SECTION B-B'



SECTION C-C'



I, FILIMON F. JARAMILLO, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

FILIMON F. JARAMILLO, NM 12797

COTTON DRAW MIDSTREAM, LLC
PAD ELEVATIONS AND CROSS SECTIONS
FOR SONGBIRD COMPRESSOR STATION
SECTION 30, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

MAY 6, 2022

012 60 120 240
SCALE 1" = 120' - 1" = 20' VER

CUT	FILL	NET
12844 CU. YD	15661 CU. YD	2817 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

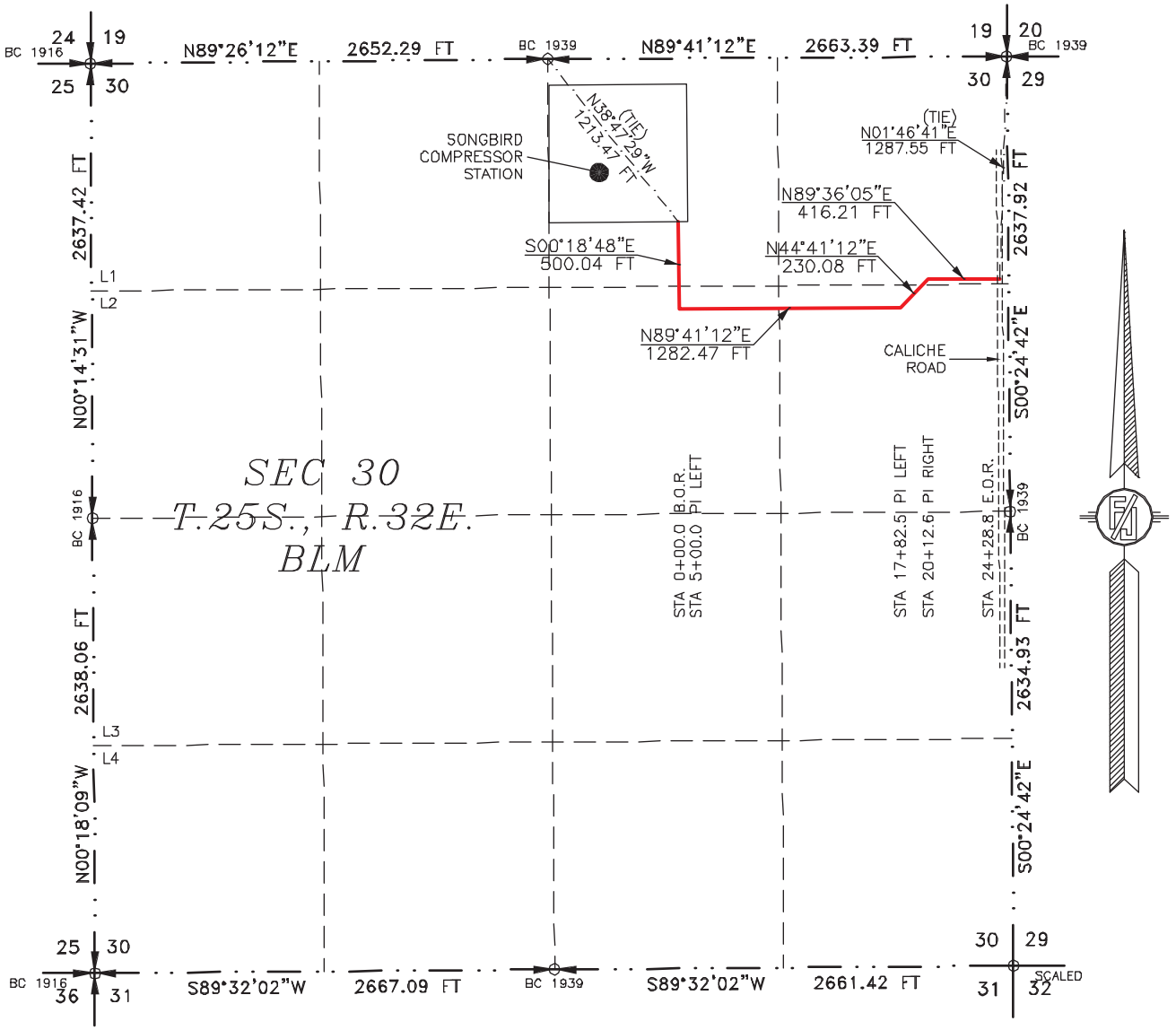
SHEET 2-2
SURVEY NO. 9407

ACCESS ROAD PLAT (7600620R)

SONGBIRD COMPRESSOR STATION ACCESS ROAD

COTTON DRAW MIDSTREAM, LLC

CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 30, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
MAY 6, 2022



SEE NEXT SHEET (2-2) FOR DESCRIPTION

1000 0 1000
Scale: 1" = 1000'

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF I THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS [illegible] DAY OF MAY 2022

FILIMON F. JARAMILLO PLS 12797
301 SOUTH CANAL
(575) 234-3341

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SHEET: 1-2

SURVEY NO. 9407

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT (7600620R)

SONGBIRD COMPRESSOR STATION ACCESS ROAD

COTTON DRAW MIDSTREAM, LLC

CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 30, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
MAY 6, 2022

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 30, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., LEA COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE NW/4 NE/4 OF SAID SECTION 30, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., WHENCE THE NORTH QUARTER CORNER OF SAID SECTION 30, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS N38°47'29"W, A DISTANCE OF 1213.47 FEET;
THENCE S00°18'48"E A DISTANCE OF 500.04 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE N89°41'12"E A DISTANCE OF 1282.47 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE N44°41'12"E A DISTANCE OF 230.08 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;
THENCE N89°36'05"E A DISTANCE OF 416.21 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHEAST CORNER OF SAID SECTION 30, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS N01°46'41"E, A DISTANCE OF 1287.55 FEET;

SAID STRIP OF LAND BEING 2428.80 FEET OR 147.20 RODS IN LENGTH, CONTAINING 1.673 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

NW/4 NE/4	373.06 L.F.	22.61 RODS	0.257 ACRES
SW/4 NE/4	706.40 L.F.	42.81 RODS	0.487 ACRES
SE/4 NE/4	886.88 L.F.	53.75 RODS	0.611 ACRES
NE/4 NE/4	462.46 L.F.	28.03 RODS	0.319 ACRES

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS [illegible] DAY OF MAY, 2022

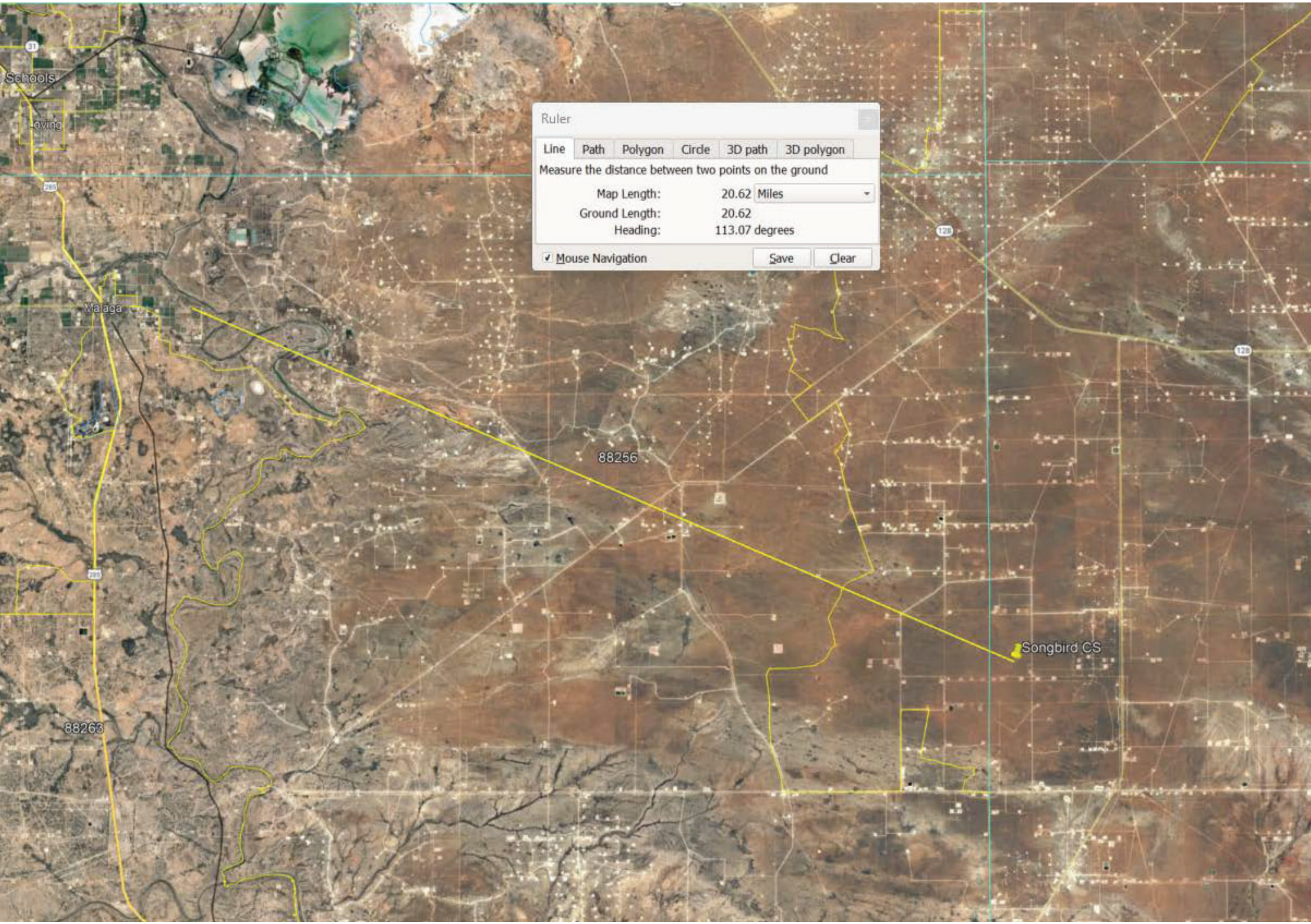
FILIMON F. JARAMILLO PLS 12797
301 SOUTH CANAL
(575) 234-3341 CARLSBAD, NEW MEXICO

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SHEET: 2-2

SURVEY NO. 9407

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO


Ruler
Line
Path
Polygon
Circle
3D path
3D polygon
Measure the distance between two points on the ground
Map Length: 20.62 Miles
Ground Length: 20.62
Heading: 113.07 degrees
Mouse Navigation
Save
Clear
Schools
88256
88263
Songbird CS

Section 9

Proof of Public Notice

(for NSR applications submitting under 20.2.72 or 20.2.74 NMAC)
(This proof is required by: 20.2.72.203.A.14 NMAC "Documentary Proof of applicant's public notice")

☑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.

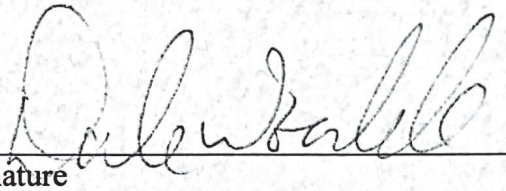
All public notice requirements have been completed and are included in this section.

General Posting of Notices – Certification

I, Dale Woodall, the undersigned, certify that on March 6th, 2023, posted a true and correct copy of the attached Public Notice in the following publicly accessible and conspicuous places in the **Loving** of **Eddy** County, State of New Mexico on the following dates:

1. Location 1: Facility entrance Date: 03/06/2023
2. Location 2: Loving USPS; 402 W Beech St; Eddy County Date: 03/06/2023
3. Location 3: Loving City Hall; 415 W Cedar, Eddy County Date: 03/06/2023
4. Location 4: Brewer Chevron Station: 100 N 8th St; Eddy County Date: 03/06/2023

Signed this 6th day of March, 2023,



Signature

03/06/2023
Date

DALE WOODALL
Printed Name

Env. Professional, Devon Energy
Title

$1500 per referral!

Employee Name:

_____

Referred Diesel Mechanic Name:

_____

READY TO APPLY?

SCAN NOW!

Sand Revolution

SCHED

Day & Night
Availa

QUALIFICATIONS:

1-year verifiable experience

VALID DRIVER'S LICENSE

Must Pass Pre-employment Drug Test

NOTICE

Cotton Draw Midstream, LLC announces its application submittal to the New Mexico Environment Department for an air quality permit for the **construction** of its **Songbird Compressor Station**. The expected date of application submittal to the Air Quality Bureau is **March 10, 2023.**

The exact location for the proposed facility known as Songbird Compressor Station, will be at latitude **32** deg, **6** min, **25** sec and longitude **-103** deg, **42** min, **47** sec. The approximate location of this facility is **25.60** miles **southeast** of **Loving** in **Eddy** county.

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Volatile Organic Compounds (VOC)	31	154
Total sum of all Hazardous Air Pollutants (HAPs)	2	10
Green House Gas Emissions as Total CO_2e	n/a	87889

The standard and maximum operating schedules of the facility will be from **12** a.m. to **12** p.m. 7 days a week and a maximum of **52** weeks per year

The owner of the Facility is:

Cotton Draw Midstream, LLC
333 West Sheridan Ave
Oklahoma City, OK, 73102

If you have any comments about the construction or operation of this facility, and you want your comments to be made as part of the permit review process, you must submit your comments in writing to this address: Permit Programs Manager; New Mexico Environment Department; Air Quality Bureau; 525 Camino de los Marquez, Suite 1; Santa Fe, New Mexico; 87505-1816. Other comments and questions may be submitted verbally. (505) 476-4300; 1 800 224-7009.

With your comments, please refer to the company name and facility name, or send a copy of this notice along with your comments. This information is necessary since the Department may have not yet received the permit application. Please include a legible return mailing address. Once the Department has completed its preliminary review of the application and its air quality impacts, the Department's notice will be published in the legal section of a newspaper circulated near the facility location.

Attención

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Notice of Non-Discrimination

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Pecos Valley Pr
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NOTICE

Targa Northern Delaware, LLC announces its application submittal to the New Mexico Environment Department for an air quality permit for the **modification** of its **Road Runner Gas Processing Plant** facility. The expected date of application submittal to the Air Quality Bureau is **December 13, 2022.**

The exact location for the proposed facility known as, **Road Runner Gas Pro**
and longitude **-104** deg, **6** min, **29.97**

NOTICE

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PM $_{11}$	2	8
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March 2, 2023

To Whom it may concern

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Sincerely,

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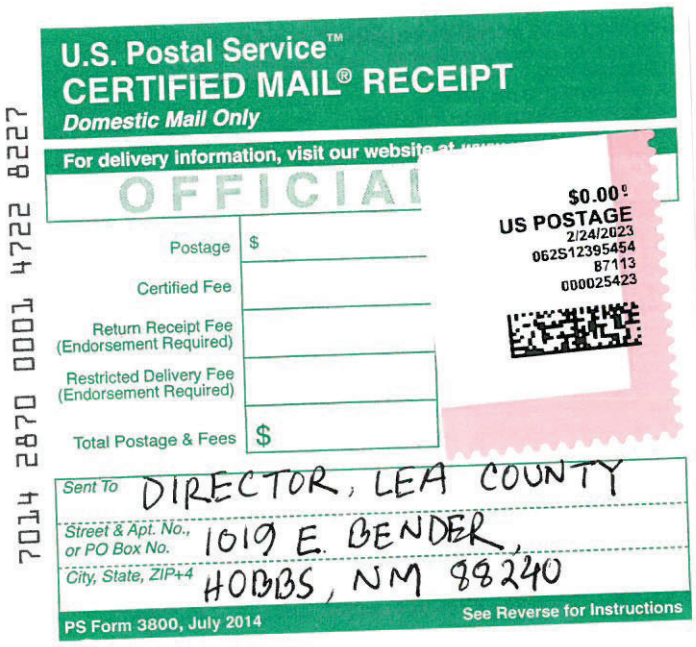

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Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

$0.00
US POSTAGE
2/24/2023
062S12395454
87113
000025423

7014 2870 0001 4722 8227

Sent To DIRECTOR, LEA COUNTY
Street & Apt. No., or PO Box No. 1019 E. BENDER,
City, State, ZIP+4 HOBBS, NM 88240

PS Form 3800, July 2014 See Reverse for Instructions

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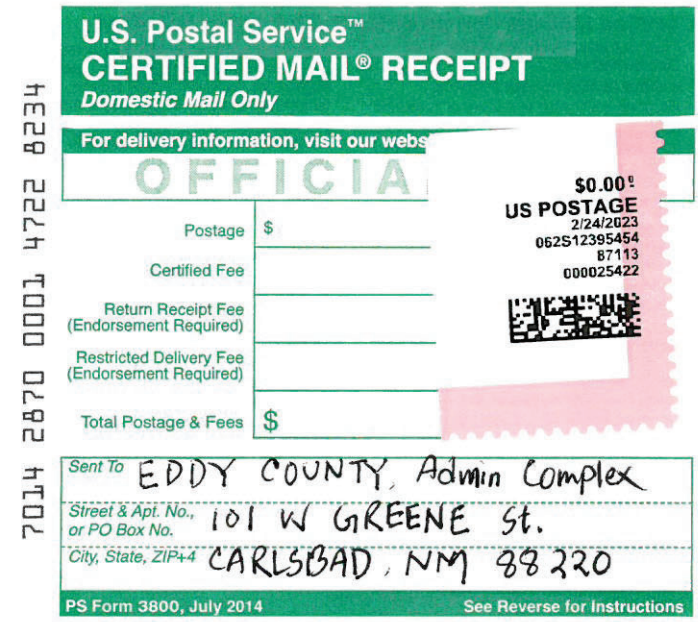
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

$0.00
US POSTAGE
2/24/2023
062S12395454
87113
000025424

7014 2870 0001 4722 8203

Sent To MAYOR
Street & Apt. No., or PO Box No. 415 W CEDAR
City, State, ZIP+4 LOVING, NM 88256-0056

PS Form 3800, July 2014 See Reverse for Instructions



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Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

$0.00
US POSTAGE
2/24/2023
062S12395454
87113
000025422

7014 2870 0001 4722 8234

Sent To EDDY COUNTY, Admin Complex
Street & Apt. No., or PO Box No. 101 W GREENE St.
City, State, ZIP+4 CARLSBAD, NM 88220

PS Form 3800, July 2014 See Reverse for Instructions

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Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

$0.00
US POSTAGE
2/24/2023
062S12395454
87113
000025421

7014 2870 0001 4722 8265

Sent To MAYOR
Street & Apt. No., or PO Box No. 710 W. WYOMING
City, State, ZIP+4 JAL, NM 88252

PS Form 3800, July 2014 See Reverse for Instructions

U.S. Postal Service™
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Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

$0.00
US POSTAGE
2/24/2023
062S12395454
87113
000025420

7014 2870 0001 4722 8258

Sent To State Land Office
Street & Apt. No., or PO Box No. 310 OLD SANTA FE TRAIL
City, State, ZIP+4 SANTA FE, NM 87504

PS Form 3800, July 2014 See Reverse for Instructions

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NOTICE OF AIR QUALITY PERMIT APPLICATION

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General information about air quality and the permitting process, and links to the regulations can be found at the Air Quality Bureau's website: www.env.nm.gov/air-quality/permitting-section-home-page/. The regulation dealing with public participation in the permit review process is 20.2.72.206 NMAC.

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NMED does not discriminate on the basis of race, color, national origin, disability, age or sex in the administration of its programs or activities, as required by applicable laws and regulations. NMED is responsible for coordination of compliance efforts and receipt of inquiries concerning non-discrimination requirements implemented by 40 C.F.R. Part 7, including Title VI of the Civil Rights Act of 1964, as amended; Section 504 of the Rehabilitation Act of 1973; the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972, and Section 13 of the Federal Water Pollution Control Act Amendments of 1972. If you have any questions about this notice or any of NMED's non-discrimination programs, policies or procedures, or if you believe that you have been discriminated against with respect to a NMED program or activity, you may contact: Kathryn Becker, Non-Discrimination Coordinator, NMED, 1190 St. Francis Dr., Suite N4050, P.O. Box 5469, Santa Fe, NM 87502, (505) 827-2855, nd.coordinator@state.nm.us. You may also visit our website at https://www.env.nm.gov/non-employee-discrimination-complaint-page/ to learn how and where to file a complaint of discrimination.

Affidavit of Publicatio

STATE OF NEW MEXICO
COUNTY OF LEA

I, Daniel Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

Beginning with the issue dated
March 08, 2023
and ending with the issue dated
March 08, 2023.

Publisher

Sworn and subscribed to before me this 8th day of March 2023.

Business Manager

My commission expires
January 29, 2027
(Seal)

STATE OF NEW MEXICO
NOTARY PUBLIC
GUSSIE RUTH BLACK
COMMISSION # 1087526
COMMISSION EXPIRES 01/29/2027

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937 and payment of fees for said

NOTICE OF AIR QUALITY PERMIT APPLICATION

Cotton Draw Midstream, LLC announces its application submittal to the New Mexico Environment Department for an air quality permit for the **construction** of its **Songbird Compressor Station.** The expected date of application submittal to the Air Quality Bureau is **March 10, 2023.**

The exact location for the proposed facility known as Songbird Compressor Station, will be at latitude **32** deg, **6** min, **25** sec and longitude **-103** deg, **42** min, **47** sec. The approximate location of this facility is **25.60** miles **southeast** of **Loving** in **Eddy** county.

The proposed construction consists of a new compressor station. Equipment will include compressor engines, storage tanks, a glycol dehydrator, reboiler, emission control devices and ancillary equipment. The estimated maximum quantities of any regulated air contaminant will be as follows in pound per hour (pph) and tons per year (tpy) and could change slightly during the course of the Department's review:

Pollutant:	Pounds per hour	Tons per year
PM_{10}	2	8
$PM_{2.5}$	2	8
Sulfur Dioxide (SO_2)	8	34
Nitrogen Oxides (NO_x)	17	70
Carbon Monoxide (CO)	10	41
Volatile Organic Compounds (VOC)	31	154
Total sum of all Hazardous Air Pollutants (HAPs)	2	10
Green House Gas Emissions as Total CO_2e	n/a	87889

The standard and maximum operating schedules of the facility will be from **12** a.m. to **12** p.m. **7** days a week and a maximum of **52** weeks per year

The owner of the Facility is:

Cotton Draw Midstream, LLC
333 West Sheridan Ave
Oklahoma City, OK, 73102

If you have any comments about the construction or operation of this facility, and you want your comments to be made as part of the permit review process, you must submit your comments in writing to this address: Permit Programs Manager; New Mexico Environment Department; Air Quality Bureau; 525 Camino de los Marquez, Suite 1; Santa Fe, New Mexico; 87505-1816. Other comments and questions may be submitted verbally. (505) 476-4300; 1 800 224-7009.

Please refer to the company name and site name or send a copy of this notice along with your comments, since the Department may have not yet received the permit application. Please include a legible return mailing address with your comments. Once the Department has performed a preliminary review of the application and its air quality impacts, the Department's notice will be published in the legal section of a newspaper circulated near the facility location.

General information about air quality and the permitting process, and links to the regulations can be found at the Air Quality Bureau's website: www.env.nm.gov/air-quality/permitting-section-home-page/. The regulation dealing with public participation in the permit review process is 20.2.72.206 NMAC.

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TRINITY CONSULTANTS
9400 HOLLY AVE NE BLG 3
STE 300
ALBUQUERQUE, NM 87122

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LEGAL NOTICE
March 8, 2023

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#00276428

9400 HOLLY AVE NE BLG 3
STE 300
ALBUQUERQUE, NM 87122

Atiqur Rahman

From: Atiqur Rahman
Sent: Thursday, March 2, 2023 5:08 PM
To: tjmiracle@1radiosquare.com
Cc: Adam Erenstein
Subject: Public Service Announcement for Songbird Compressor Station in Lea County

Dear KZOR Radio, Z 94 FM,

Per New Mexico Administrative Code 20.2.72.203.B NMAC and according to the Guidance for Public Notice for Air Quality Permit Applications – **(5) Notifications: Submittal of Public Service Announcement (PSA):** A public service announcement required for permits and significant permit revisions must be submitted to at least one radio or television station, which services the municipality, or county which the facility is or will be located. **Therefore, based on the above, we respectfully ask you to air the information shown below as a Public Service Announcement.**

The public service announcement request must contain the following information about the facility or proposed facility (20.2.72.203.D NMAC).

a. The name: **Songbird Compressor Station,** location: latitude **32** deg**, 6** min, **25** sec and longitude -**103** deg**, 42** min, **47** sec. The approximate location of this facility is **25.60** miles **southeast** of **Loving** in **Eddy** county and type of business: **natural gas compressor facility.**
b. The name and principal owner or operator: **Cotton Draw Midstream, LLC** – owner and operator.
c. The type of process or change for which the permit is sought: **NSR** Permit for **natural gas compression and distribution facility.**
d. Locations where the notices have been posted in Loving, NM: **(1) Songbird Compressor Station Facility's Entrance (2) Loving USPS – 402 W Beech St., Loving, NM 88256 (3) Loving City Hall – 415 W Cedar St., Loving, NM 88256 (4) Brewer Chevron Station – 100 N 8th St., Loving, NM 88256.**
e. The Department's address or telephone number to which comments may be directed: **Permit Programs manager; New Mexico Environment Department; Air Quality Bureau; 525 Camino de los Marquez, Suite 1, Santa Fe, New Mexico; 87505-1816; (505) 476-4300; 1 (800) 224-7009.**

Thank you!

Atiqur Rahman
Associate Consultant

P 505.266.6611 M 575.489.8334
Email: Atiqur.rahman@trinityconsultants.com
Address: 9400 Holly Avenue NE, Building 3, Suite B, Albuquerque, NM 87122

Section 10

Written Description of the Routine Operations of the Facility

---

A written description of the routine operations of the facility. Include a description of how each piece of equipment will be operated, how controls will be used, and the fate of both the products and waste generated. For modifications and/or revisions, explain how the changes will affect the existing process. In a separate paragraph describe the major process bottlenecks that limit production. The purpose of this description is to provide sufficient information about plant operations for the permit writer to determine appropriate emission sources.

The facility will be gathering gas from various wells in the area. The gas will be compressed by eight (8) natural gas driven compressors. Condensate and water collected from inlet separator and compression, will be separated in a gunbarrel tank (Unit TK-1) and will be stored in an atmospheric tank. Condensate and produced water truck loading will have vapor-balance tied to enclosed combustor device (ECD-2) with 98% capture efficiency and 98% destruction removal efficiency. Flash, working and breathing emissions from gunbarrel (Unit TK-1), condensate storage tanks (Unit TK-2, TK-3 & TK-4), produced water storage tanks (Unit TK-5, TK-6, & TK-7) and compressor vents will be controlled by ECD-2 with 98% destruction removal efficiency. A SSM flare (Unit FL-1 SSM) will control the maintenance blowdown events with 98% DRE. The facility will perform maximum 51 pigging events per year.

Compressed gas will be treated using a TEG glycol dehydrator (Unit DEHY-1) to remove any water content before sending to the pipeline for transport. The glycol dehydration unit (DEHY-1) incorporates three distinct sources of air emissions: (1) a gas-fired reboiler burner, (2) a glycol recovery still, and (3) a glycol flash tank. Flash tank emissions will be routed to the reboiler as fuel and the non-condensable will be sent to the ECD-1 with 98% destruction removal efficiency. The dry gas will be routed to a pipeline for transport.

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)**:**
All sources listed in the Table 2-A of this application.

B. Apply the 3 criteria for determining a single source:

SIC Code: Surrounding or associated sources belong to the same 2-digit industrial grouping (2-digit SIC code) as this facility OR surrounding or associated sources that belong to different 2-digit SIC codes are support facilities for this source.

☑ **Yes** ☐ **No**

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

☑ **Yes** ☐ **No**

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

☑ **Yes** ☐ **No**

C. Make a determination:

☑ The source, as described in this application, constitutes the entire source for 20.2.70, 20.2.72, 20.2.73, or 20.2.74 NMAC applicability purposes. If in "A" above you evaluated only the source that is the subject of this application, all "**YES**" boxes should be checked. If in "A" above you evaluated other sources as well, you must check **AT LEAST ONE** of the boxes "**NO**" to conclude that the source, as described in the application, is the entire source for 20.2.70, 20.2.72, 20.2.73, and 20.2.74 NMAC applicability purposes.

☐ The source, as described in this application, **does not** constitute the entire source for 20.2.70, 20.2.72, 20.2.73, or 20.2.74 NMAC applicability purposes (A permit may be issued for a portion of a source). The entire source consists of the following facilities or emissions sources (list and describe):

Section 12

Section 12.A
PSD Applicability Determination for All Sources

(Submitting under 20.2.72, 20.2.74 NMAC)

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

A. This facility is:

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

1

Section 13

Determination of State & Federal Air Quality Regulations

This section lists each state and federal air quality regulation that may apply to your facility and/or equipment that are stationary sources of regulated air pollutants.

Not all state and federal air quality regulations are included in this list. Go to the Code of Federal Regulations (CFR) or to the Air Quality Bureau's regulation page to see the full set of air quality regulations.

Required Information for Specific Equipment:
For regulations that apply to specific source types, in the 'Justification' column **provide any information needed to determine if the regulation does or does not apply**. **For example**, to determine if emissions standards at 40 CFR 60, Subpart IIII apply to your three identical stationary engines, we need to know the construction date as defined in that regulation; the manufacturer date; the date of reconstruction or modification, if any; if they are or are not fire pump engines; if they are or are not emergency engines as defined in that regulation; their site ratings; and the cylinder displacement.

Required Information for Regulations that Apply to the Entire Facility:
See instructions in the 'Justification' column for the information that is needed to determine if an 'Entire Facility' type of regulation applies (e.g. 20.2.70 or 20.2.73 NMAC).

Regulatory Citations for Regulations That Do Not, but Could Apply:
If there is a state or federal air quality regulation that does not apply, but you have a piece of equipment in a source category for which a regulation has been promulgated, you must **provide the low level regulatory citation showing why your piece of equipment is not subject to or exempt from the regulation. For example** if you have a stationary internal combustion engine that is not subject to 40 CFR 63, Subpart ZZZZ because it is an existing 2 stroke lean burn stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, your citation would be 40 CFR 63.6590(b)(3)(i). **We don't want a discussion of every non-applicable regulation, but if it is possible a regulation could apply, explain why it does not. For example,** if your facility is a power plant, you do not need to include a citation to show that 40 CFR 60, Subpart OOO does not apply to your non-existent rock crusher.

Regulatory Citations for Emission Standards:
For each unit that is subject to an emission standard in a source specific regulation, such as 40 CFR 60, Subpart OOO or 40 CFR 63, Subpart HH, include the low level regulatory citation of that emission standard. Emission standards can be numerical emission limits, work practice standards, or other requirements such as maintenance. **Here are examples:** a glycol dehydrator is subject to the general standards at 63.764C(1)(i) through (iii); an engine is subject to 63.6601, Tables 2a and 2b; a crusher is subject to 60.672(b), Table 3 and all transfer points are subject to 60.672(e)(1)

Federally Enforceable Conditions:
All federal regulations are federally enforceable. All Air Quality Bureau State regulations are federally enforceable except for the following: affirmative defense portions at 20.2.7.6.B, 20.2.7.110(B)(15), 20.2.7.11 through 20.2.7.113, 20.2.7.115, and 20.2.7.116; 20.2.37; 20.2.42; 20.2.43; 20.2.62; 20.2.63; 20.2.86; 20.2.89; and 20.2.90 NMAC. Federally enforceable means that EPA can enforce the regulation as well as the Air Quality Bureau and federally enforceable regulations can count toward determining a facility's potential to emit (PTE) for the Title V, PSD, and nonattainment permit regulations.

INCLUDE ANY OTHER INFORMATION NEEDED TO COMPLETE AN APPLICABILITY DETERMINATION OR THAT IS RELEVENT TO YOUR FACILITY'S NOTICE OF INTENT OR PERMIT.

EPA Applicability Determination Index for 40 CFR 60, 61, 63, etc: http://cfpub.epa.gov/adi/

Example of a Table for State Regulations:

State Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification: (You may delete instructions or statements that do not apply in the justification column to shorten the document.)
20.2.1 NMAC	General Provisions	Yes	Facility	General Provisions apply to Notice of Intent, Construction, and Title V permit applications.
20.2.3 NMAC	Ambient Air Quality Standards NMAAQS	Yes	Facility	20.2.3 NMAC is a State Implementation Plan (SIP) approved regulation that limits the maximum allowable concentration of, Sulfur Compounds, Carbon Monoxide and Nitrogen Dioxide. The facility meets maximum allowable concentration of Sulfur compounds, Carbon Monoxide and Nitrogen.
20.2.7 NMAC	Excess Emissions	Yes	Facility	This regulation establishes requirements for the facility if operations at the facility result in any excess emissions. The owner or operator will operate the source at the facility having an excess emission, to the extent practicable, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions. The facility will also notify the NMED of any excess emission per 20.2.7.110 NMAC
20.2.23 NMAC	Fugitive Dust Control	No	Facility	This regulation does not apply as the has no need to fugitive dust control measures as the facility does not fall under applicability facility list mentioned in this regulation.
20.2.33 NMAC	Gas Burning Equipment - Nitrogen Dioxide	No	N/A	This facility does not have gas burning equipment (external combustion emission sources, such as gas fired boilers and heaters) having a heat input of greater than 1,000,000 million British Thermal Units per year per unit. The facility is not subject to this regulation and does not have emission sources that meet the applicability requirements under 20.2.33.108 NMAC.
20.2.34 NMAC	Oil Burning Equipment: NO_2	No	N/A	This facility does not have oil burning equipment (external combustion emission sources, such as oil-fired boilers and heaters) having a heat input of greater than 1,000,000 million British Thermal Units per year per unit. The facility is not subject to this regulation and does not have emission sources that meet the applicability requirements under 20.2.34.108 NMAC.
20.2.35 NMAC	Natural Gas Processing Plant – Sulfur	No	Facility	This regulation establishes sulfur emission standards for natural gas processing plants. This facility is a new natural gas processing plant as defined in 20.2.35.7.B NMAC. This facility is a compressor station. Therefore, this regulation is not applicable to this facility.
20.2.37 and 20.2.36 NMAC	Petroleum Processing Facilities and Petroleum Refineries	N/A	N/A	**These regulations were repealed by the Environmental Improvement Board. If you had equipment subject to 20.2.37 NMAC before the repeal, your combustion emission sources are now subject to 20.2.61 NMAC.**
20.2.38 NMAC	Hydrocarbon Storage Facility	No	N/A	This facility is not a petroleum production facility as defined in 20.2.38.7.D NMAC. Natural gas enters this facility via pipeline and inlet separator. Condensate stored at this facility comes from the pipeline, not a well. Accordingly, the tanks at this facility do not meet the definition of a tank battery as defined in 20.2.38.7.E.
20.2.39 NMAC	Sulfur Recovery Plant - Sulfur	No	N/A	This regulation could apply to sulfur recovery plants that are not part of petroleum or natural gas processing facilities. This facility is a natural gas compressor station. Thus, the regulation is not applicable to this facility.
20.2.50 NMAC	Oil and Gas Sector – Ozone Precursor Pollutants	Yes	ENG-1 through ENG-8, RBL-1, FL-1 SSM, ECD-1, ECD-2	113 – This facility has natural gas-fired spark ignition engines (ENG-1 through ENG-8). The units do not exceed the emission standard stated in 20.2.50.113.B(3) Table 2. 114 – This facility has reciprocating compressors (Units ENG-1 through ENG-8). Thus, this facility is subject to this subpart. The owner will comply with this subpart as stated in the 20.2.50.114.B(4). 115 – The control devices and closed vent systems at this facility are not used to comply with the requirements of this rule; therefore, they are not subject to the requirements of this rule. 116 – This facility will have equipment leaks and fugitive emissions. Thus, it will comply with this regulation.

State Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification: (You may delete instructions or statements that do not apply in the justification column to shorten the document.)
				117 – This facility is a natural gas compressor station. Thus, it is not subject to this rule. 118 – This facility has greater than 2 tpy VOC emissions. Thus, the owner will achieve a minimum combined capture and control efficiency of 95% of VOC emissions from the still vent and flash tank upon startup or will maintain a minimum 95% combustion efficiency of combustion control device to comply with this regulation. 119 – This facility does not meet the minimum requirement of 20 MMBtu/hr heater capacity. Thus, this facility is not subject to this subpart. 120 – This facility will truck out more than 13 times a year and is therefore subject to this subpart. 121 – This facility does not have any pig launching and receiving. Therefore, this facility is not subject to this subpart. 122 – This facility is subject to this subpart and will comply with this subpart as stated in 20.2.50.122.B(3) Table-2. 123 – This facility has less than 2 tpy maximum allowable VOC emissions. Thus, it is not subject to this subpart.
20.2.61.109 NMAC	Smoke & Visible Emissions	Yes	ENG-1 Through ENG-8, FL-1 SSM, RBL-1	This regulation that limits opacity to 20% applies to Stationary Combustion Equipment, such as engines, boilers, heaters, and flares. This regulation is applicable to the following units – ENG-1 through ENG-8, RBL-1, FL-1 SSM.
20.2.70 NMAC	Operating Permits	Yes	Facility	Applies if your 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 or 25 or more tpy for combined HAPs. This facility meets this minimum requirement. Thus, this facility is subject to this regulation.
20.2.71 NMAC	Operating Permit Fees	Yes	Facility	This regulation establishes a schedule of operating permit emission fees. The facility is subject to 20.2.70 NMAC and is therefore subject to requirements of this regulation.
20.2.72 NMAC	Construction Permits	Yes	Facility	This facility meets the minimum potential emission rate (PER) greater than 10 pph or greater than 25 tpy for any pollutant. The entire facility is subject to this regulation.
20.2.73 NMAC	NOI & Emissions Inventory Requirements	Yes	Facility	This regulation establishes emission inventory requirements. The facility meets the applicability requirements of 20.2.73.300 NMAC. The facility will meet all applicable reporting requirements under 20.2.73.300.B.1 NMAC.
20.2.74 NMAC	Permits – Prevention of Significant Deterioration (PSD)	No	Facility	This facility does not meet the minimum requirement for major source as defined in 20.2.74.7.AG. Thus, this regulation is not applicable to this facility.
20.2.75 NMAC	Construction Permit Fees	Yes	Facility	This regulation establishes a schedule of operating permit emission fees. This facility is subject to 20.2.72 NMAC and in turn subject to 20.2.75 NMAC.
20.2.77 NMAC	New Source Performance	Yes	FUG, ENG-1 Through ENG-8	This regulation establishes state authority to implement new source performance standards (NSPS) for stationary sources, as amended through January 15, 2017.

State Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification: (You may delete instructions or statements that do not apply in the justification column to shorten the document.)
				FUG applies as it is subject to NSPS OOOOb, and Units ENG-1 through ENG-8 will be subject to JJJJ and OOOOb when the rule is promulgated.
20.2.78 NMAC	Emission Standards for HAPS	No	N/A	This regulation establishes state authority to implement emission standards for hazardous air pollutants subject to 40 CFR Part 61. This facility does not emit hazardous air pollutants which are subject to the requirements of 40 CFR Part 61 and is therefore not subject to this regulation
20.2.79 NMAC	Permits – Nonattainment Areas	No	Facility	This regulation establishes the requirements for obtaining a nonattainment area permit. The facility is not located in a non-attainment area and therefore is not subject to this regulation.
20.2.80 NMAC	Stack Heights	No	N/A	This regulation establishes requirements for the evaluation of stack heights and other dispersion techniques. This regulation does not apply, as all stacks at the facility will follow good engineering practice.
20.2.82 NMAC	MACT Standards for source categories of HAPS	Yes	DEHY-1, ENG-1 Through ENG-8	The station includes equipment subject to requirements under 40 CFR Part 63 and will comply with the applicability rules as discussed in this section.

Example of a Table for Applicable Federal Regulations (Note: This is not an exhaustive list):

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
40 CFR 50	NAAQS	Yes	Facility	This regulation defines national ambient air quality standards. The facility meets all applicable national ambient air quality standards for NO_x, CO, SO_2, H_2S, PM_{10}, and $PM_{2.5}$ under this regulation.
NSPS 40 CFR 60, Subpart A	General Provisions	Yes	ENG-1 Through ENG-8, FUG	This regulation defines general provisions for relevant standards that have been set under this part. The facility is subject to this regulation because the following subparts apply: - Unit FUG is subject to NSPS OOOOb when the rule is promulgated. - Units ENG-1 Through ENG-8 are subject to JJJJ and will be subject to NSPS OOOOb when the rule is promulgated.
NSPS 40 CFR60.40a, Subpart Da	Subpart Da, Performance Standards for **Electric Utility Steam Generating Units**	No	N/A	This facility does not have any fossil-fuel-fired steam generator with a heat input rate greater than 250 MMBtu/hr.

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
NSPS 40 CFR60.40b Subpart Db	**Electric Utility Steam Generating Units**	No	N/A	This 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	This facility does not have any steam generating units.
NSPS 40 CFR 60, Subpart Ka	Standards of Performance for **Storage Vessels for Petroleum Liquids** for which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and **Prior** to July 23, 1984	No	N/A	This regulation establishes performance standards for storage vessels for petroleum liquids for which construction, reconstruction, or modification commenced after May 18, 1978, and prior to July 23, 1984. The tanks at the facility, which are regulated emission sources, are 400 bbl (16,800 gallons) and 750 bbl (31,500 gallons). The capacities of the tanks at the facility are less than 40,000 gallons and are not subject to this regulation. [40 CFR Part 60.110a(a)]
NSPS 40 CFR 60, Subpart Kb	Standards of Performance for **Volatile Organic Liquid Storage Vessels** (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced **After** July 23, 1984	No	N/A	This regulation establishes performance standards for volatile organic liquid storage vessels (including petroleum liquid storage vessels) for which construction, reconstruction, or modification commenced after July 23, 1984. This facility does not have any storage vessels with a capacity greater than or equal to 75 cubic meters that were constructed, reconstructed or modified after July 23, 1984. This regulation is not applicable.
NSPS 40 CFR 60.330 Subpart GG	**Stationary Gas Turbines**	No	N/A	This facility does not have any stationary gas turbines. Thus, it is not subject to this rule.
NSPS 40 CFR 60, Subpart KKK	Leaks of VOC from **Onshore Gas Plants**	No	N/A	Affected Facility with Leaks of VOC from Onshore Gas Plants. Any affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after January 20, 1984, is subject to the requirements of this subpart. The location of this facility is not subject to this facility.
NSPS 40 CFR Part 60 Subpart LLL	Standards of Performance for **Onshore Natural Gas Processing**: SO_2 Emissions	No	N/A	This regulation establishes standards of performance for SO2 emissions from onshore natural gas processing for which construction, reconstruction, or modification of the amine sweetening unit commenced after January 20, 1984 and on or before August 23, 2011. This facility does not have any amine sweetening unit and is not subject to this regulation.

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
NSPS 40 CFR Part 60 Subpart OOOO	Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution for which construction, modification or reconstruction commenced after August 23, 2011 and before September 18, 2015	No	N/A	This facility is not constructed yet. Thus, it is exempt of this regulation.
NSPS 40 CFR Part 60 Subpart OOOOa	Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced **After** September 18, 2015 and before November 15, 2021.	No	N/A	This facility will be constructed after November 15, 2021. Thus, this is not subject to this regulation.
NSPS 40 CFR Part 60 Subpart OOOOb	Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced **After** November 15, 2021	Yes	ENG-1 Through ENG-8, FUG	This regulation is applicable to natural gas compressor stations constructed after November 15, 2021. The facility is subject to this regulation because the following subparts apply: - Unit FUG is subject to NSPS OOOOb when the rule is promulgated. - Units ENG-1 Through ENG-8 are subject to JJJJ and will be subject to NSPS OOOOb when the rule is promulgated.
NSPS 40 CFR 60 Subpart IIII	Standards of performance for Stationary Compression Ignition Internal Combustion Engines	No	N/A	This regulation does not apply as there is on stationary compression ignition internal combustion engines.
NSPS 40 CFR Part 60 Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	Yes	ENG-1 Through ENG-8	ENG-1 through ENG-8 are manufactured after June 12, 2006, and have maximum engine power greater than 500 HP. Thus, ENG-1 to ENG-8 are subject to this subpart.
NSPS 40 CFR 60 Subpart TTTT	Standards of Performance for Greenhouse Gas Emissions for	No	N/A	This facility does not generate any electricity and is exempt from this regulation.

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
	Electric Generating Units			
NSPS 40 CFR 60 Subpart UUUU	Emissions Guidelines for Greenhouse Gas Emissions and Compliance Times for Electric Utility Generating Units	No	N/A	This facility does not generate any electricity and is exempt from this regulation.
NSPS 40 CFR 60, Subparts WWW, XXX, Cc, and Cf	Standards of performance for Municipal Solid Waste (MSW) Landfills	No	N/A	This facility is not a landfill. Thus, this regulation does not apply.
NESHAP 40 CFR 61 Subpart A	General Provisions	No	N/A	This facility does not emit or have any triggering substances defined in NSPS 40 CFR Part 61. Therefore, any subpart of 40 CFR Part 60 is not applicable to this facility.
NESHAP 40 CFR 61 Subpart E	National Emission Standards for **Mercury**	No	N/A	This facility does not emit or have any triggering substances defined in NSPS 40 CFR Part 61. Therefore, any subpart of 40 CFR Part 60 is not applicable to this facility.
NESHAP 40 CFR 61 Subpart V	National Emission Standards for **Equipment Leaks** (Fugitive Emission Sources)	No	N/A	This regulation establishes national emission standards for equipment leaks (fugitive emission sources). The facility does not have equipment that operates in volatile hazardous air pollutant (VHAP) service [40 CFR Part 61.240]. The regulated activities subject to this regulation do not take place at this facility. The facility is not subject to this regulation
MACT 40 CFR 63, Subpart A	General Provisions	Yes	ENG-1 Through ENG-8,	The station includes equipment subject to requirements under 40 CFR Part 63 and will comply with the applicability rules as discussed in this section.
MACT 40 CFR 63.760 Subpart HH	**Oil and Natural Gas Production Facilities**	**Yes**	DEHY-1	The dehydrator (Unit DEHY-1) is located at an area source of HAPS and has the potential to emit less than 1 tpy (0.90 megagram per year) of benzene. Therefore, it is subject to the operating and recordkeeping requirements of §63.764(e)(1)(ii).
MACT 40 CFR 63 Subpart HHH		No	N/A	This facility is not a natural gas transmission or storage facility, as defined by this regulation. This regulation does not apply.
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 does not have any heaters or boilers on site; therefore, this regulation does not apply.
MACT 40 CFR 63 Subpart UUUUU	National Emission Standards for Hazardous Air Pollutants Coal & Oil Fire Electric	No	N/A	This subpart establishes national emission limitations and work practice standards for hazardous air pollutants (HAP) emitted from coal- and oil-fired electric utility steam generating units (EGUs) as defined in §63.10042 of this subpart. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations. This facility does not contain the affected units and is therefore not subject to this regulation.

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
	Utility Steam Generating Unit			
MACT 40 CFR 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (**RICE MACT**)	Yes	ENG-1 Through ENG-8	This regulation defines national emissions standards for HAPs from stationary reciprocating Internal Combustion Engines. The engines (ENG-1 through ENG-8) are subject to MACT ZZZZ and comply by following the requirements of NSPS JJJJ.
40 CFR 64	**Compliance Assurance Monitoring**	No	N/A	This facility is submitting an application pursuant of 20.2.72.200A.(1) NMAC for a NSR permit. Thus, this regulation does not apply.
40 CFR 68	**Chemical Accident Prevention**	Yes	Facility	The facility has more than a threshold quantity of a regulated substance in a process, as determined under §68.115. The owner will comply by maintaining a Risk Management Plan.
Title IV – Acid Rain 40 CFR 72	**Acid Rain**	No	N/A	This facility does not generate commercial electric power or electric power for sale.
Title IV – Acid Rain 40 CFR 73	**Sulfur Dioxide** Allowance Emissions	No	N/A	This facility is not an acid rain source. This regulation does not apply.
Title IV-Acid Rain 40 CFR 75	**Continuous Emissions Monitoring**	No	N/A	This facility does not produce commercial electricity for sale; therefore, this regulation does not apply.
Title IV – Acid Rain 40 CFR 76	**Acid Rain** Nitrogen Oxides **Emission Reduction Program**	No	N/A	This facility does not generate any electricity. Thus, it is exempt from this regulation.
Title VI – 40 CFR 82	Protection of **Stratospheric Ozone**	No	N/A	This facility will have appliances containing CFCs. The owner will use only certified technicians for the maintenance, service, repair and disposal of appliances to comply with this regulation.

Section 14

Operational Plan to Mitigate Emissions

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

☐ **Title V Sources** (20.2.70 NMAC)**:** By checking this box and certifying this application the permittee certifies that it has developed an **Operational Plan to Mitigate Emissions During Startups, Shutdowns, and Emergencies** defining the measures to be taken to mitigate source emissions during startups, shutdowns, and emergencies as required by 20.2.70.300.D.5(f) and (g) NMAC. This plan shall be kept on site to be made available to the Department upon request. This plan should not be submitted with this application.

☑ **NSR** (20.2.72 NMAC)**, PSD** (20.2.74 NMAC) **& Nonattainment** (20.2.79 NMAC) **Sources:** By checking this box and certifying this application the permittee certifies that it has developed an **Operational Plan to Mitigate Source Emissions During Malfunction, Startup, or Shutdown** defining the measures to be taken to mitigate source emissions during malfunction, startup, or shutdown as required by 20.2.72.203.A.5 NMAC. This plan shall be kept on site to be made available to the Department upon request. This plan should not be submitted with this application.

☑ **Title V** (20.2.70 NMAC)**, NSR** (20.2.72 NMAC)**, PSD** (20.2.74 NMAC) **& Nonattainment** (20.2.79 NMAC) **Sources:** By checking this box and certifying this application the permittee certifies that it has established and implemented a Plan to Minimize Emissions During Routine or Predictable Startup, Shutdown, and Scheduled Maintenance through work practice standards and good air pollution control practices as required by 20.2.7.14.A and B NMAC. This plan shall be kept on site or at the nearest field office to be made available to the Department upon request. This plan should not be submitted with this application.

Startup and shutdown procedures are either based on manufacturer's recommendations or based on Cotton Draw Midstream's experience with specific equipment. These procedures are designed to proactively address the potential for malfunction to the greatest extent possible. These procedures dictate a sequence of operations that are designed to minimize emissions from the facility during events that result in shutdown and subsequent startup.

Equipment located at this facility is equipped with various safety devices and features that aid in the prevention of excess emissions in the event of an operational emergency. If an operational emergency does occur and excess emissions occur, Cotton Draw Midstream, LLC. will submit the required Excess Emissions Report as per 20.2.7 NMAC. Corrective action to eliminate the excess emissions and prevent recurrence in the future will be undertaken as quickly as safety allows.

Section 15

Alternative Operating Scenarios

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

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

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

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

There are no alternative operating scenarios.

Section 16

Air Dispersion Modeling

1) Minor Source Construction (20.2.72 NMAC) and Prevention of Significant Deterioration (PSD) (20.2.74 NMAC) ambient impact analysis (modeling): Provide an ambient impact analysis as required at 20.2.72.203.A(4) and/or 20.2.74.303 NMAC and as outlined in the Air Quality Bureau's Dispersion Modeling Guidelines found on the Planning Section's modeling website. If air dispersion modeling has been waived for one or more pollutants, attach the AQB Modeling Section modeling waiver approval documentation.
2) SSM Modeling: Applicants must conduct dispersion modeling for the total short term emissions during routine or predictable startup, shutdown, or maintenance (SSM) using realistic worst case scenarios following guidance from the Air Quality Bureau's dispersion modeling section. Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (http://www.env.nm.gov/aqb/permit/app_form.html) for more detailed instructions on SSM emissions modeling requirements.
3) Title V (20.2.70 NMAC) ambient impact analysis: Title V applications must specify the construction permit and/or Title V Permit number(s) for which air quality dispersion modeling was last approved. Facilities that have only a Title V permit, such as landfills and air curtain incinerators, are subject to the same modeling required for preconstruction permits required by 20.2.72 and 20.2.74 NMAC.

What is the purpose of this application?	Enter an X for each purpose that applies
New PSD major source or PSD major modification (20.2.74 NMAC). See #1 above.	
New Minor Source or significant permit revision under 20.2.72 NMAC (20.2.72.219.D NMAC). See #1 above. **Note:** Neither modeling nor a modeling waiver is required for VOC emissions.	X
Reporting existing pollutants that were not previously reported.	
Reporting existing pollutants where the ambient impact is being addressed for the first time.	
Title V application (new, renewal, significant, or minor modification. 20.2.70 NMAC). See #3 above.	
Relocation (20.2.72.202.B.4 or 72.202.D.3.c NMAC)	
Minor Source Technical Permit Revision 20.2.72.219.B.1.d.vi NMAC for like-kind unit replacements.	
Other: i.e. SSM modeling. See #2 above.	
This application does not require modeling since this is a No Permit Required (NPR) application.	
This application does not require modeling since this is a Notice of Intent (NOI) application (20.2.73 NMAC).	
This application does not require modeling according to 20.2.70.7.E(11), 20.2.72.203.A(4), 20.2.74.303, 20.2.79.109.D NMAC and in accordance with the Air Quality Bureau's Modeling Guidelines.	

Check each box that applies:

☐ See attached, approved modeling **waiver for all** pollutants from the facility.

☐ See attached, approved modeling **waiver for some** pollutants from the facility.

☑ Attached in Universal Application Form 4 (UA4) is a **modeling report for all** pollutants from the facility.

☐ Attached in UA4 is a **modeling report for some** pollutants from the facility.

☐ No modeling is required.

Universal Application 4

Air Dispersion Modeling Report

Refer to and complete Section 16 of the Universal Application form (UA3) to assist your determination as to whether modeling is required. If, after filling out Section 16, you are still unsure if modeling is required, e-mail the completed Section 16 to the AQB Modeling Manager for assistance in making this determination. If modeling is required, a modeling protocol would be submitted and approved prior to an application submittal. The protocol should be emailed to the modeling manager. A protocol is recommended but optional for minor sources and is required for new PSD sources or PSD major modifications. Fill out and submit this portion of the Universal Application form (UA4), the "Air Dispersion Modeling Report", only if air dispersion modeling is required for this application submittal. This serves as your modeling report submittal and should contain all the information needed to describe the modeling. No other modeling report or modeling protocol should be submitted with this permit application.

16-A: Identification

1	Name of facility:	Songbird Compressor Station
2	Name of company:	Cotton Draw Midstream, LLC
3	Current Permit number:	N/A
4	Name of applicant's modeler:	Lynne Santos
5	Phone number of modeler:	978-376-1522
6	E-mail of modeler:	LSantos@trinityconsultants.com

16-B: Brief

1	Was a modeling protocol submitted and approved?	Yes☒	No☐
2	Why is the modeling being done?	New Facility	
3	Describe the permit changes relevant to the modeling.		
4	What geodetic datum was used in the modeling?	WGS84	
5	How long will the facility be at this location?	Longer than 1 year	
6	Is the facility a major source with respect to Prevention of Significant Deterioration (PSD)?	Yes☒	No☐
7	Identify the Air Quality Control Region (AQCR) in which the facility is located	155	

8	List the PSD baseline dates for this region (minor or major, as appropriate).			
	NO2	3/16/1988		
	SO2	7/28/1978		
	PM10	2/20/1979		
	PM2.5	11/13/2013		
9	Provide the name and distance to Class I areas within 50 km of the facility (300 km for PSD permits).			
	N/A			
10	Is the facility located in a non-attainment area? If so describe below		Yes☐	No☒
	N/A			
11	Describe any special modeling requirements, such as streamline permit requirements.			
	N/A			

16-C: Modeling History of Facility

Describe the modeling history of the facility, including the air permit numbers, the pollutants modeled, the National Ambient Air Quality Standards (NAAQS), New Mexico AAQS (NMAAQS), and PSD increments modeled. (Do not include modeling waivers).

	Pollutant	Latest permit and modification number that modeled the pollutant facility-wide.	Date of Permit	Comments
1	CO	N/A	N/A	
	NO_2	N/A	N/A	
	SO_2	N/A	N/A	
	H_2S	N/A	N/A	
	PM2.5	N/A	N/A	
	PM10	N/A	N/A	
	Lead	N/A	N/A	
	Ozone (PSD only)	N/A	N/A	
	NM Toxic Air Pollutants (20.2.72.402 NMAC)	N/A	N/A	

16-D: Modeling performed for this application

For each pollutant, indicate the modeling performed and submitted with this application.
Choose the most complicated modeling applicable for that pollutant, i.e., culpability analysis assumes ROI and cumulative analysis were also performed.

	Pollutant	ROI	Cumulative analysis	Culpability analysis	Waiver approved	Pollutant not emitted or not changed.
1	CO	☒	☐	☐	☐	☐
	NO_2	☒	☒	☐	☐	☐
	SO_2	☒	☒	☐	☐	☐
	H_2S	☐	☐	☐	☐	☐
	PM2.5	☒	☒	☐	☐	☐
	PM10	☒	☐	☐	☐	☐

	Lead	☐	☐	☐	☐	☒
	Ozone	☐	☐	☐	☐	☒
	State air toxic(s) (20.2.72.402 NMAC)	☐	☐	☐	☐	☒

16-E: New Mexico toxic air pollutants modeling

1	List any New Mexico toxic air pollutants (NMTAPs) from Tables A and B in 20.2.72.502 NMAC that are modeled for this application. N/A – No TAPs were not modeled at this facility.

2 List any NMTAPs that are emitted but not modeled because stack height correction factor. Add additional rows to the table below, if required. N/A

Pollutant	Emission Rate (pounds/hour)	Emission Rate Screening Level (pounds/hour)	Stack Height (meters)	Correction Factor	Emission Rate/ Correction Factor

16-F: Modeling options

1	Was the latest version of AERMOD used with regulatory default options? If not explain below.	Yes☒	No☐

16-G: Surrounding source modeling

1	Date of surrounding source retrieval	December 2022

2 If the surrounding source inventory provided by the Air Quality Bureau was believed to be inaccurate, describe how the sources modeled differ from the inventory provided. If changes to the surrounding source inventory were made, use the table below to describe them. Add rows as needed.

AQB Source ID	Description of Corrections

16-H: Building and structure downwash

1	How many buildings are present at the facility?	1	
2	How many above ground storage tanks are present at the facility?	7	
	Was building downwash modeled for all buildings and tanks? If not explain why below.	Yes☒	No☐

3		
4	Building comments	Buildings do not cause downwash

16-I: Receptors and modeled property boundary

1	"Restricted Area" is an area to which public entry is effectively precluded. Effective barriers include continuous fencing, continuous walls, or other continuous barriers approved by the Department, such as rugged physical terrain with a steep grade that would require special equipment to traverse. If a large property is completely enclosed by fencing, a restricted area within the property may be identified with signage only. Public roads cannot be part of a Restricted Area. A Restricted Area is required in order to exclude receptors from the facility property. If the facility does not have a Restricted Area, then receptors shall be placed within the property boundaries of the facility. Describe the fence or other physical barrier at the facility that defines the restricted area.		
	The property is enclosed by a fence and receptor are placed starting along the fenceline.		
2	Receptors must be placed along publicly accessible roads in the restricted area. Are there public roads passing through the restricted area?	Yes☐	No☒
3	Are restricted area boundary coordinates included in the modeling files?	Yes☐	No☒

4 Describe the receptor grids and their spacing. The table below may be used, adding rows as needed.

Grid Type	Shape	Spacing	Start distance from restricted area or center of facility	End distance from restricted area or center of facility	Comments
Variable Density	Circular	50	0	800	
Variable Density	Circular	100	800	3,000	
Variable Density	Circular	250	3,000	6,000	
Variable Density	Circular	500	6,000	10,000	
Variable Density	Circular	1,000	10,000	50,000	

5	Describe receptor spacing along the fence line. 25 m spacing
6	Describe the PSD Class I area receptors. N/A

16-J: Sensitive areas

	Are there schools or hospitals or other sensitive areas near the facility? If so describe below.	Yes☐	No☒

1	This information is optional (and purposely undefined) but may help determine issues related to public notice.		
3	The modeling review process may need to be accelerated if there is a public hearing. Are there likely to be public comments opposing the permit application?	Yes☐	No☒

16-K: Modeling Scenarios

1	Identify, define, and describe all modeling scenarios. Examples of modeling scenarios include using different production rates, times of day, times of year, simultaneous or alternate operation of old and new equipment during transition periods, etc. Alternative operating scenarios should correspond to all parts of the Universal Application and should be fully described in Section 15 of the Universal Application (UA3).		
	N/A		
2	Which scenario produces the highest concentrations? Why?		
	N/A		
3	Were emission factor sets used to limit emission rates or hours of operation? (This question pertains to the "SEASON", "MONTH", "HROFDY" and related factor sets, not to the factors used for calculating the maximum emission rate.)	Yes☐	No☒
4	If so, describe factors for each group of sources. List the sources in each group before the factor table for that group. (Modify or duplicate table as necessary. It's ok to put the table below section 16-K if it makes formatting easier.) Sources: N/A		

5	Hour of Day	Factor	Hour of Day	Factor								
	1		13									
	2		14									
	3		15									
	4		16									
	5		17									
	6		18									
	7		19									
	8		20									
	9		21									
	10		22									
	11		23									
	12		24									
	If hourly, variable emission rates were used that were not described above, describe them below.											
	N/A											

6	Were different emission rates used for short-term and annual modeling? If so describe below.	Yes☐	No☒
	N/A		

16-L: NO_2 Modeling

1	Which types of NO_2 modeling were used? Check all that apply.	
	☒	ARM2
	☐	100% NO_X to NO_2 conversion
	☐	PVMRM
	☐	OLM
	☐	Other:
2	Describe the NO_2 modeling.	
	The ARM2 Methodology was used with the default maximum and minimum ambient ratios.	
3	Were default NO_2/NO_X ratios (0.5 minimum, 0.9 maximum or equilibrium) used? If not describe and justify the ratios used below.	Yes☒ No☐
	N/A	
4	Describe the design value used for each averaging period modeled.	
	1-hour: High first high Annual: One Year Annual Average	

16-M: Particulate Matter Modeling

1	Select the pollutants for which plume depletion modeling was used.	
	☐	PM2.5
	☐	PM10
	☒	None
2	Describe the particle size distributions used. Include the source of information.	
	N/A	
3	Does the facility emit at least 40 tons per year of NO_X or at least 40 tons per year of SO_2? Sources that emit at least 40 tons per year of NO_X or at least 40 tons per year of SO_2 are considered to emit significant amounts of precursors and must account for secondary formation of PM2.5.	Yes☒ No☐
4	Was secondary PM modeled for PM2.5?	Yes☒ No☐

5 If MERPs were used to account for secondary PM2.5 fill out the information below. If another method was used describe below.

NO_X (ton/yr)	SO_2 (ton/yr)	$[PM2.5]_{annual}$	$[PM2.5]_{24\text{-hour}}$
58.6	30.1	0.00084	0.02784

16-N: Setback Distances

1	Portable sources or sources that need flexibility in their site configuration requires that setback distances be determined between the emission sources and the restricted area boundary (e.g. fence line) for both the initial location and future locations. Describe the setback distances for the initial location.
	N/A
2	Describe the requested, modeled, setback distances for future locations, if this permit is for a portable stationary source. Include a haul road in the relocation modeling.
	N/A

16-O: PSD Increment and Source IDs

1	The unit numbers in the Tables 2-A, 2-B, 2-C, 2-E, 2-F, and 2-I should match the ones in the modeling files. Do these match? If not, provide a cross-reference table between unit numbers if they do not match below.	Yes☐	No☒

Unit Number in UA-2	Unit Number in Modeling Files
FL-1 (SSM)	GK76H01P

2	The emission rates in the Tables 2-E and 2-F should match the ones in the modeling files. Do these match? If not, explain why below.	Yes☒	No☐
	N/A		
3	Have the minor NSR exempt sources or Title V Insignificant Activities" (Table 2-B) sources been modeled?	Yes☒	No☐

4 Which units consume increment for which pollutants?

Unit ID	NO_2	SO_2	PM10	PM2.5
ENG-1	Yes	Yes	Yes	Yes
ENG-2	Yes	Yes	Yes	Yes
ENG-3	Yes	Yes	Yes	Yes
ENG-4	Yes	Yes	Yes	Yes
ENG-5	Yes	Yes	Yes	Yes
ENG-6	Yes	Yes	Yes	Yes
ENG-7	Yes	Yes	Yes	Yes
ENG-8	Yes	Yes	Yes	Yes
RBL-1	Yes	Yes	Yes	Yes
ECD-1	Yes	Yes	Yes	Yes
ECD-2	Yes	Yes	Yes	Yes
FL-1 (SSM)	Yes	Yes	Yes	Yes

5	PSD increment description for sources. (for unusual cases, i.e., baseline unit expanded emissions after baseline date).	N/A

6	Are all the actual installation dates included in Table 2A of the application form, as required? This is necessary to verify the accuracy of PSD increment modeling. If not please explain how increment consumption status is determined for the missing installation dates below.	Yes☒	No☐
	N/A		

16-P: Flare Modeling

1	For each flare or flaring scenario, complete the following			
	Flare ID (and scenario)	Average Molecular Weight	Gross Heat Release (cal/s)	Effective Flare Diameter (m)
	Flare (SSM)	22.7933 lb/lb mol	2.814	0.100584

16-Q: Volume and Related Sources

1	Were the dimensions of volume sources different from standard dimensions in the Air Quality Bureau (AQB) Modeling Guidelines? If not please explain how increment consumption status is determined for the missing installation dates below.	Yes☐	No☒
	N/A		
2	Describe the determination of sigma-Y and sigma-Z for fugitive sources.		
	N/A		
3	Describe how the volume sources are related to unit numbers. Or say they are the same.		
	N/A		
4	Describe any open pits.		
	N/A		
5	Describe emission units included in each open pit.		
	N/A		

16-R: Background Concentrations

1	Were NMED provided background concentrations used? Identify the background station used below. If non-NMED provided background concentrations were used describe the data that was used.	Yes☒	No☐
	CO: N/A		
	NO_2: Hobbs-Jefferson (350250008)		
	PM2.5: Hobbs-Jefferson (350450019)		
	PM10: Hobbs-Jefferson (350250008)		
	SO_2: Amarillo (483751025)		
	Other:		
	Comments:		
	Were background concentrations refined to monthly or hourly values? If so describe below.	Yes☐	No☒

2	N/A

16-S: Meteorological Data

1	Was NMED provided meteorological data used? If so select the station used. Hobbs	Yes☒	No☐
2	If NMED provided meteorological data was not used describe the data set(s) used below. Discuss how missing data were handled, how stability class was determined, and how the data were processed.		
	N/A		

16-T: Terrain

1	Was complex terrain used in the modeling? If not, describe why below.	Yes☒	No☐
2	What was the source of the terrain data?		
	https://apps.nationalmap.gov/downloader/#/		

16-U: Modeling Files

1 Describe the modeling files:

File name (or folder and file name)	Pollutant(s)	Purpose (ROI/SIA, cumulative, culpability analysis, other)
SIL – NO2 SIL	NOX	SIL
SIL – NO2 SIL 2017	NOX	SIL Annual
SIL – NO2 SIL 2018	NOX	SIL Annual
SIL – NO2 SIL 2019	NOX	SIL Annual
SIL – NO2 SIL 2020	NOX	SIL Annual
SIL – NO2 SIL 2021	NOX	SIL Annual
SIL – NO2 SIL	NOX	CIA 1-HR
SIL – NO2 SIL 2017	NOX	CIA Annual
SIL – NO2 SIL 2018	NOX	CIA Annual
SIL – NO2 SIL 2019	NOX	CIA Annual
SIL – NO2 SIL 2020	NOX	CIA Annual
SIL – NO2 SIL 2021	NOX	CIA Annual
Increment – NO2 INC 2017	NOX	PSD Class II
Increment – NO2 INC 2018	NOX	PSD Class II
Increment – NO2 INC 2019	NOX	PSD Class II
Increment – NO2 INC 2020	NOX	PSD Class II
Increment – NO2 INC 2021	NOX	PSD Class II

	SIL – CO SIL	CO	SIL
	SIL – SO2 SIL 24hr, SO2 SIL 1hr, SO2 SIL 3hr	SO2	SIL
	SIL – SO2 SIL 2017	SO2	SIL Annual
	SIL – SO2 SIL 2018	SO2	SIL Annual
	SIL – SO2 SIL 2019	SO2	SIL Annual
	SIL – SO2 SIL 2020	SO2	SIL Annual
	SIL – SO2 SIL 2021	SO2	SIL Annual
	SIL – SO2 SIL 2017	SO2	SIL Annual
	SIL – SO2 SIL 2018	SO2	SIL Annual
	SIL – SO2 SIL 2019	SO2	SIL Annual
	SIL – SO2 SIL 2020	SO2	SIL Annual
	SIL – SO2 SIL 2021	SO2	SIL Annual
	CIA – SO2 CIA	SO2	CIA 1-HR
	Increment – SO2 INC 2017	SO2	PSD Class II
	Increment – SO2 INC 2018	SO2	PSD Class II
	Increment – SO2 INC 2019	SO2	PSD Class II
	Increment – SO2 INC 2020	SO2	PSD Class II
	Increment – SO2 INC 2021	SO2	PSD Class II
	Increment – SO2 INC 3hr, SO2 INC 24hr	SO2	PSD Class II
	SIL - PM 10 SIL	PM10	SIL
	SIL - PM 10 SIL 2017	PM10	SIL Annual
	SIL - PM 10 SIL 2018	PM10	SIL Annual
	SIL - PM 10 SIL 2019	PM10	SIL Annual
	SIL - PM 10 SIL 2020	PM10	SIL Annual
	SIL - PM 10 SIL 2021	PM10	SIL Annual
	SIL – PM 2.5 SIL	PM2.5	SIL
	SIL – PM 2.5 SIL 2017	PM2.5	SIL Annual
	SIL – PM 2.5 SIL 2018	PM2.5	SIL Annual
	SIL – PM 2.5 SIL 2019	PM2.5	SIL Annual
	SIL – PM 2.5 SIL 2020	PM2.5	SIL Annual
	SIL – PM 2.5 SIL 2021	PM2.5	SIL Annual
	CIA – PM 2.5 24 hr CIA	PM2.5	CIA 24-HR
	CIA – PM 2.5 CIA 2017	PM2.5	CIA Annual
	CIA – PM 2.5 CIA 2018	PM2.5	CIA Annual
	CIA – PM 2.5 CIA 2019	PM2.5	CIA Annual
	CIA – PM 2.5 CIA 2020	PM2.5	CIA Annual
	CIA – PM 2.5 CIA 2021	PM2.5	CIA Annual
	Increment – PM2.5 INC 2017	PM2.5	PSD Class II
	Increment – PM2.5 INC 2018	PM2.5	PSD Class II
	Increment – PM2.5 INC 2019	PM2.5	PSD Class II
	Increment – PM2.5 INC 2020	PM2.5	PSD Class II
	Increment – PM2.5 INC 2021	PM2.5	PSD Class II
	Increment – PM2.5 INC, PM2.5 INC 24hr	PM2.5	PSD Class II

16-V: PSD New or Major Modification Applications			
1	A new PSD major source or a major modification to an existing PSD major source requires additional analysis. Was preconstruction monitoring done (see 20.2.74.306 NMAC and PSD Preapplication Guidance on the AQB website)?	Yes☐	No☒
2	If not, did AQB approve an exemption from preconstruction monitoring?	Yes☐	No☒
3	Describe how preconstruction monitoring has been addressed or attach the approved preconstruction monitoring or monitoring exemption.		
	N/A		
4	Describe the additional impacts analysis required at 20.2.74.304 NMAC.		
	N/A		
5	If required, have ozone and secondary PM2.5 ambient impacts analyses been completed? If so describe below.	Yes☐	No☒

16-W: Modeling Results

1	If ambient standards are exceeded because of surrounding sources, a culpability analysis is required for the source to show that the contribution from this source is less than the significance levels for the specific pollutant. Was culpability analysis performed? If so describe below.	Yes☐	No☒
	N/A		
2	Identify the maximum concentrations from the modeling analysis. Rows may be modified, added and removed from the table below as necessary.		

Pollutant	Time Period	Standard	Modeled Facility Concentration (µg/m3)	Modeled Concentration with Surrounding Sources (µg/m3)	Secondary PM (µg/m3)	Background Concentration (µg/m3)	Cumulative Concentration (µg/m3)	Value of Standard (µg/m3)	Percent of Standard	Location		
										UTM E (m)	UTM N (m)	Elevation (ft)
CO	8-hr	SIL	24.59	-	-	-		500	4.92%	621285.6	3552812	3373.0
CO	1-hr	SIL	51.61	-	-	-		2000	2.58%	621504.6	3552994	3376.6
NO_2	Annual	SIL	2.73	-	-	-	-	1	272.00%	621360.61	3553115	3378.28
NO_2	24-hr	SIL	21.86	-	-	-	-	5	437.20%	621558.33	3553054	3376.64
NO_2	1-hr	SIL	96.17	-	-	-	-	7.52	1278.86%	621504.58	3552994	3376.64
NO_2	Annual	CIA	2.73	-	-	8.46	11.18	99.66	11.22%	621360.61	3553115	3378.28
NO_2	1-hr	CIA	96.17	-	-	60.78	156.95	188.03	83.47%	621504.6	3552994	3376.64
NO_2	Annual	INC	2.72	-	-	8.46	11.18	25	44.72%	621360.61	3553115	3378.28
$PM_{2.5}$	Annual	SIL	0.3155	-	-	-		0.2	157.7%	621360.61	3553115	3378.28
$PM_{2.5}$	24-hr	SIL	2.763	-	-	-		1.2	230.3%	621558.33	3553054	3376.64
$PM_{2.5}$	Annual	CIA		1.762	0.0008	-	1.763	12	14.69%	621376.41	3553122	3378.28
$PM_{2.5}$[1]	24-hr	CIA		5.942	0.0278	-	5.969	35	17.06%	621645.53	3553114	3376.97
$PM_{2.5}$	Annual	INC		1.762	0.0008	-	1.763	4	44.08%	621360.61	3553115	3378.28

$PM_{2.5}$[1]	24-hr	INC		2.42	0.0278	-	5.969	9	66.33%	621325.1	3552794	3372.70
PM_{10}	Annual	SIL	0.3154	-	-	-		1	31.55%	621360.61	3553115	3378.28
PM_{10}	24-hr	SIL	2.763	-	-	-		5	55.27%	621558.33	3553054	3376.64
SO_2	Annual	SIL	1.23	-	-	-	-	1	123.50%	621376.41	3553122	3378.28
SO_2	24-hr	SIL	12.41	-	-	-	-	5	248.3%	621558.33	3553054	3376.641
SO_2	3-hr	SIL	48.58	-	-	-	-	25	194.3%	621551.56	3552977	3378.28
SO_2	1-hr	SIL	54.86	-	-	-	-	7.8	703.4%	621504.58	3552994	3376.64
SO_2	1-hr	CIA		29.66	-	-	29.66	196.4	15.10%	621989.12	3552339	3366.8
SO_2	Annual	INC	1.236	-	-	0.7397	1.975	20	9.88%	621376.41	3553122	3378.281
SO_2	24-hr	INC	8.924	-	-	13.54	22.460	91	24.68%	621290.9	3552700	3370.735
SO_2	3-hr	INC	33.76	-	-	8.559	44.31	512	8.26%	621560.61	3553028	3375.984

[1] Note for the PM2.5 24-hour CIA run, the H1H was used instead of H8H, which is conservative.

16-X: Summary/conclusions	
1	A statement that modeling requirements have been satisfied and that the permit can be issued.
	The proposed Cotton Draw Midstream Songbird Compressor Station would neither cause nor contribute to an exceedance of the standards for CO, NO_2, $PM_{2.5}$, PM_{10}, and SO_2.

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.

NA- This facility has not been constructed yet.

Air Permit Application
Compliance History Disclosure Form

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

Permittee/Applicant Company Name		**Expected Application Submittal Date**
Cotton Draw Midstream, LLC		03/24/2023
Permittee/Company Contact	**Phone**	**Email**
Aaron Yotter	(405) 228-7270	aaron.yotter@dvn.com

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

Section 22: Certification

Company Name: Cotton Draw Midstream, LLC.

I, Aaron Yotter, 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 21 day of March, 2023, upon my oath or affirmation, before a notary of the State of Oklahoma.

*Signature

3/21/2023
Date

Aaron Yotter
Printed Name

EHS Professional
Title

RICK RIVERA NOTARY # 18007390 EXP. 07/25/26 PUBLIC STATE OF OKLAHOMA

Scribed and sworn before me on this 21 day of MARCH, 2023.

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

26 day of JULY, 2026.

Notary's Signature

03/21/2023
Date

RICK RIVERA
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