

Cirrus Consulting, LLC

August 20, 2021

Permitting Programs Manager
New Mexico Environment Department Air Quality Bureau
525 Camino de los Marquez, Suite 1
Santa Fe, New Mexico, 87505-1816

Re: Application to Renew **Title V Operating Permit P028-R4**
Harvest Four Corners, LLC – 29-6 #4 Central Delivery Point (CDP), A.I. No. 1013

Dear Madam or Sir,

On behalf of Harvest Four Corners, LLC (Harvest), Cirrus Consulting is pleased to submit this application to renew the Title V Operating Permit for the 29-6 #4 Central Delivery Point (CDP). The facility is authorized under Operating Permit P029-R4, as revised in P028-R4-M1 and –M2.

In accordance with the instructions in the NMAQB Universal Air Quality Permit Application, one hard copy original and one hard copy review copy are included. Two CDs containing the application electronic files are enclosed.

If any additional information is needed with regard to this application, please contact Ms. Jennifer Deal of Harvest at (505) 324-5128.

Sincerely,



Lisa Killion
Sr. Environmental Scientist

Enclosures – One (1) hard copy 29-6 #4 CDP Title V renewal application original
One (1) hard copy application review copy
Two (2) CDs, each containing the application electronic files

cc: Jennifer Deal, Harvest (electronic copy)
Bobby Myers, Cirrus (electronic copy)

**NEW MEXICO 20.2.70.300.B(2) NMAC APPLICATION
TO RENEW TITLE V OPERATING PERMIT P028-R4-M2**

29-6 #4 CENTRAL DELIVERY POINT (CDP)

Submitted By:



Harvest Four Corners, LLC

**1755 Arroyo Drive
Bloomfield, New Mexico 87413**

Prepared By:

Cirrus Consulting, LLC

**951 Diestel Road
Salt Lake City, Utah 84105
(801) 484-4412**

August 2021

Table of Contents

Section 1:	Facility Information
Section 2:	Tables
Section 3:	Application Summary
Section 4:	Process Flow Sheet
Section 5:	Plot Plan Drawn to Scale
Section 6:	All Calculations 6.a: Green House Gas Emissions
Section 7:	Information Used to Determine Emissions
Section 8:	Map(s)
Section 9:	Proof of Public Notice
Section 10:	Written Description of the Routine Operations of the Facility
Section 11:	Source Determination
Section 12:	PSD Applicability Determination for All Sources
Section 13:	Discussion Demonstrating Compliance with Each Applicable State & Federal Regulation
Section 14:	Operational Plan to Mitigate Emissions
Section 15:	Alternative Operating Scenarios
Section 16:	Air Dispersion Modeling
Section 17:	Compliance Test History
Section 18:	Addendum for Streamline Applications
Section 19:	Requirements for the Title V Program
Section 20:	Other Relevant Information
Section 21:	Addendum for Landfill Applications
Section 22:	Certification

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

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

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

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

Acknowledgements:

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

Citation: Please provide the **low level citation** under which this application is being submitted: **20.2.70.300.B(2) NMAC** (e.g. application for a new minor source would be 20.2.72.200.A NMAC, one example for a Technical Permit Revision is 20.2.72.219.B.1.b NMAC, a Title V acid rain application would be: 20.2.70.200.C NMAC)

Section 1 – Facility Information

Section 1-A: Company Information

		AI # if known (see 1 st 3 to 5 #s of permit IDEA ID No.): 1013	Updating Permit/NOI #: P028-R4-M2
1	Facility Name: 29-6 #4 Central Delivery Point (CDP)	Plant primary SIC Code (4 digits): 1389	
		Plant NAIC code (6 digits): 213112	
a	Facility Street Address (If no facility street address, provide directions from a prominent landmark): From Bloomfield, drive east on Hwy 64 to mile marker 95. The station is on the south side of the highway.		
2	Plant Operator Company Name: Harvest Four Corners, LLC	Phone/Fax: 505-632-4600 / 505-632-4782	
a	Plant Operator Address: 1755 Arroyo Drive, Bloomfield, NM 87413		

b	Plant Operator's New Mexico Corporate ID or Tax ID: 76-0451075	
3	Plant Owner(s) name(s): Harvest Four Corners, LLC	Phone/Fax: 505-632-4600 / 505-632-4782
a	Plant Owner(s) Mailing Address(s): 1755 Arroyo Drive, Bloomfield NM 87413	
4	Bill To (Company): Harvest Four Corners, LLC	Phone/Fax: 505-632-4600 / 505-632-4782
a	Mailing Address: 1755 Arroyo Drive, Bloomfield NM 87413	E-mail: N/A
5	<input type="checkbox"/> Preparer: <input checked="" type="checkbox"/> Consultant: Lisa Killion, Cirrus Consulting, LLC	Phone/Fax: 505-466-1790 / 505-466-4599
a	Mailing Address: c/o 951 Diestel Road, Salt Lake City, UT 84105	E-mail: killion@cirrusllc.com
6	Plant Operator Contact: Jennifer Deal	Phone/Fax: 505-324-5128 / 505-632-4782
a	Address: 1755 Arroyo Drive, Bloomfield NM 87413	E-mail: jdeal@harvestmidstream.com
7	Air Permit Contact: Jennifer Deal	Title: Environmental Specialist
a	E-mail: jdeal@harvestmidstream.com	Phone/Fax: 505-324-5128 / 505-632-4782
b	Mailing Address: 1755 Arroyo Drive, Bloomfield NM 87413	
c	The designated Air permit Contact will receive all official correspondence (i.e. letters, permits) from the Air Quality Bureau.	

Section 1-B: Current Facility Status

1.a	Has this facility already been constructed? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.b If yes to question 1.a, is it currently operating in New Mexico? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2	If yes to question 1.a, was the existing facility subject to a Notice of Intent (NOI) (20.2.73 NMAC) before submittal of this application? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes to question 1.a, was the existing facility subject to a construction permit (20.2.72 NMAC) before submittal of this application? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3	Is the facility currently shut down? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, give month and year of shut down (MM/YY):
4	Was this facility constructed before 8/31/1972 and continuously operated since 1972? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5	If Yes to question 3, has this facility been modified (see 20.2.72.7.P NMAC) or the capacity increased since 8/31/1972? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
6	Does this facility have a Title V operating permit (20.2.70 NMAC)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, the permit No. is: P-028-R4-M2
7	Has this facility been issued a No Permit Required (NPR)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, the NPR No. is:
8	Has this facility been issued a Notice of Intent (NOI)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, the NOI No. is:
9	Does this facility have a construction permit (20.2.72/20.2.74 NMAC)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, the permit No. is: 1073-M7 (as revised)
10	Is this facility registered under a General permit (GCP-1, GCP-2, etc.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, the register No. is:

Section 1-C: Facility Input Capacity & Production Rate

1	What is the facility's maximum input capacity, specify units (reference here and list capacities in Section 20, if more room is required)			
a	Current	Hourly: 2.7 mmcfh ^(a)	Daily: 65.3 mmcfd ^(a)	Annually: 23,835 mmcfy ^(a)
b	Proposed	Hourly: 2.7 mmcfh ^(a)	Daily: 65.3 mmcfd ^(a)	Annually: 23,835 mmcfy ^(a)
2	What is the facility's maximum production rate, specify units (reference here and list capacities in Section 20, if more room is required)			
a	Current	Hourly: 2.7 mmcfh ^(a)	Daily: 65.3 mmcfd ^(a)	Annually: 23,835 mmcfy ^(a)
b	Proposed	Hourly: 2.7 mmcfh ^(a)	Daily: 65.3 mmcfd ^(a)	Annually: 23,835 mmcfy ^(a)

^(a) Station capacity is a direct function of available horsepower. The throughput is therefore dependent on atmospheric temperature, gas temperature, atmospheric pressure, gas pressure, relative humidity and gas quality, as well as other factors. The "capacity" expressed in the application is a nominal quantity, neither an absolute maximum nor an average. The actual throughput will vary from the nominal amount.

Section 1-D: Facility Location Information

1	Section: 19	Range: 06W	Township: 29N	County: Rio Arriba	Elevation (ft): 6,286
2	UTM Zone: <input type="checkbox"/> 12 or <input checked="" type="checkbox"/> 13			Datum: <input type="checkbox"/> NAD 27 <input type="checkbox"/> NAD 83 <input checked="" type="checkbox"/> WGS 84	
a	UTM E (in meters, to nearest 10 meters): 276,970 m			UTM N (in meters, to nearest 10 meters): 4,065,010 m	
b	AND Latitude (deg., min., sec.): 36° 42' 16.6"			Longitude (deg., min., sec.): -107° 29' 48.4"	
3	Name and zip code of nearest New Mexico town: Navajo Dam, NM 87419				
4	Detailed Driving Instructions from nearest NM town (attach a road map if necessary): See Section 1-A.1.a.				
5	The facility is ~13.0 (distance) miles east-southeast (direction) of Navajo Dam, NM (nearest town).				
6	Status of land at facility (check one): <input checked="" type="checkbox"/> Private <input type="checkbox"/> Indian/Pueblo <input type="checkbox"/> Federal BLM <input type="checkbox"/> Federal Forest Service <input type="checkbox"/> Other (specify)				
7	List all municipalities, Indian tribes, and counties within a ten (10) mile radius (20.2.72.203.B.2 NMAC) of the property on which the facility is proposed to be constructed or operated: None; none; Rio Arriba Co., NM & San Juan Co., NM				
8	20.2.72 NMAC applications only : Will the property on which the facility is proposed to be constructed or operated be closer than 50 km (31 miles) to other states, Bernalillo County, or a Class I area (see www.env.nm.gov/aqb/modeling/class1areas.html)? <input type="checkbox"/> Yes <input type="checkbox"/> No (20.2.72.206.A.7 NMAC) If yes, list all with corresponding distances in kilometers: N/A				
9	Name nearest Class I area: Weminuche Wilderness				
10	Shortest distance (in km) from facility boundary to the boundary of the nearest Class I area (to the nearest 10 meters): 79.80 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: ~2,250 meters				
12	Method(s) used to delineate the Restricted Area: Fencing "Restricted Area" is an area to which public entry is effectively precluded. Effective barriers include continuous fencing, continuous walls, or other continuous barriers approved by the Department, such as rugged physical terrain with steep grade that would require special equipment to traverse. If a large property is completely enclosed by fencing, a restricted area within the property may be identified with signage only. Public roads cannot be part of a Restricted Area.				
13	Does the owner/operator intend to operate this source as a portable stationary source as defined in 20.2.72.7.X NMAC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No A portable stationary source is not a mobile source, such as an automobile, but a source that can be installed permanently at one location or that can be re-installed at various locations, such as a hot mix asphalt plant that is moved to different job sites.				
14	Will this facility operate in conjunction with other air regulated parties on the same property? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, what is the name and permit number (if known) of the other facility?				

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

1	Facility maximum operating ($\frac{\text{hours}}{\text{day}}$): 24	($\frac{\text{days}}{\text{week}}$): 7	($\frac{\text{weeks}}{\text{year}}$): 52	($\frac{\text{hours}}{\text{year}}$): 8,760
2	Facility's maximum daily operating schedule (if less than 24 $\frac{\text{hours}}{\text{day}}$)? Start: N/A		AM PM	End: N/A <input type="checkbox"/> AM <input type="checkbox"/> PM
3	Month and year of anticipated start of construction: N/A			
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? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			

Section 1-F: Other Facility Information

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

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

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

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

1	Responsible Official (R.O.) (20.2.70.300.D.2 NMAC): Travis Jones	Phone: 713-289-2630
a	R.O. Title: EH&S Manager	R.O. e-mail: trjones@harvestmidstream.com
b	R. O. Address: 1111 Travis Street, Houston, TX 77002	
2	Alternate Responsible Official (20.2.70.300.D.2 NMAC): TBD	Phone: TBD
a	A. R.O. Title: TBD	A. R.O. e-mail: TBD
b	A. R. O. Address: TBD	
3	Company's Corporate or Partnership Relationship to any other Air Quality Permittee (List the names of any companies that have operating (20.2.70 NMAC) permits and with whom the applicant for this permit has a corporate or partnership relationship): N/A	
4	Name of Parent Company ("Parent Company" means the primary name of the organization that owns the company to be permitted wholly or in part.): Hilcorp Energy Company	
a	Address of Parent Company: 1111 Travis Street, Houston, TX 77002	
5	Names of Subsidiary Companies ("Subsidiary Companies" means organizations, branches, divisions or subsidiaries, which are owned, wholly or in part, by the company to be permitted.): N/A	
6	Telephone numbers & names of the owners' agents and site contacts familiar with plant operations: N/A	
7	Affected Programs to include Other States, local air pollution control programs (i.e. Bernalillo) and Indian tribes: Will the property on which the facility is proposed to be constructed or operated be closer than 80 km (50 miles) from other states, local pollution control programs, and Indian tribes and pueblos (20.2.70.402.A.2 and 20.2.70.7.B)? If yes, state which ones and provide the distances in kilometers: Yes. Colorado, ~32.2 km; Navajo Nation Air Quality Control Program, ~19.3 km; Southern Ute Tribe, ~32.2 km; Jicarilla Apache Tribe, ~27.4 km; Ute Mountain Ute Tribe, ~78.9 km.	

Section 1-I – Submittal Requirements

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

Hard Copy Submittal Requirements:

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

Electronic files sent by (check one):

CD/DVD attached to paper application

secure electronic transfer. Air Permit Contact Name _____

Email _____

Phone number _____

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

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

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

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

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

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

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

Table of Contents

Section 1:	General Facility Information
Section 2:	Tables
Section 3:	Application Summary
Section 4:	Process Flow Sheet
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Section 21:	Addendum for Landfill Applications
Section 22:	Certification Page

Table 2-A: Regulated Emission Sources

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

Unit Number ¹	Source Description	Make	Model #	Serial #	Manufacturer's Rated Capacity ³ (Specify Units)	Requested Permitted Capacity ³ (Specify Units)	Date of Manufacture ²		Controlled by Unit #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB) ⁴	Replacing Unit No.
							Date of Construction/ Reconstruction ²	Emissions vented to Stack #					
1	Reciprocating I.C. Engine	Waukesha	7042 GL	TBD	1,232 hp	1,148 hp	TBD	N/A	20200202	X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced	4SLB	N/A
							TBD	1					
2	Reciprocating I.C. Engine	Waukesha	7042 GL	C-12588/8 (Pkg. X00099)	1,232 hp	1,148 hp	8/31/1998	N/A	20200202	X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced	4SLB	N/A
							8/31/1998	2					
3	Reciprocating I.C. Engine	Waukesha	7042 GL	C-61493/1 (Pkg. X00050)	1,232 hp	1,148 hp	12/14/1998	N/A	20200202	X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced	4SLB	N/A
							12/14/1998	3					
4	Reciprocating I.C. Engine	Waukesha	7042 GL	TBD	1,232 hp	1,148 hp	TBD	N/A	20200202	X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced	4SLB	N/A
							TBD	4					
5	Reciprocating I.C. Engine	Waukesha	7042 GL	297547 (Pkg. X00019)	1,232 hp	1,148 hp	5/17/1976	N/A	20200202	X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced	4SLB	N/A
							5/17/1976	5					
15	Reciprocating I.C. Engine	Waukesha	7042 GL	TBD	1,232 hp	1,148 hp	TBD	N/A	20200202	X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced	4SLB	N/A
							TBD	15					
16	Reciprocating I.C. Engine	Waukesha	7042 GL	C-10461/6 (Pkg. 76611)	1,232 hp	1,148 hp	12/16/1991	N/A	20200202	X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced	4SLB	N/A
							12/16/1991	16					
17	Reciprocating I.C. Engine	Waukesha	7042 GL	C-101985/3 (Pkg. X00395)	1,232 hp	1,148 hp	08/27/1993	N/A	20200202	X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced	4SLB	N/A
							8/27/1993	17					
SSM	Compressors & Associated Piping	N/A	N/A	N/A	N/A	N/A	N/A	N/A	--	X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced	N/A	N/A
							N/A	N/A					
11a	TEG Dehydrator Still Vent	TBD	TBD	TBD	12 mmscfd	12 mmscfd	TBD	N/A	31000227	X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced	N/A	N/A
							TBD	11a					
11b	TEG Dehydrator Reboiler	TBD	TBD	TBD	1208 scfd	1208 scfd	TBD	NA	31000228	X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced	N/A	N/A
							TBD	11b					
12a	TEG Dehydrator Still Vent	TBD	TBD	TBD	12 mmscfd	12 mmscfd	TBD	N/A	31000227	X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced	N/A	N/A
							TBD	12a					
12b	TEG Dehydrator Reboiler	TBD	TBD	TBD	1208 scfd	1208 scfd	TBD	NA	31000228	X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced	N/A	N/A
							TBD	12b					
13a	TEG Dehydrator Still Vent	Enertek	J2P12M749	4328	10 mmscfd	10 mmscfd	1/1/1991	N/A	31000227	X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced	N/A	N/A
							1/1/1991	13a					
13b	TEG Dehydrator Reboiler	Enertek	429 scfh	N/A	429 scfh	429 scfh	1/1/1991	NA	31000228	X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced	N/A	N/A
							1/1/1991	13b					

Unit Number ¹	Source Description	Make	Model #	Serial #	Manufact-urer's Rated Capacity ³ (Specify Units)	Requested Permitted Capacity ³ (Specify Units)	Date of Manufacture ²	Controlled by Unit #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB) ⁴	Replacing Unit No.
							Date of Construction/ Reconstruction ²	Emissions vented to Stack #				
14a	TEG Dehydrator Still Vent	Enertek	J2P12M749	41643	10 mmscfd	10 mmscfd	3/1/1992	N/A	31000227	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To be Replaced	N/A	N/A
							3/1/1992	14a				
14b	TEG Dehydrator Reboiler	Enertek	429 scfh	N/A	429 scfh	429 scfh	3/1/1992	NA	31000228	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To be Replaced	N/A	N/A
							3/1/1992	14b				
M1	Malfunction Emissions	N/A	N/A	N/A	N/A	N/A	N/A	N/A	--	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To be Replaced	N/A	N/A
							N/A	N/A				
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To be Replaced		
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To be Replaced		
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> New/Additional <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Removed <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To be Replaced		

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: Insignificant Activities¹ (20.2.70 NMAC) OR Exempted Equipment (20.2.72 NMAC)

All 20.2.70 NMAC (Title V) applications must list all Insignificant Activities in this table. All 20.2.72 NMAC applications must list Exempted Equipment in this table. If equipment listed on this table is exempt under 20.2.72.202.B.5, include emissions calculations and emissions totals for 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 <http://www.env.nm.gov/aqb/forms/InsignificantListTitleV.pdf>. TV sources may elect to enter both TV Insignificant Activities and Part 72 Exemptions on this form.

Unit Number	Source Description	Manufacturer	Model No.	Max Capacity	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5)	Date of Manufacture /Reconstruction ²	For Each Piece of Equipment, Check One	
			Serial No.	Capacity Units	Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Installation /Construction ²		
T1-T8	Lube Oil Storage Tanks		N/A	500 gal			X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced
			N/A	500 gal	Insignificant Activity List Item #5			
T9-T16	Used Lube Oil Storage Tanks		N/A	500 gal			X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced
			N/A	500 gal	Insignificant Activity List Item #5			
T17	Lube Oil Storage Tanks		J2P10M749	4200 gal			X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced
			4328	4200 gal	Insignificant Activity List Item #5			
T18	Used Lube Oil Storage Tanks		J2P10M749	6930 gal			X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced
			41643	6930 gal	Insignificant Activity List Item #5			
T19-T22	Triethylene Glycol Storage Tanks		NA	100 gal			X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced
			NA	100 gal	Insignificant Activity List Item #5			
T23-T26	Triethylene Glycol Storage Tanks		NA	50 gal			X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced
			NA	50 gal	Insignificant Activity List Item #5			
T27	Waste Water Storage Tank		NA	6930 gal			X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced
			1873	6930 gal	Insignificant Activity List Item #5			
T28	Produced Water Storage Tank		NA	12,600 gal			X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced
			1870	12,600 gal	Insignificant Activity List Item #1			
T29	Produced Water Storage Tank		NA	21,000 gal			X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced
			NA	21,000 gal	Insignificant Activity List Item #1			
T30	Antifreeze Storage Tank		NA	500 gal			X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced
			NA	500 gal	Insignificant Activity List Item #5			
F1	Fugitive Emissions		NA	NA			X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced
			1871	NA	Insignificant Activity List Item #1			
L1	Truck Loading Emissions (Produced Water)		NA	N/A			X Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit To be Replaced
			NA	N/A	Insignificant Activity List Item #1			
							Existing (unchanged) New/Additional To Be Modified	To be Removed Replacement Unit 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-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 ₂ S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
1	3.80	16.62	6.70	29.34	2.53	11.07	4.9E-03	2.1E-02	8.28E-02	0.36	8.28E-02	0.36	8.28E-02	0.36	-	-	-	-
2	3.80	16.62	6.70	29.34	2.53	11.07	4.9E-03	2.1E-02	8.28E-02	0.36	8.28E-02	0.36	8.28E-02	0.36	-	-	-	-
3	3.80	16.62	6.70	29.34	2.53	11.07	4.9E-03	2.1E-02	8.28E-02	0.36	8.28E-02	0.36	8.28E-02	0.36	-	-	-	-
4	3.80	16.62	6.70	29.34	2.53	11.07	4.9E-03	2.1E-02	8.28E-02	0.36	8.28E-02	0.36	8.28E-02	0.36	-	-	-	-
5	3.80	16.62	6.70	29.34	2.53	11.07	4.9E-03	2.1E-02	8.28E-02	0.36	8.28E-02	0.36	8.28E-02	0.36	-	-	-	-
15	3.80	16.62	6.70	29.34	2.53	11.07	4.9E-03	2.1E-02	8.28E-02	0.36	8.28E-02	0.36	8.28E-02	0.36	-	-	-	-
16	3.80	16.62	6.70	29.34	2.53	11.07	4.9E-03	2.1E-02	8.28E-02	0.36	8.28E-02	0.36	8.28E-02	0.36	-	-	-	-
17	3.80	16.62	6.70	29.34	2.53	11.07	4.9E-03	2.1E-02	8.28E-02	0.36	8.28E-02	0.36	8.28E-02	0.36	-	-	-	-
SSM ²	-	-	-	-	-	3.60	-	-	-	-	-	-	-	-	-	-	-	-
11a ²	-	-	-	-	1.90	8.30	-	-	-	-	-	-	-	-	-	-	-	-
11b	4.29E-02	0.19	3.25E-02	0.14	4.79E-03	2.10E-02	8.33E-04	3.65E-03	9.18E-03	4.02E-02	9.18E-03	4.02E-02	9.18E-03	4.02E-02	-	-	6.04E-07	2.65E-06
12a ²	-	-	-	-	1.90	8.30	-	-	-	-	-	-	-	-	-	-	-	-
12b	4.29E-02	0.19	3.25E-02	0.14	4.79E-03	2.10E-02	8.33E-04	3.65E-03	9.18E-03	4.02E-02	9.18E-03	4.02E-02	9.18E-03	4.02E-02	-	-	6.04E-07	2.65E-06
13a ²	-	-	-	-	1.80	8.10	-	-	-	-	-	-	-	-	-	-	-	-
13b	4.29E-02	0.19	1.79E-02	0.08	2.71E-03	1.19E-02	4.17E-04	1.83E-03	5.01E-03	2.19E-02	5.01E-03	2.19E-02	5.01E-03	2.19E-02	-	-	3.30E-07	1.44E-06
14a ²	-	-	-	-	1.80	8.10	-	-	-	-	-	-	-	-	-	-	-	-
14b	4.29E-02	0.19	1.79E-02	0.08	2.71E-03	1.19E-02	4.17E-04	1.83E-03	5.01E-03	2.19E-02	5.01E-03	2.19E-02	5.01E-03	2.19E-02	-	-	3.30E-07	1.44E-06
M1 ²	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	-	-
Totals	30.54	133.75	53.68	235.13	27.64	135.04	0.04	0.18	0.69	3.03	0.69	3.03	0.69	3.03	-	-	1.87E-06	8.18E-06

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 Requested Allowable Emissions are carried forward from Operating Permit P028-R4-M2; no changes to the existing permitted emission rates are proposed. Any emission calculations presented in section 6 that are lower than the above emission rates demonstrate compliance with the current permit limits.

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

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

All applications for facilities that have emissions during routine or predictable startup, shutdown or scheduled maintenance (SSM)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 ₂ S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
SSM ³	-	-	-	-	unspecified	3.6	-	-	-	-	-	-	-	-	-	-	-	-
M1 ³	-	-	-	-	unspecified	10.0	-	-	-	-	-	-	-	-	-	-	-	-
Totals	-	-	-	-	not specified	13.59	-	-	-	-	-	-	-	-	-	-	-	-

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).

³ The VOC emission rate is carried forward from the current permit (P027-R4).

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)			
1	1	V	N	22	667	101.3			123.8	1.02
2	2	V	N	22	667	101.3			123.8	1.02
3	3	V	N	22	667	101.3			123.8	1.02
4	4	V	N	22	667	101.3			123.8	1.02
5	5	V	N	22	667	101.3			123.8	1.02
15	15	V	N	22	667	101.3			123.8	1.02
16	16	V	N	22	667	101.3			123.8	1.02
17	17	V	N	22	667	101.3			123.8	1.02
11b	11b	V	N	18.1	600	1.8			5.1	0.67
12b	12b	V	N	18.1	600	1.8			5.1	0.67
13b	13b	V	N	18.1	600	1.8			5.1	0.67
14b	14b	V	N	18.1	600	1.8			5.1	0.67

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

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

Stack No.	Unit No.(s)	Total HAPs		Formaldehyde X HAP or TAP		Provide Pollutant Name Here HAP or TAP		Provide Pollutant Name Here HAP or TAP		Provide Pollutant Name Here HAP or TAP		Provide Pollutant Name Here HAP or TAP		Provide Pollutant Name Here HAP or TAP		Provide Pollutant Name Here HAP or TAP		Provide Pollutant Name Here HAP or TAP		
		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr
1	1	0.4	2.0	0.4	1.9															
2	2	0.4	2.0	0.4	1.9															
3	3	0.4	2.0	0.4	1.9															
4	4	0.4	2.0	0.4	1.9															
5	5	0.4	2.0	0.4	1.9															
15	15	0.4	2.0	0.4	1.9															
16	16	0.4	2.0	0.4	1.9															
17	17	0.4	2.0	0.4	1.9															
SSM	SSM	-	-	-	-															
11a	11a	-	-	-	-															
11b	11b	-	-	-	-															
12a	12a	-	-	-	-															
12b	12b	-	-	-	-															
13a	13a	-	-	-	-															
13b	13b	-	-	-	-															
13a	13a	-	-	-	-															
14b	14b	-	-	-	-															
M1	M1	-	-	-	-															
Totals:		3.6	15.7	3.4	14.9															

Table 2-J: Fuel

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

Unit No.	Fuel Type (low sulfur Diesel, ultra low sulfur diesel, Natural Gas, Coal, ...)	Fuel Source: purchased commercial, pipeline quality natural gas, residue gas, raw/field natural gas, process gas (e.g. SRU tail gas) or other	Specify Units				
			Lower Heating Value	Hourly Usage	Annual Usage	% Sulfur	% Ash
1	Natural Gas	Raw/Field Natural Gas	900 Btu/scf	9,213 scfh	80.71 mmscfy	--	--
2	Natural Gas	Raw/Field Natural Gas	900 Btu/scf	9,213 scfh	80.71 mmscfy	--	--
3	Natural Gas	Raw/Field Natural Gas	900 Btu/scf	9,213 scfh	80.71 mmscfy	--	--
4	Natural Gas	Raw/Field Natural Gas	900 Btu/scf	9,213 scfh	80.71 mmscfy	--	--
5	Natural Gas	Raw/Field Natural Gas	900 Btu/scf	9,213 scfh	80.71 mmscfy	--	--
15	Natural Gas	Raw/Field Natural Gas	900 Btu/scf	9,213 scfh	80.71 mmscfy	--	--
16	Natural Gas	Raw/Field Natural Gas	900 Btu/scf	9,213 scfh	80.71 mmscfy	--	--
17	Natural Gas	Raw/Field Natural Gas	900 Btu/scf	9,213 scfh	80.71 mmscfy	--	--
11b	Natural Gas	Raw/Field Natural Gas	900 Btu/scf	1,208 scfh	10.58 mmscfy	--	--
12b	Natural Gas	Raw/Field Natural Gas	900 Btu/scf	1,208 scfh	10.58 mmscfy	--	--
13b	Natural Gas	Raw/Field Natural Gas	900 Btu/scf	659 scfh	5.77 mmscfy	--	--
14b	Natural Gas	Raw/Field Natural Gas	900 Btu/scf	659 scfh	5.77 mmscfy	--	--

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)
T1-T8	40400313	Lube Oil	Lube Oil	Insignificant source under Insignificant Activites List, Item No. 5 (Vapor pressure < 10 mm Hg)					
T9-T16	40400313	Used Lube Oil	Used Lube Oil	Insignificant source under Insignificant Activites List, Item No. 5 (Vapor pressure < 10 mm Hg)					
T17	40400313	Lube Oil	Lube Oil	Insignificant source under Insignificant Activites List, Item No. 5 (Vapor pressure < 10 mm Hg)					
T18	40400313	Used Lube Oil	Used Lube Oil	Insignificant source under Insignificant Activites List, Item No. 5 (Vapor pressure < 10 mm Hg)					
T19-T22	40705218	Triethylene Glycol	Triethylene Glycol	Insignificant source under Insignificant Activites List, Item No. 5 (Vapor pressure < 10 mm Hg)					
T23-T26	40705218	Triethylene Glycol	Triethylene Glycol	Insignificant source under Insignificant Activites List, Item No. 5 (Vapor pressure < 10 mm Hg)					
T27	40400313	Waste Water	Water; <1% lube oil	Insignificant source under Insignificant Activites List, Item No. 5 (Vapor pressure < 10 mm Hg)					
T28	40400315	Produced Water	Water; <1% hydrocarbon liquids	8.3	20.7974	64.94	0.3257	76.64	0.4801
T29	40400315	Produced Water	Water; <1% hydrocarbon liquids	8.3	20.7974	64.94	0.3257	76.64	0.4801
T30	31000299	Antifreeze	Ethylene Glycol	Insignificant source under Insignificant Activites List, Item No. 5 (Vapor pressure < 10 mm Hg)					

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

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

Note: 1.00 bbl = 0.159 M³ = 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)
Low pressure natural gas	C1-C6+	Gas	Throughput = 65.3 mmscfd ¹	High pressure natural gas	C1-C6+	Gas	Throughput = 65.3 mmscfd ¹
Produced water	H2O + trace of HC	Liquid	1,050,205 gal/yr	Produced water	H2O + trace of HC	Liquid	1,050,205 gal/yr

¹ The material processed and material produced are both a direct function of available horsepower. The material processing and production rates are therefore dependent on atmospheric temperature and pressure, gas temperature and pressure, relative humidity and gas quality, as well as other factors. The values expressed above are a nominal quantities (with a safety factor), neither an absolute maximum, nor an average. Actual values will vary from the nominal amount.

Table 2-P: Green House 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.

Unit No.		CO ₂ ton/yr	N ₂ O ton/yr	CH ₄ ton/yr	SF ₆ ton/yr	PFC/HFC ton/yr ²					Total GHG Mass Basis ton/yr ⁴	Total CO ₂ e ton/yr ⁵
Unit No.	GWPs¹	1	298	25	22,800	footnote 3						
1	mass GHG	4,709.5	0.0089	0.089							4709.6	-
	CO ₂ e	4,709.5	2.6	2.2							-	4714.38
2	mass GHG	4,709.5	0.0089	0.089							4709.6	-
	CO ₂ e	4,709.5	2.6	2.2							-	4714.4
3	mass GHG	4,709.5	0.0089	0.089							4709.6	-
	CO ₂ e	4,709.5	2.6	2.2							-	4714.38
4	mass GHG	4,709.5	0.0089	0.089							4709.61	-
	CO ₂ e	4,709.5	2.6	2.2							-	4714.4
5	mass GHG	4,709.5	0.0089	0.089							4709.61	-
	CO ₂ e	4,709.5	2.6	2.2							-	4714.4
15	mass GHG	4,709.5	0.0089	0.089							4709.61	-
	CO ₂ e	4,709.5	2.6	2.2							-	4714.4
16	mass GHG	4,709.5	0.0089	0.089							4709.61	-
	CO ₂ e	4,709.5	2.6	2.2							-	4714.4
17	mass GHG	4,709.5	0.0089	0.089							4709.6	-
	CO ₂ e	4,709.5	2.6	2.2							-	4714.4
SSM	mass GHG	123.1	-	178.6051							301.7	-
	CO ₂ e	123.1	-	4,465.1							-	4588.2
11a	mass GHG	328.9	-	1.1702							330.0	-
	CO ₂ e	328.9	-	29.3							-	358.1
11b	mass GHG	617.6	0.0012	0.0116							617.6	-
	CO ₂ e	617.6	0.3	0.3							-	618.3
12a	mass GHG	328.9	-	1.1702							330.0	-
	CO ₂ e	328.9	-	29.3							-	358.1

Unit No.		CO ₂ ton/yr	N ₂ O ton/yr	CH ₄ ton/yr	SF ₆ ton/yr	PFC/HFC ton/yr ²					Total GHG Mass Basis ton/yr ⁴	Total CO ₂ e ton/yr ⁵
Unit No.	GWPs ¹	1	298	25	22,800	footnote 3						
12b	mass GHG	617.6	0.0012	0.0116							617.6	-
	CO ₂ e	617.6	0.3	0.3							-	618.3
13a	mass GHG	328.8	-	1.1672							329.9	-
	CO ₂ e	328.8	-	29.2							-	357.9
13b	mass GHG	219.3	0.0004	0.0041							219.3	-
	CO ₂ e	219.3	0.1	0.1							-	219.6
14a	mass GHG	328.8	-	1.1672							329.9	-
	CO ₂ e	328.8	-	29.2							-	357.9
14b	mass GHG	219.3	0.0004	0.0							219.3	-
	CO ₂ e	219.3	0.1	0.1							-	219.6
M1	mass GHG	341.55	-	495.49							837.0	-
	CO ₂ e	341.55	-	12,387.14							-	12728.7
Storage tanks	mass GHG	0.0	-	0.0							0.0	-
	CO ₂ e	0.0	-	0.0							-	0.0
L1	mass GHG	0.0	-	0.0							0.0	-
	CO ₂ e	0.0	-	0.0							-	0.0
F1	mass GHG	12.5	-	18.18							30.7	-
	CO ₂ e	12.5	-	454.51							-	467.0
Recip Comp Venting	mass GHG	279.26	-	405.74							685.0	-
	CO ₂ e	279.26	-	10,143.51							-	10422.8
Pneum Dev Venting	mass GHG	76.4	-	110.67							187.0	-
	CO ₂ e	76.4	-	2,766.73							-	2843.1
Pneum Pump Venting	mass GHG	1.32	-	1.92							3.2	-
	CO ₂ e	1.32	-	47.99							-	49.3
Total ⁶	mass GHG	41,499.4	0.1	1,216.0							42,715.50	-
	CO ₂ e	41,499.4	22.1	30,400.4							-	71,921.92

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

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

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

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

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

Section 3

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.

Harvest Four Corners, LLC (Harvest) owns and operates the 29-6 #4 Central Delivery Point (CDP), a production field gathering system compressor station that pressurizes and dehydrates natural gas for transport through natural gas pipelines. The facility operates under the authority of Title V Operating Permit P028-R4 (issued on August 24, 2017) as administratively revised through P028-R4-M1 and -M2. This Title V Operating Permit renewal application is submitted under 20.2.70.300.B(2) of the New Mexico Administrative Code (NMAC).

The 29-6 #4 CDP is a production gathering field compressor station that pressurizes and dehydrates natural gas for transport through natural gas pipelines. The facility is permitted under Construction Permit 1073-M7, issued on June 21, 2011, as administratively revised.

Based on Potential To Emit (PTE), the facility is an area source of Hazardous Air Pollutants (HAP) under 40 CFR 63, subpart HH, *National Emission Standards for Hazardous Air Pollutants [NESHAP] for Oil and Gas Production Facilities*, and a major source of HAP as defined under 40 CFR 63, subpart ZZZZ, *NESHAP for Stationary Reciprocating Internal Combustion Engines*.

The facility is authorized to construct and operate the following emission sources:

- Eight 1,148 horsepower (hp) (site rated) Waukesha 7042GL natural gas-fired, reciprocating internal combustion engines (RICE), units 1 through 5 and 15 through 17, equipped with low speed turbochargers;
- Two 12 million cubic feet per day (mmscfd) triethylene glycol (TEG) dehydrators, units 11a/b and 12a/b;
- Two 10 mmscfd TEG dehydrators, units 13a/b and 14a/b;

- Volatile organic compound (VOC) emissions from compressors and associated piping blowdowns during routine and predictable startups, shutdowns and/or maintenance (SSM); and
- Up to 10 tons per year (tpy) of VOC emissions associated with facility-wide malfunctions (unit M1).

Unregulated/insignificant emission sources at the facility include VOC fugitive emissions from process piping leaks (valves, flanges, seals, etc.), unit F1; insignificant storage tanks; produced water truck loading activities (unit L1), and greenhouse gases (GHG) from reciprocating compressor venting, pneumatic devices, and pumps. The facility is authorized for continuous operation.

The facility is permitted for low speed (LS) turbochargers for each of the Waukesha 7042 GL RICE, units 1 through 5 and 15 through 17. The engine manufacturer's data for LS turbocharged operation (1,000 rpm) corresponds with a 1,232 hp baseline rating. However, a typo in the previous Title V Operating Permit renewal application, table 2-A identified the RICE as having a baseline rating of 1,478 hp prior to de-rating for site elevation. The typo (1,478 hp) carried through to Operating Permit P028-R4, Table 104.A, 'Maximum Capacity' for all of the RICE. The Table 104.A 'Permitted Capacity' correctly identifies the 1,148 hp site rating, and all corresponding RICE emission calculations were based on the correct hp rating. Table 2-A of this application cites the correct baseline (Maximum Capacity) low speed turbocharger rating of 1,232 hp.

Operating Permit P028-R4 identifies routine startups, shutdowns and routine maintenance emissions from compressors and piping as "SSM (1a-5a, 11a-14a)" (Table 107.A, Allowable SSM and Malfunction Emissions). This application simplifies the designated unit I.D. as "SSM".

The PTE for the TEG dehydrator still vents, fugitive emissions, SSM, and malfunction emissions are calculated utilizing an updated extended natural gas analysis sampled at the facility on April 20, 2021. The emission calculations in section 6 of the application demonstrate that the VOC emissions for the TEG dehydrator still vents (units 11a, 12a, 13a, and 14a) using the contemporary gas sample data are lower than the requested and currently permitted emission rates. Thus, the emission calculations demonstrate that the TEG dehydrator still vents continue to comply with the current permitted emissions, and the emissions of VOC in Table 2-E are brought forward from the current permit. *Harvest does not seek any changes to the current permitted equipment and emissions, including for the TEG dehydrator still vents.*

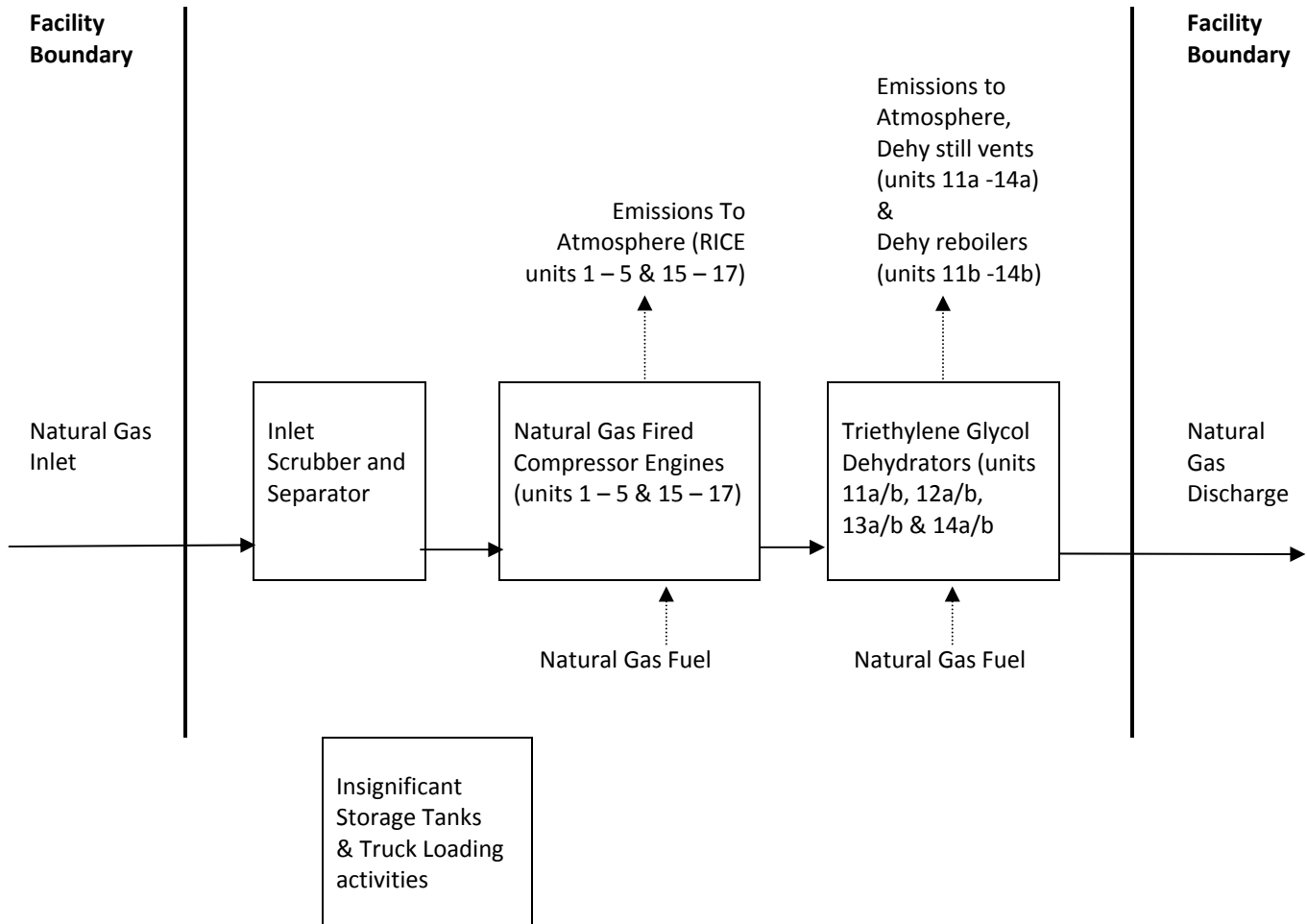
The facility-wide fugitive emissions of VOC, and all of the liquid storage tanks and associated truck loading activities at the facility are insignificant sources under the NMAQB Operating Permit Program List of Insignificant Activities. The regulatory justification for insignificance is noted for each unit in Table 2-B of the application.

Green house gas (GHG) emission calculations are provided. The GHG emissions reported in Table 2-P are based on the current extended gas analysis. The facility is subject to the requirements for GHG emissions reporting under 40 CFR 98, subpart W.

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.

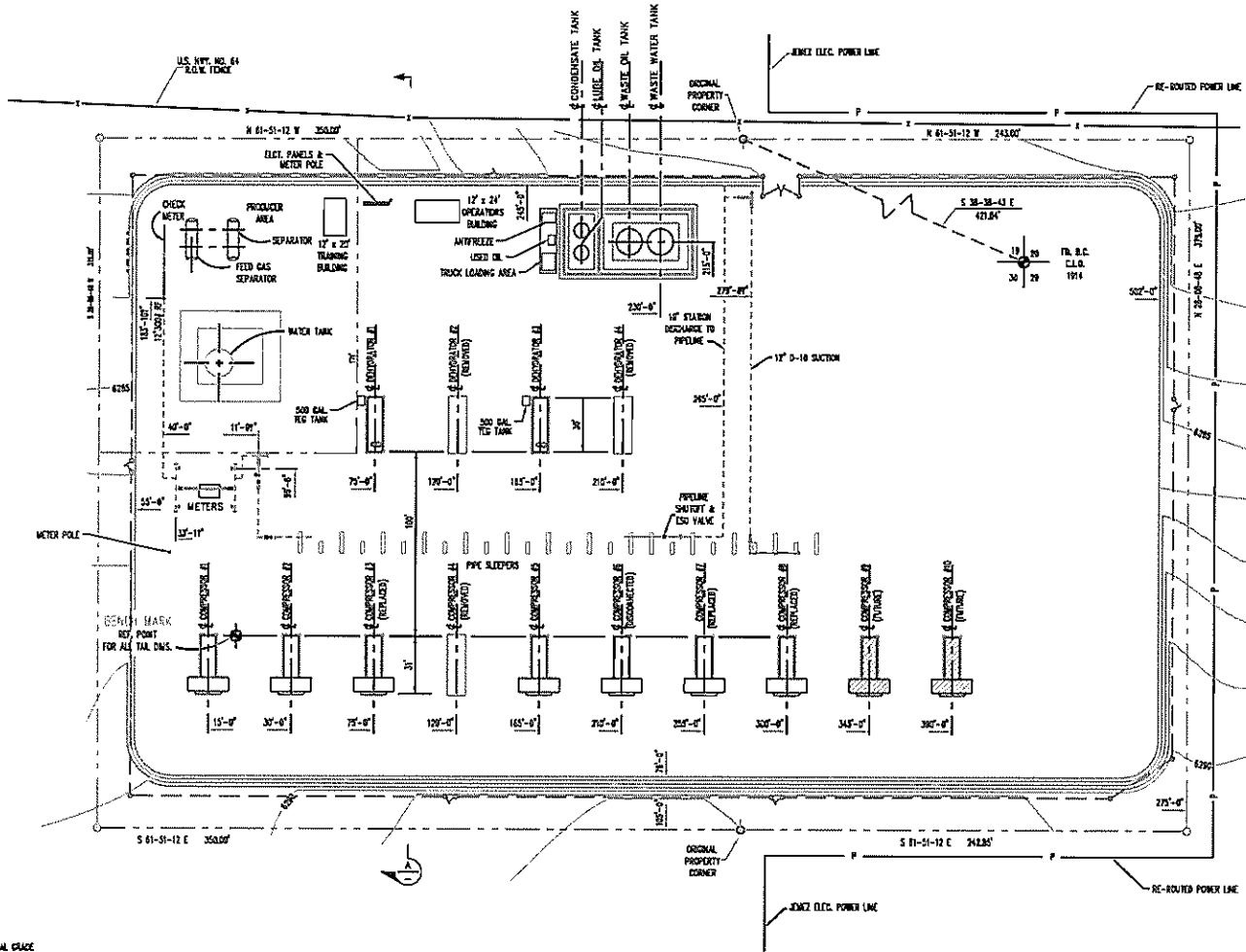


Section 5

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.

Please see the following page.



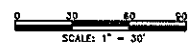
- NOTES:**
1. EXCAVATION AREA SHOWN IS AN APPROXIMATE AREA REQUIRED, AND MAY BE ADJUSTED AS REQUIRED BY ACTUAL FIELD CONDITIONS.
 2. DRAINAGE AND DIVERSION DAMS ARE TO BE CONSTRUCTED AS REQUIRED AFTER FINAL EXCAVATION AND GRADING IS COMPLETE.

ORIGINAL TRACT
 AREA = 131,249.96 Sq.Ft.
 OR 3.01 ACRES

NEW TRACT
 AREA = 131,249.96 Sq.Ft.
 OR 3.01 ACRES



PROFILE A-A
 VERTICAL SCALE EXPANDED 3:1



REVISED
 MAY 25, 2010
 DESTROY ALL
 PREVIOUS REVISIONS

NOTES:

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NO.	DATE	DESCRIPTION
11		REVISED PER PAID BALDWIN (APRIL '90) - UPDATED SITE PLAN
10	5/12/78	REVISED PER FIELD MARKING
9	6/23/78	REV. SIGHT PL. TO SEE PER ADDED 17' D-10 SECTION & REPLACED COMP. ST. PIP.
8	1/24/77	REPLACED COMPRESSOR UNIT (2)
7	8/24/76	
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MIDSTREAM GAS & LIQUIDS	
RAW-BURN 28-8-84 C.D.P.	
PLOT PLAN	
DESIGNED BY: HFM	PROJECT NO.: 307
DRAWN BY: JCK	DATE: 1/27/82
CHECKED BY: [Signature]	APPROVED BY: [Signature]
28-8-84-1-M1	

REFERENCE DRAWINGS

REVISIONS

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 rationale for why the others are reported as zero (or left blank in the SSM/GHG Tables). Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (http://www.env.nm.gov/aqb/permit/app_form.html) 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.

Reciprocating Engines

Emissions of nitrogen oxides (NO_x), carbon monoxide (CO) and volatile organic compound (VOC) from each of the reciprocating internal combustion engines (RICE), units 1 through 5 and 15 through 17, are calculated from engine manufacturer's data for low speed turbocharger operation (1,000 rpm) and the site-rated horsepower (hp) rating. Emissions of sulfur dioxide (SO₂) and particulate emissions are calculated from AP-42, Table 3.2-2 emission factors and the maximum fuel use of the engine. Hazardous air pollutant (HAP) emissions from the RICE are calculated with the GRI-HAPCalc 3.0 emissions estimation software. The emission calculations assume operation at full site capacity for 8,760 hours per year.

Each of the engines starts up with no load and a rich fuel mixture. As a result, emissions are minimized. Because an engine takes only minutes to reach the operating temperature of the engine, emissions during startup are not expected to exceed the steady-state allowable emission rate limits. There are no Environmental Protection Agency (EPA)-approved test methods available to measure emissions during startup.

Similarly, emissions during shut down do not exceed the steady-state allowable limits because fuel and air flow cease within seconds of shutdown. Emissions due to scheduled maintenance are negligible, as the engine is not in operation during maintenance.

The criteria pollutant emission calculations and GRI-HAPCalc 3.0 calculation output file are provided in this section.

Startup, Shutdown & Routine Maintenance (SSM) Emissions

Emissions associated with startups, shutdowns and routine maintenance from the compressors and piping (SSM) are vented to the atmosphere. SSM emissions from a compressor occur when high pressure gas is used to purge air from the compressor and associated piping prior to a startup. This gas is then vented to atmosphere. Also, after shutdowns, high pressure gas in the compressor(s) and associated piping is released to atmosphere as a safety precaution.

One common reason for compressor startup or shutdown is a change in the amount of compression required from the station due to fluctuations in the pipeline. To prolong the life of equipment and reduce engine emissions the compressors are shutdown when not needed. It is "routine or predictable" that the

compressors at the station will come on-line and drop off-line many times during the course of operation. It is also standard industry practice.

Compressors are also shut down for maintenance of the engine, compressor or other equipment at the station. This maintenance is scheduled based on time in service and/or monitoring of equipment (visual and automated) in accordance with company and standard industry practice. This maintenance is also “routine or predictable”.

The VOC and HAP emissions from blowdown of the compressors and piping associated with the facility are calculated from the station inlet extended natural gas sample analysis sampled on April 20, 2021, the quantity of gas vented during each event, and the estimated number of annual events. The quantity of gas vented during each blowdown event is determined by Harvest engineering. The annual number of blowdown events for the compressors are estimated from historical data. A safety factor is included in the emission calculation because experience indicates that the VOC and HAP composition of the natural gas in the pipeline varies over time, and because the annual number of blowdowns may also vary. The use of the safety factor is intended to ensure an adequate emissions limit that also includes any emissions from other non-blowdown miscellaneous startup, shutdown and maintenance activities.

The SSM emissions identified in this application are routine or predictable startup, shutdown and/or scheduled maintenance, and do not include malfunctions or upsets.

The SSM emission calculations are provided in this section.

Triethylene Glycol (TEG) Dehydrator Still Vents and Reboilers

A triethylene glycol (TEG) dehydration unit can be considered to consist of two emission units, a dehydrator still vent, and a dehydrator reboiler that is a small heater combustion source that provides heat to regenerate the rich TEG back to lean TEG. Therefore, the TEG dehydrator unit identification numbers have been divided into ‘a’ and ‘b’ sub-units to differentiate the dehydrator still vents (units 17a, 18a, 19a, 20a, 21a, 22a and 31a) from the dehydrator reboilers (units 11a, 12a, 13a and 14a) from the dehydrator reboilers (units 11b, 12b, 13b and 14b). The TEG dehydrators are permitted to operate continuously.

The PTE of VOC and HAP from the dehydrator still vents are calculated with GRI-GLYCalc 4.0 using the extended natural gas analysis discussed earlier, the maximum daily dehydrator gas throughput, and the maximum allowed glycol pump rate. The emission calculations assume operation at full capacity for 8,760 hours per year. The results of the GLYCalc analysis indicate that the calculated PTE using the contemporary extended natural gas analysis are below the current permitted levels for VOC, and that the dehydrators are in compliance with the emission limits. Harvest does not seek any changes to the currently permitted emissions to the units 11a, 12a, 13a, and 14a dehydrator still vent emissions. The requested allowable emissions shown in Table 2-E are brought forward from the existing permit.

Emissions of NO_x, CO, VOC and SO₂ from dehydrator reboiler units 11b, 12b, 13b, and 14b are calculated based on worst-case Enertek and Infab manufacturer emission factors. Particulate and lead emissions are calculated using AP-42 emission factors from Table 1.4-2. HAP emissions from the reboilers are calculated using GRI-HAPCalc 3.0 and the reboiler heat rate capacities.

During startup, the dehydrator reboiler is brought up to temperature before allowing glycol into the absorber. This prevents excess VOC and HAP from collecting in the glycol stream, and there are no excess startup emissions above those expected during steady-state operation. During shutdown, the reboiler is shut down in conjunction with the gas flow and glycol circulation. Again, this prevents excess VOC and HAP from collecting in the glycol stream, and there are no excess shutdown emissions above those expected during steady-state operation. Emissions due to scheduled maintenance are negligible; either the unit will not be in operation during maintenance, or maintenance is limited to tasks for which there are no excess emissions.

The GLYCalc input and output files, reboiler spreadsheet calculations, and HAPCalc output files are provided in this section.

Fugitive Emissions (Insignificant)

Fugitive emissions of VOC and HAP from equipment leaks (unit F1) are calculated using emission factors from Table 2.4 of the 1995 Protocol for Equipment Leak Emission Estimates published by the Environmental Protection Agency (EPA), equipment counts from Harvest, and the gas stream composition obtained from the extended gas analysis. The HAP components of the natural gas are derived from the species molar percentages in the natural gas. The calculated fugitive emissions of VOC are well below 1 ton per year, and the HAP emissions are below the Clean Air Act (CAA) section 112(g) HAP de minimus values. Therefore, the fugitive emissions are insignificant under the Title V Insignificant Activities List, Item 1.

Due to the nature of the source, it is estimated that SSM emissions from valves, connectors, seals, etc. are accounted for in the calculations.

The emission calculations are provided.

Storage Tanks (Insignificant)

All of the storage tanks at the 29-6 #4 CDP are considered insignificant sources under NMAQB's *Operating Permit Program List of Insignificant Activities* (March 24, 2005). As applicable for storage tanks with insignificance based on VOC emissions less than 1 ton per year (Insignificant Activity List Item #1), emission calculations of VOC are provided.

Consistent with previous permit applications, it is assumed that emissions from the largest storage tank of a given category (i.e., the largest produced water tank) results in the worst case emissions for any tank in that category. Therefore, a determination of insignificance for the largest storage tank also indicates insignificant emissions from smaller tanks with the same stored contents.

- There are two produced water storage tanks, unit T28 (12,600 gallons/ 300 barrels (bbl)) and unit T29 (21,000 gallons/ 500 bbl). In this instance, the largest produced water storage tank is the 21,000 gallon storage tank, unit T29. The TANKS 4.09d emission calculation is brought forward from a previous permit application, and assumes that the produced water is comprised of 99 percent (99%) water and one percent (1%) hydrocarbon liquid. The hydrocarbon liquid fraction (including VOC and HAP) is based on the GRI HAPCalc default speciation profile for natural gasoline. The aggregated VOC emissions from these tanks are well below 1 ton per year, and the HAP emissions are below the Clean Air Act (CAA) section 112(g) HAP de minimus values. The produced water storage tanks are insignificant sources under the Title V Insignificant Activities List, Item 1.
- The wastewater storage tank (unit T27) is assumed to contain one percent (1%) Residual Oil #6 and 99 percent (99%) water. As the vapor pressure of the hydrocarbon liquid component of the stored contents is well under 10 mm Hg (≈ 0.2 psia), the wastewater storage tank is an insignificant source under the Insignificant Activities List, Item No. 5.
- Residual Oil #6 is used to approximate the stored contents of the lube oil tanks (units T1 through T8, and T17) and the used lube oil storage tanks (units T9 through T16). The stored liquids have a vapor pressure of less than 10 mm Hg (≈ 0.2 psia); therefore, the lube oil and used lube oil storage tanks are insignificant under the Insignificant Activities List, Item No. 5.
- The antifreeze storage tank (unit T30) is assumed to contain an inhibited ethylene glycol coolant containing 50 percent ethylene glycol and 50 percent water. The vapor pressure of ethylene glycol is less than 10 mm Hg (≈ 0.2 psia); therefore, the unit T30 antifreeze tank is an insignificant source under Item No. 5 of the Insignificant Activities List.
- The vapor pressure of triethylene glycol (TEG) is less than 10 mm Hg (≈ 0.2 psia); therefore, TEG storage tank units T19 through T26 are insignificant under Item No. 5 of the Insignificant Activities List.

There are no flash emissions associated with any of the storage tanks.

Due to the nature of the operations, startup and shutdown emissions from the storage tanks are assumed to be accounted for in the storage tank emission estimates. Emissions due to maintenance will be negligible as the units will not be in operation.

Copies of the TANKS 4.0.9d emission calculations for the produced water and methanol storage tanks are provided.

Truck Loading Emissions (Insignificant)

Emissions of VOC and HAP from the produced water truck loading activities (unit L1) are estimated from emission factors from AP-42 Section 5.2, *Truck Loading* and the estimated maximum annual facility throughput, equivalent to sum of the throughputs for the individual produced water tanks. The emission calculations assume submerged loading during transfer operations.

The HAP constituent percentages for the produced water truck loading are based on the speciated HAP vapor mass fractions from the TANKS output file. The calculated emissions of VOC and HAPs from the produced water loading activities are well below 1 tpy; therefore, the unit L1 truck loading activities are insignificant under Item No. 1 of the Title V Insignificant Activities List.

The emission calculations are provided in this section.

Malfunctions

Malfunction (unit M1) emissions are set at 10 tons of VOC per year. Based on the gas release rate associated with the set emission rate, HAP emissions are estimated using the natural gas extended analysis described above.

The HAP calculations are provided in this section.

Facility Total Projected Emissions (Criteria Pollutants)

Company: **Harvest Four Corners, LLC**
 Facility: **29-6 #4 CDP**
 Date/Rev: **Aug. 2021; Rev.0**

Unit Number	Description	NOX,		CO,		VOC,		SOX,		PM,		PM10,		PM2.5,		H2S,		Lead,	
		pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy
1	Waukesha 7042GL compressor RICE	3.80	16.62	6.70	29.34	2.53	11.07	4.88E-03	2.14E-02	8.28E-02	3.63E-01	8.28E-02	3.63E-01	8.28E-02	3.63E-01	-	-	-	-
2	Waukesha 7042GL compressor RICE	3.80	16.62	6.70	29.34	2.53	11.07	4.88E-03	2.14E-02	8.28E-02	3.63E-01	8.28E-02	3.63E-01	8.28E-02	3.63E-01	-	-	-	-
3	Waukesha 7042GL compressor RICE	3.80	16.62	6.70	29.34	2.53	11.07	4.88E-03	2.14E-02	8.28E-02	3.63E-01	8.28E-02	3.63E-01	8.28E-02	3.63E-01	-	-	-	-
4	Waukesha 7042GL compressor RICE	3.80	16.62	6.70	29.34	2.53	11.07	4.88E-03	2.14E-02	8.28E-02	3.63E-01	8.28E-02	3.63E-01	8.28E-02	3.63E-01	-	-	-	-
5	Waukesha 7042GL compressor RICE	3.80	16.62	6.70	29.34	2.53	11.07	4.88E-03	2.14E-02	8.28E-02	3.63E-01	8.28E-02	3.63E-01	8.28E-02	3.63E-01	-	-	-	-
15	Waukesha 7042GL compressor RICE	3.80	16.62	6.70	29.34	2.53	11.07	4.88E-03	2.14E-02	8.28E-02	3.63E-01	8.28E-02	3.63E-01	8.28E-02	3.63E-01	-	-	-	-
16	Waukesha 7042GL compressor RICE	3.80	16.62	6.70	29.34	2.53	11.07	4.88E-03	2.14E-02	8.28E-02	3.63E-01	8.28E-02	3.63E-01	8.28E-02	3.63E-01	-	-	-	-
17	Waukesha 7042GL compressor RICE	3.80	16.62	6.70	29.34	2.53	11.07	4.88E-03	2.14E-02	8.28E-02	3.63E-01	8.28E-02	3.63E-01	8.28E-02	3.63E-01	-	-	-	-
SSM	Compressors & Associated Piping Blowdown	-	-	-	-	-	3.60	-	-	-	-	-	-	-	-	-	-	-	-
11a*	Dehydrator Still Vent (12 mmscfd)	-	-	-	-	0.1199	0.5252	-	-	-	-	-	-	-	-	-	-	-	-
11b	Dehydrator Reboiler (1208 scfh)	4.29E-02	1.88E-01	3.25E-02	1.42E-01	4.79E-03	2.10E-02	8.33E-04	3.65E-03	9.18E-03	4.02E-02	9.18E-03	4.02E-02	9.18E-03	4.02E-02	-	-	6.04E-07	2.65E-06
12a*	Dehydrator Still Vent (12 mmscfd)	-	-	-	-	0.1199	0.5252	-	-	-	-	-	-	-	-	-	-	-	-
12b	Dehydrator Reboiler (1208 scfh)	4.29E-02	1.88E-01	3.25E-02	1.42E-01	4.79E-03	2.10E-02	8.33E-04	3.65E-03	9.18E-03	4.02E-02	9.18E-03	4.02E-02	9.18E-03	4.02E-02	-	-	6.04E-07	2.65E-06
13a*	Dehydrator Still Vent (10 mmscfd)	-	-	-	-	0.1202	0.5265	-	-	-	-	-	-	-	-	-	-	-	-
13b	Dehydrator Reboiler (659 scfh)	4.29E-02	1.88E-01	1.79E-02	7.85E-02	2.71E-03	1.19E-02	4.17E-04	1.83E-03	5.01E-03	2.19E-02	5.01E-03	2.19E-02	5.01E-03	2.19E-02	-	-	3.30E-07	1.44E-06
14a*	Dehydrator Still Vent (10 mmscfd)	-	-	-	-	0.1202	0.5265	-	-	-	-	-	-	-	-	-	-	-	-
14b	Dehydrator Reboiler (659 scfh)	4.29E-02	1.88E-01	3.25E-02	1.42E-01	2.71E-03	1.19E-02	4.17E-04	1.83E-03	5.01E-03	2.19E-02	5.01E-03	2.19E-02	5.01E-03	2.19E-02	-	-	3.30E-07	1.44E-06
M1	Malfunction Emissions	-	-	-	-	-	10.00	-	-	-	-	-	-	-	-	-	-	-	-
T28, T29	Produced Water Storage Tanks <i>(insignificant)</i>	-	-	-	-	0.01	0.03	-	-	-	-	-	-	-	-	-	-	-	-
L1	Truck Loading - Produced Water <i>(insignificant)</i>	-	-	-	-	1.17	0.07	-	-	-	-	-	-	-	-	-	-	-	-
F1	Fugitive Emissions from Leaks <i>(insignificant)</i>	-	-	-	-	0.21	0.94	-	-	-	-	-	-	-	-	-	-	-	-
	Total	30.54	133.75	53.70	235.20	22.11	105.39	0.04	0.18	0.69	3.03	0.69	3.03	0.69	3.03	0.00	0.00	0.00	0.00

* Emission rates shown for the dehydrator still vents (units 11a, 12a, 13a, & 14a) are below the permitted emission rates, and are presented to demonstrate compliance with the existing emission rates.

Harvest is not seeking any changes to the current permitted equipment and emissions for the TEG dehydrator still vents

Facility Total Projected Emissions (HAPs)

Company: **Harvest Four Corners, LLC**
 Facility: **29-6 #4 CDP**
 Revision: **Aug. 2021; Rev.0**

Unit Number	Description	Total HAPs,		2,2,4-Trimethyl-pentane,		Acetaldehyde,		Benzene,		Ethylbenzene,		Formaldehyde,		n-Hexane,		Methanol,		Toluene,		Xylenes,	
		pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy
1	Waukesha 7042GL compressor RICE	0.4476	1.9604					1.32E-02	0.0576			0.4256	1.8640					5.32E-03	0.0233	3.54E-03	0.0155
2	Waukesha 7042GL compressor RICE	0.4476	1.9604					1.32E-02	0.0576			0.4256	1.8640					5.32E-03	0.0233	3.54E-03	0.0155
3	Waukesha 7042GL compressor RICE	0.4476	1.9604					1.32E-02	0.0576			0.4256	1.8640					5.32E-03	0.0233	3.54E-03	0.0155
4	Waukesha 7042GL compressor RICE	0.4476	1.9604					1.32E-02	0.0576			0.4256	1.8640					5.32E-03	0.0233	3.54E-03	0.0155
5	Waukesha 7042GL compressor RICE	0.4476	1.9604					1.32E-02	0.0576			0.4256	1.8640					5.32E-03	0.0233	3.54E-03	0.0155
15	Waukesha 7042GL compressor RICE	0.4476	1.9604					1.32E-02	0.0576			0.4256	1.8640					5.32E-03	0.0233	3.54E-03	0.0155
16	Waukesha 7042GL compressor RICE	0.4476	1.9604					1.32E-02	0.0576			0.4256	1.8640					5.32E-03	0.0233	3.54E-03	0.0155
17	Waukesha 7042GL compressor RICE	0.4476	1.9604					1.32E-02	0.0576			0.4256	1.8640					5.32E-03	0.0233	3.54E-03	0.0155
SSM	Compressors & Associated Piping Blowdown	0.00E+00	0.00E+00	-	0.00E+00			-	0.00E+00	-	0.00E+00	-	0.00E+00	-	0.00E+00	-	0.00E+00	-	0.00E+00	-	0.00E+00
11a*	Dehydrator Still Vent (12 mmscfd)	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11b	Dehydrator Reboiler (1208 scfh)	0.0029	0.0125	0.0000	0.0002	0.0003	0.0014					0.0001	0.0004	0.0019	0.0084	0.0005	0.0021				
12a*	Dehydrator Still Vent (12 mmscfd)	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12b	Dehydrator Reboiler (1208 scfh)	0.0029	0.0125	0.0000	0.0002	0.0003	0.0014					0.0001	0.0004	0.0019	0.0084	0.0005	0.0021				
13a*	Dehydrator Still Vent (10 mmscfd)	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13b	Dehydrator Reboiler (659 scfh)	0.0016	0.0068	0.0000	0.0001	0.0002	0.0008					0.0000	0.0002	0.0011	0.0046	0.0003	0.0011				
14a*	Dehydrator Still Vent (10 mmscfd)	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14b	Dehydrator Reboiler (659 scfh)	0.0016	0.0068	0.0000	0.0001	0.0002	0.0008					0.0000	0.0002	0.0011	0.0046	0.0003	0.0011				
M1	Malfunction Emissions	0.00E+00	0.00E+00		0.00E+00				0.00E+00		0.00E+00				0.00E+00				0.00E+00		0.00E+00
T28, T29	Produced Water Storage Tanks (insignificant)	0.0009	0.0038					0.0000	3.00E-05					0.0008	3.71E-03			0.0000	1.00E-05		
L1	Truck Loading - Produced Water (Insignificant)	0.0293	0.0018					0.0002	1.46E-05	0.0000	0.00E+00			0.0290	1.81E-03			0.0001	7.31E-06	0.0000	0.00E+00
F1	Fugitive Emissions from Leaks (insignificant)	0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total		3.62	15.73	0.00	0.00	0.00	0.00	0.11	0.46	0.00	0.00	3.40	14.91	0.04	0.03	0.00	0.01	0.04	0.19	0.03	0.12
		pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy
		Total HAPs,		2,2,4-Trimethyl-pentane,		Acetaldehyde,		Benzene,		Ethylbenzene,		Formaldehyde,		n-Hexane,		Methanol,		Toluene,		Xylenes,	

Engines-only HAP subtotal pph tpy 3.58 15.68 NESHAP ZZZZ major source (individual HAP (formaldehyde))

Dehydrator HAP subtotals pph tpy 0.01 0.04 Total HAP NESHAP HH area source (total subpart HH aggregated HAP <25 tpy, and any individual HAP <10 tpy)

(includes reboiler emissions)

Engine Exhaust Emissions Calculations

Unit Number: 1, 2, 3, 4, 5, 15, 16, & 17
 Description: Waukesha L7042GL

Note: The data on this worksheet applies to each individual emissions unit identified above.

Horsepower Calculations

6,280 ft above MSL	Elevation	Mfg. data
1,232 hp	Nameplate hp	NMAQB Procedure # 02.002-00
1,148 hp	NMAQB Site-rated hp	(loss of 3% for every 1,000 ft over 4,000 ft)
		Mfg. product bulletin Power Derate,
		S8154-6, April 2001
1,114 hp	Mfg. Site-rated hp	(loss of 2% for every 1,000 ft over 1,500 ft)

Engine Specifications

1000 rpm	Engine rpm	Mfg. data
7040 cu in	Engine displacement	Mfg. data
129.12 psi	BMEP	Mfg. data (+[(792,000 x NMAQB Site-rated hp) / (rpm * in^3)])

Fuel Consumption

7225 Btu/hp-hr	Brake specific fuel consumption	Mfg. data
8.29 MMBtu/hr	Hourly fuel consumption	Btu/hp-hr x NMAQB site-rated hp / 1,000,000
9,213 scf/hr	Hourly fuel consumption	MMBtu/hr x 1,000,000 / Btu/scf
8,760 hr/yr	Annual operating time	Harvest
72,639 MMBtu/yr	Annual fuel consumption	MMBtu/hr x hr/yr
80.71 MMscf/yr	Annual fuel consumption	scf/hr x hr/yr / 1,000,000
900 Btu/scf	Field gas heating value	Nominal heat content

Steady-State Emission Rates

Pollutants	Emission Factors, g/hp-hr	Uncontrolled Emission Rates,	
		pph	tpy
NOX	1.50	3.80	16.62
CO	2.65	6.70	29.34
VOC	1.00	2.53	11.07

NOX, CO & VOC emission factors (g/hp-hr) are based on Dresser-Waukesha spec sheet, 'Gas Engine Exhaust Emission Levels' (4/01) specification sheet, En: 125515 (Ref. S/8483), for a GL standard engine.

Uncontrolled Emission Rates (pph) = g/hp-hr x NMAQB Site-rated hp / 453.59 g/lb

Uncontrolled Emission Rates (tpy) = Uncontrolled Emission Rates (pph) x hr/yr / 2,000 lb/ton

Pollutants	Emission Factors, lb/MMBtu	Uncontrolled Emission Rates,	
		pph	tpy
SO2	5.88E-04	4.88E-03	2.14E-02
PM	9.99E-03	8.28E-02	3.63E-01
PM10	9.99E-03	8.28E-02	3.63E-01
PM2.5	9.99E-03	8.28E-02	3.63E-01

Emission factors taken from AP-42, Table 3.2-2

Particulate factors include both filterable and condensible emissions

Uncontrolled Emission Rates (pph) = lb/MMBtu x MMBtu/hr

Uncontrolled Emission Rates (tpy) = Uncontrolled Emission Rates (pph) x hr/yr / 2,000 lb/ton

Exhaust Parameters

667 °F	Stack exit temperature	Mfg. data (Low speed turbocharger, 1000 rpm)
6077 acfm	Stack flowrate	Mfg. data (Low speed turbocharger, 1000 rpm)
1.02 ft	Stack exit diameter	Harvest
0.82 ft^2	Stack exit area	3.1416 x ((ft / 2) ^2)
123.76 fps	Stack exit velocity	acfm / ft^2 / 60 sec/min
22.00 ft	Stack height	Harvest

GRI-HAPCalc® 3.01
Engines Report

Facility ID:	29-6 #4 CDP	Notes:	Waukesha 7042 GL RICE
Operation Type:	COMPRESSOR STATION		Low speed turbocharger
Facility Name:	29-6#4 CDP		1000 RPM
User Name:	Cirrus		1232 hp / 1148 hp (site rated)
Units of Measure:	U.S. STANDARD		

Note: Emissions less than 5.00E-09 tons (or tonnes) per year are considered insignificant and are treated as zero. These emissions are indicated on the report with a "0". Emissions between 5.00E-09 and 5.00E-05 tons (or tonnes) per year are represented on the report with "0.0000".

Engine Unit

Unit Name: 1-5, 15-17

Hours of Operation: 8,760 Yearly
Rate Power: 1,148 hp
Fuel Type: FIELD GAS
Engine Type: 4-Stroke, Lean Burn
Emission Factor Set: EPA > FIELD > LITERATURE
Additional EF Set: -NONE-

Calculated Emissions (ton/yr)

<u>Chemical Name</u>	<u>Emissions</u>	<u>Emission Factor</u>	<u>Emission Factor Set</u>
HAPs			
Formaldehyde	1.8640	0.16830000 g/bhp-hr	GRI Literature
Benzene	0.0576	0.00520000 g/bhp-hr	GRI Literature
Toluene	0.0233	0.00210000 g/bhp-hr	GRI Literature
Xylenes(m,p,o)	0.0155	0.00140000 g/bhp-hr	GRI Literature
Total	1.9604		

Compressor Blowdown Emissions Calculations

Unit Number: **SSM**
 Description: Compressor & Piping Associated With Station

Throughput

1098 events/yr
9,865 scf/event
 10,831,770 scf/yr

Blowdowns per year per unit
 Gas loss per blowdown
 Annual gas loss

Harvest
 Harvest
 # of units x events/yr/unit x scf/event

Emission Rates

Pollutants	Emission Factors, lb/scf	Uncontrolled, Emission Rates, tpy *
VOC	6.656E-04	3.60
2,2,4-Trimethylpentane	0.000E+00	0.00E+00
Benzene	0.000E+00	0.00E+00
Ethylbenzene	0.000E+00	0.00E+00
n-Hexane	0.000E+00	0.00E+00
Toluene	0.000E+00	0.00E+00
Xylene	0.000E+00	0.00E+00

Emission factors calculated from gas composition (see table below)

Uncontrolled Emission Rates (tpy) = scf/yr x lb/scf / 2,000 lb/ton

* The calculated emissions demonstrate compliance with the current permit limits and are not requested permit limits.

Gas Composition

Components	Mole Percents, %	Molecular Weights, lb/lb-mole	Emission Factors, lb/scf
Carbon dioxide	19.5971	44.01	2.273E-02
Hydrogen sulfide	0.0000	34.07	0.000E+00
Nitrogen	0.0826	28.01	6.098E-05
Methane	78.0041	16.04	3.298E-02
Ethane	1.7814	30.07	1.412E-03
Propane	0.4200	44.09	4.881E-04
Isobutane	0.0587	58.12	8.992E-05
n-Butane	0.0517	58.12	7.920E-05
Isopentane	0.0044	72.15	8.367E-06
n-Pentane	0.0000	72.15	0.000E+00
Cyclopentane	0.0000	70.14	0.000E+00
n-Hexane	0.0000	86.17	0.000E+00
Cyclohexane	0.0000	84.16	0.000E+00
Other hexanes	0.0000	86.18	0.000E+00
Heptanes	0.0000	100.20	0.000E+00
Methylcyclohexane	0.0000	98.19	0.000E+00
2,2,4-Trimethylpentane	0.0000	100.21	0.000E+00
Benzene	0.0000	78.11	0.000E+00
Toluene	0.0000	92.14	0.000E+00
Ethylbenzene	0.0000	106.17	0.000E+00
Xylenes	0.0000	106.17	0.000E+00
C8+ Heavies	0.0000	110.00	0.000E+00
Total	100.0000		
Total VOC			6.656E-04

Blended gas stream composition obtained from the 29-6 #4 Dehy Inlet gas analysis sampled Apr 20, 2021.

Emission Factors (lb/scf) = (% / 100) x lb/lb-mole / 379.4 scf/lb-mole

GRI-GLYCalc VERSION 4.0 - SUMMARY OF INPUT VALUES

Case Name: 29-6#4 12 mmcf/d dehyds PTE_EU 11 & 12
 File Name: C:\Users\user\Documents\Cirrus\Permit applications\New Mexico\Harvest Four
 Corners\0 0 29-6 #4\Title V\2021-Aug T5 renewal\Analyses & Info\GLYCalc\29-6 #4_12 mmcf/d
 dehyd PTE_Gas 04-20-2021.ddf
 Date: May 28, 2021

DESCRIPTION:

 Description: 29-6#4 12 mmcf/d dehyds 11 & 12
 Gas composition & op params from
 Extended gas analysis sample 04-20-2021

Annual Hours of Operation: 8760.0 hours/yr

WET GAS:

 Temperature: 84.00 deg. F
 Pressure: 915.00 psig
 Wet Gas Water Content: Saturated

Component	Conc. (vol %)
-----	-----
Carbon Dioxide	19.5971
Nitrogen	0.0826
Methane	78.0041
Ethane	1.7814
Propane	0.4200
Isobutane	0.0587
n-Butane	0.0517
Isopentane	0.0044

DRY GAS:

 Flow Rate: 12.0 MMSCF/day
 Water Content: 7.0 lbs. H₂O/MMSCF

LEAN GLYCOL:

 Glycol Type: TEG
 Water Content: 1.5 wt% H₂O
 Flow Rate: 3.5 gpm

PUMP:

 Glycol Pump Type: Gas Injection
 Gas Injection Pump Volume Ratio: 0.080 acfm gas/gpm glycol

FLASH TANK:

 Flash Control: Recycle/recompression
 Temperature: 70.4 deg. F

Pressure: 43.2 psig

Page: 2

GRI-GLYCalc VERSION 4.0 - AGGREGATE CALCULATIONS REPORT

Case Name: 29-6#4 12 mmcf/d dehyds PTE_EU 11 & 12
 File Name: C:\Users\user\Documents\Cirrus\Permit applications\New Mexico\Harvest Four
 Corners\0 0 29-6 #4\Title V\2021-Aug T5 renewal\Analyses & Info\GLYCalc\29-6 #4_12 mmcf/d
 dehyds PTE_Gas 04-20-2021.ddf
 Date: May 28, 2021

DESCRIPTION:

Description: 29-6#4 12 mmcf/d dehyds 11 & 12
 Gas composition & op params from
 Extended gas analysis sample 04-20-2021

Annual Hours of Operation: 8760.0 hours/yr

EMISSIONS REPORTS:

UNCONTROLLED REGENERATOR EMISSIONS

Component	lbs/hr	lbs/day	tons/yr
Methane	0.2665	6.396	1.1672
Ethane	0.0628	1.506	0.2749
Propane	0.0622	1.492	0.2723
Isobutane	0.0226	0.542	0.0990
n-Butane	0.0311	0.746	0.1362
Isopentane	0.0040	0.097	0.0177
Total Emissions	0.4492	10.780	1.9673
Total Hydrocarbon Emissions	0.4492	10.780	1.9673
Total VOC Emissions	0.1199	2.878	0.5252

FLASH GAS EMISSIONS

Note: Flash Gas Emissions are zero with the
 Recycle/recompression control option.

FLASH TANK OFF GAS

Component	lbs/hr	lbs/day	tons/yr
Methane	43.7987	1051.169	191.8383
Ethane	2.2958	55.098	10.0554
Propane	0.9049	21.716	3.9633
Isobutane	0.1840	4.416	0.8060
n-Butane	0.1798	4.316	0.7876
Isopentane	0.0182	0.436	0.0796
Total Emissions	47.3813	1137.152	207.5302
Total Hydrocarbon Emissions	47.3813	1137.152	207.5302
Total VOC Emissions	1.2869	30.885	5.6365

COMBINED REGENERATOR VENT/FLASH GAS EMISSIONS

Component	lbs/hr	lbs/day	tons/yr
Methane	0.2665	6.396	1.1672
Ethane	0.0628	1.506	0.2749
Propane	0.0622	1.492	0.2723
Isobutane	0.0226	0.542	0.0990
n-Butane	0.0311	0.746	0.1362
Isopentane	0.0040	0.097	0.0177
Total Emissions	0.4492	10.780	1.9673
Total Hydrocarbon Emissions	0.4492	10.780	1.9673
Total VOC Emissions	0.1199	2.878	0.5252

COMBINED REGENERATOR VENT/FLASH GAS EMISSION CONTROL REPORT:

Component	Uncontrolled tons/yr	Controlled tons/yr	% Reduction
Methane	193.0055	1.1672	99.40
Ethane	10.3304	0.2749	97.34
Propane	4.2356	0.2723	93.57
Isobutane	0.9049	0.0990	89.06
n-Butane	0.9238	0.1362	85.26
Isopentane	0.0973	0.0177	81.84
Total Emissions	209.4976	1.9673	99.06
Total Hydrocarbon Emissions	209.4976	1.9673	99.06
Total VOC Emissions	6.1617	0.5252	91.48

EQUIPMENT REPORTS:

ABSORBER

NOTE: Because the Calculated Absorber Stages was below the minimum allowed, GRI-GLYCalc has set the number of Absorber Stages to 1.25 and has calculated a revised Dry Gas Dew Point.

Calculated Absorber Stages: 1.25
 Calculated Dry Gas Dew Point: 1.61 lbs. H2O/MMSCF

Temperature: 84.0 deg. F
 Pressure: 915.0 psig
 Dry Gas Flow Rate: 12.0000 MMSCF/day
 Glycol Losses with Dry Gas: 0.0943 lb/hr
 Wet Gas Water Content: Saturated
 Calculated Wet Gas Water Content: 40.61 lbs. H2O/MMSCF
 Calculated Lean Glycol Recirc. Ratio: 10.77 gal/lb H2O

Component	Remaining in Dry Gas	Absorbed in Glycol
Water	3.95%	96.05%

Carbon Dioxide	99.58%	0.42%
Nitrogen	99.97%	0.03%
Methane	99.97%	0.03%
Ethane	99.90%	0.10%
Propane	99.84%	0.16%
Isobutane	99.78%	0.22%
n-Butane	99.71%	0.29%
Isopentane	99.71%	0.29%

FLASH TANK

Flash Control: Recycle/recompression
Flash Temperature: 70.4 deg. F
Flash Pressure: 43.2 psig

Component	Left in Glycol	Removed in Flash Gas
Water	99.95%	0.05%
Carbon Dioxide	10.34%	89.66%
Nitrogen	0.59%	99.41%
Methane	0.60%	99.40%
Ethane	2.66%	97.34%
Propane	6.43%	93.57%
Isobutane	10.94%	89.06%
n-Butane	14.74%	85.26%
Isopentane	18.39%	81.61%

REGENERATOR

No Stripping Gas used in regenerator.

Component	Remaining in Glycol	Distilled Overhead
Water	60.17%	39.83%
Carbon Dioxide	0.00%	100.00%
Nitrogen	0.00%	100.00%
Methane	0.00%	100.00%
Ethane	0.00%	100.00%
Propane	0.00%	100.00%
Isobutane	0.00%	100.00%
n-Butane	0.00%	100.00%
Isopentane	1.51%	98.49%

STREAM REPORTS:

WET GAS STREAM

Temperature: 84.00 deg. F
Pressure: 929.70 psia
Flow Rate: 5.01e+005 scfh

Component	Conc. (vol%)	Loading (lb/hr)
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Water	8.56e-002	2.03e+001
Carbon Dioxide	1.96e+001	1.14e+004
Nitrogen	8.25e-002	3.05e+001
Methane	7.79e+001	1.65e+004
Ethane	1.78e+000	7.07e+002
Propane	4.20e-001	2.44e+002
Isobutane	5.86e-002	4.50e+001
n-Butane	5.17e-002	3.96e+001
Isopentane	4.40e-003	4.19e+000
Total Components	100.00	2.90e+004

DRY GAS STREAM

Temperature: 84.00 deg. F
 Pressure: 929.70 psia
 Flow Rate: 5.00e+005 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	3.38e-003	8.03e-001
Carbon Dioxide	1.95e+001	1.13e+004
Nitrogen	8.27e-002	3.05e+001
Methane	7.81e+001	1.65e+004
Ethane	1.78e+000	7.06e+002
Propane	4.20e-001	2.44e+002
Isobutane	5.86e-002	4.49e+001
n-Butane	5.16e-002	3.95e+001
Isopentane	4.39e-003	4.18e+000
Total Components	100.00	2.89e+004

LEAN GLYCOL STREAM

Temperature: 84.00 deg. F
 Flow Rate: 3.50e+000 gpm

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.85e+001	1.94e+003
Water	1.50e+000	2.96e+001
Carbon Dioxide	2.44e-010	4.80e-009
Nitrogen	5.19e-014	1.02e-012
Methane	8.34e-018	1.64e-016
Ethane	1.63e-008	3.22e-007
Propane	8.00e-010	1.58e-008
Isobutane	1.52e-010	2.99e-009
n-Butane	1.47e-010	2.90e-009
Isopentane	3.13e-006	6.17e-005
Total Components	100.00	1.97e+003

RICH GLYCOL AND PUMP GAS STREAM

Temperature: 84.00 deg. F
 Pressure: 929.70 psia
 Flow Rate: 3.81e+000 gpm
 NOTE: Stream has more than one phase.

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.19e+001	1.94e+003
Water	2.33e+000	4.91e+001
Carbon Dioxide	3.55e+000	7.51e+001
Nitrogen	3.91e-003	8.27e-002
Methane	2.09e+000	4.41e+001
Ethane	1.12e-001	2.36e+000
Propane	4.58e-002	9.67e-001
Isobutane	9.78e-003	2.07e-001
n-Butane	9.98e-003	2.11e-001
Isopentane	1.05e-003	2.23e-002
Total Components	100.00	2.11e+003

FLASH TANK OFF GAS STREAM

Temperature: 70.43 deg. F
 Pressure: 57.90 psia
 Flow Rate: 1.66e+003 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	3.34e-002	2.63e-002
Carbon Dioxide	3.50e+001	6.73e+001
Nitrogen	6.72e-002	8.22e-002
Methane	6.25e+001	4.38e+001
Ethane	1.75e+000	2.30e+000
Propane	4.70e-001	9.05e-001
Isobutane	7.25e-002	1.84e-001
n-Butane	7.08e-002	1.80e-001
Isopentane	5.77e-003	1.82e-002
Total Components	100.00	1.15e+002

FLASH TANK GLYCOL STREAM

Temperature: 70.43 deg. F
 Flow Rate: 3.56e+000 gpm

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.71e+001	1.94e+003
Water	2.46e+000	4.91e+001
Carbon Dioxide	3.88e-001	7.76e+000
Nitrogen	2.43e-005	4.85e-004
Methane	1.33e-002	2.66e-001
Ethane	3.14e-003	6.28e-002
Propane	3.11e-003	6.22e-002
Isobutane	1.13e-003	2.26e-002
n-Butane	1.56e-003	3.11e-002
Isopentane	2.05e-004	4.10e-003
Total Components	100.00	2.00e+003

FLASH GAS EMISSIONS

Control Method: Recycle/recompression
 Control Efficiency: 100.00

Note: Flash Gas Emissions are zero with the
 Recycle/recompression control option.

REGENERATOR OVERHEADS STREAM

 Temperature: 212.00 deg. F
 Pressure: 14.70 psia
 Flow Rate: 4.87e+002 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	8.46e+001	1.96e+001
Carbon Dioxide	1.37e+001	7.76e+000
Nitrogen	1.35e-003	4.85e-004
Methane	1.29e+000	2.66e-001
Ethane	1.63e-001	6.28e-002
Propane	1.10e-001	6.22e-002
Isobutane	3.03e-002	2.26e-002
n-Butane	4.17e-002	3.11e-002
Isopentane	4.36e-003	4.04e-003
-----	-----	-----
Total Components	100.00	2.78e+001

GRI-GLYCalc VERSION 4.0 - SUMMARY OF INPUT VALUES

Case Name: 29-6#4 10 mmcf/d dehyds PTE_EU 13 & 14
 File Name: C:\Users\user\Documents\Cirrus\Permit applications\New Mexico\Harvest Four
 Corners\0 0 29-6 #4\Title V\2021-Aug T5 renewal\Analyses & Info\GLYCalc\29-6 #4_10 mmcf/d
 dehyd PTE_Gas 04-20-2021.ddf
 Date: May 28, 2021

DESCRIPTION:

 Description: 29-6#4 10 mmcf/d dehyds 13 & 14
 Gas composition & op params from
 Extended gas analysis sample 04-20-2021

Annual Hours of Operation: 8760.0 hours/yr

WET GAS:

 Temperature: 84.00 deg. F
 Pressure: 915.00 psig
 Wet Gas Water Content: Saturated

Component	Conc. (vol %)
Carbon Dioxide	19.5971
Nitrogen	0.0826
Methane	78.0041
Ethane	1.7814
Propane	0.4200
Isobutane	0.0587
n-Butane	0.0517
Isopentane	0.0044

DRY GAS:

 Flow Rate: 10.0 MMSCF/day
 Water Content: 7.0 lbs. H₂O/MMSCF

LEAN GLYCOL:

 Glycol Type: TEG
 Water Content: 1.5 wt% H₂O
 Flow Rate: 3.5 gpm

PUMP:

 Glycol Pump Type: Gas Injection
 Gas Injection Pump Volume Ratio: 0.080 acfm gas/gpm glycol

FLASH TANK:

 Flash Control: Recycle/recompression
 Temperature: 70.4 deg. F

Pressure: 43.2 psig

Page: 2

GRI-GLYCalc VERSION 4.0 - AGGREGATE CALCULATIONS REPORT

Case Name: 29-6#4 10 mmcf/d dehyds PTE_EU 13 & 14
 File Name: C:\Users\user\Documents\Cirrus\Permit applications\New Mexico\Harvest Four
 Corners\0 0 29-6 #4\Title V\2021-Aug T5 renewal\Analyses & Info\GLYCalc\29-6 #4_10 mmcf/d
 dehyds PTE_Gas 04-20-2021.ddf
 Date: May 28, 2021

DESCRIPTION:

Description: 29-6#4 10 mmcf/d dehyds 13 & 14
 Gas composition & op params from
 Extended gas analysis sample 04-20-2021

Annual Hours of Operation: 8760.0 hours/yr

EMISSIONS REPORTS:

UNCONTROLLED REGENERATOR EMISSIONS

Component	lbs/hr	lbs/day	tons/yr
Methane	0.2672	6.412	1.1702
Ethane	0.0633	1.518	0.2771
Propane	0.0623	1.495	0.2728
Isobutane	0.0227	0.544	0.0993
n-Butane	0.0312	0.749	0.1367
Isopentane	0.0041	0.097	0.0178
Total Emissions	0.4506	10.815	1.9738
Total Hydrocarbon Emissions	0.4506	10.815	1.9738
Total VOC Emissions	0.1202	2.885	0.5265

FLASH GAS EMISSIONS

Note: Flash Gas Emissions are zero with the
 Recycle/recompression control option.

FLASH TANK OFF GAS

Component	lbs/hr	lbs/day	tons/yr
Methane	43.7484	1049.961	191.6178
Ethane	2.2954	55.090	10.0539
Propane	0.9043	21.703	3.9608
Isobutane	0.1839	4.415	0.8057
n-Butane	0.1798	4.315	0.7874
Isopentane	0.0182	0.436	0.0796
Total Emissions	47.3300	1135.919	207.3053
Total Hydrocarbon Emissions	47.3300	1135.919	207.3053
Total VOC Emissions	1.2862	30.869	5.6335

COMBINED REGENERATOR VENT/FLASH GAS EMISSIONS

Component	lbs/hr	lbs/day	tons/yr
Methane	0.2672	6.412	1.1702
Ethane	0.0633	1.518	0.2771
Propane	0.0623	1.495	0.2728
Isobutane	0.0227	0.544	0.0993
n-Butane	0.0312	0.749	0.1367
Isopentane	0.0041	0.097	0.0178
Total Emissions	0.4506	10.815	1.9738
Total Hydrocarbon Emissions	0.4506	10.815	1.9738
Total VOC Emissions	0.1202	2.885	0.5265

COMBINED REGENERATOR VENT/FLASH GAS EMISSION CONTROL REPORT:

Component	Uncontrolled tons/yr	Controlled tons/yr	% Reduction
Methane	192.7880	1.1702	99.39
Ethane	10.3310	0.2771	97.32
Propane	4.2336	0.2728	93.56
Isobutane	0.9050	0.0993	89.03
n-Butane	0.9241	0.1367	85.21
Isopentane	0.0974	0.0178	81.77
Total Emissions	209.2791	1.9738	99.06
Total Hydrocarbon Emissions	209.2791	1.9738	99.06
Total VOC Emissions	6.1601	0.5265	91.45

EQUIPMENT REPORTS:

ABSORBER

NOTE: Because the Calculated Absorber Stages was below the minimum allowed, GRI-GLYCalc has set the number of Absorber Stages to 1.25 and has calculated a revised Dry Gas Dew Point.

Calculated Absorber Stages: 1.25
 Calculated Dry Gas Dew Point: 1.54 lbs. H2O/MMSCF

Temperature: 84.0 deg. F
 Pressure: 915.0 psig
 Dry Gas Flow Rate: 10.0000 MMSCF/day
 Glycol Losses with Dry Gas: 0.0786 lb/hr
 Wet Gas Water Content: Saturated
 Calculated Wet Gas Water Content: 40.61 lbs. H2O/MMSCF
 Calculated Lean Glycol Recirc. Ratio: 12.90 gal/lb H2O

Component	Remaining in Dry Gas	Absorbed in Glycol
Water	3.79%	96.21%

Carbon Dioxide	99.49%	0.51%
Nitrogen	99.96%	0.04%
Methane	99.96%	0.04%
Ethane	99.88%	0.12%
Propane	99.81%	0.19%
Isobutane	99.73%	0.27%
n-Butane	99.65%	0.35%
Isopentane	99.65%	0.35%

FLASH TANK

Flash Control: Recycle/recompression
Flash Temperature: 70.4 deg. F
Flash Pressure: 43.2 psig

Component	Left in Glycol	Removed in Flash Gas
Water	99.95%	0.05%
Carbon Dioxide	10.36%	89.64%
Nitrogen	0.59%	99.41%
Methane	0.61%	99.39%
Ethane	2.68%	97.32%
Propane	6.44%	93.56%
Isobutane	10.97%	89.03%
n-Butane	14.79%	85.21%
Isopentane	18.46%	81.54%

REGENERATOR

No Stripping Gas used in regenerator.

Component	Remaining in Glycol	Distilled Overhead
Water	64.40%	35.60%
Carbon Dioxide	0.00%	100.00%
Nitrogen	0.00%	100.00%
Methane	0.00%	100.00%
Ethane	0.00%	100.00%
Propane	0.00%	100.00%
Isobutane	0.00%	100.00%
n-Butane	0.00%	100.00%
Isopentane	1.50%	98.50%

STREAM REPORTS:

WET GAS STREAM

Temperature: 84.00 deg. F
Pressure: 929.70 psia
Flow Rate: 4.18e+005 scfh

Component	Conc. (vol%)	Loading (lb/hr)
-----------	--------------	-----------------

Water	8.56e-002	1.70e+001
Carbon Dioxide	1.96e+001	9.48e+003
Nitrogen	8.25e-002	2.54e+001
Methane	7.79e+001	1.38e+004
Ethane	1.78e+000	5.89e+002
Propane	4.20e-001	2.04e+002
Isobutane	5.86e-002	3.75e+001
n-Butane	5.17e-002	3.30e+001
Isopentane	4.40e-003	3.49e+000
Total Components	100.00	2.41e+004

DRY GAS STREAM

Temperature: 84.00 deg. F
 Pressure: 929.70 psia
 Flow Rate: 4.17e+005 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	3.25e-003	6.42e-001
Carbon Dioxide	1.95e+001	9.44e+003
Nitrogen	8.27e-002	2.54e+001
Methane	7.81e+001	1.38e+004
Ethane	1.78e+000	5.88e+002
Propane	4.20e-001	2.03e+002
Isobutane	5.86e-002	3.74e+001
n-Butane	5.16e-002	3.29e+001
Isopentane	4.39e-003	3.48e+000
Total Components	100.00	2.41e+004

LEAN GLYCOL STREAM

Temperature: 84.00 deg. F
 Flow Rate: 3.50e+000 gpm

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.85e+001	1.94e+003
Water	1.50e+000	2.96e+001
Carbon Dioxide	2.44e-010	4.81e-009
Nitrogen	5.21e-014	1.03e-012
Methane	8.36e-018	1.65e-016
Ethane	1.64e-008	3.23e-007
Propane	8.01e-010	1.58e-008
Isobutane	1.52e-010	3.00e-009
n-Butane	1.47e-010	2.90e-009
Isopentane	3.14e-006	6.19e-005
Total Components	100.00	1.97e+003

RICH GLYCOL AND PUMP GAS STREAM

Temperature: 84.00 deg. F
 Pressure: 929.70 psia
 Flow Rate: 3.80e+000 gpm
 NOTE: Stream has more than one phase.

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.20e+001	1.94e+003
Water	2.18e+000	4.59e+001
Carbon Dioxide	3.56e+000	7.51e+001
Nitrogen	3.91e-003	8.26e-002
Methane	2.09e+000	4.40e+001
Ethane	1.12e-001	2.36e+000
Propane	4.58e-002	9.67e-001
Isobutane	9.79e-003	2.07e-001
n-Butane	1.00e-002	2.11e-001
Isopentane	1.06e-003	2.23e-002
Total Components	100.00	2.11e+003

FLASH TANK OFF GAS STREAM

Temperature: 70.43 deg. F
 Pressure: 57.90 psia
 Flow Rate: 1.66e+003 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	3.12e-002	2.45e-002
Carbon Dioxide	3.50e+001	6.73e+001
Nitrogen	6.72e-002	8.21e-002
Methane	6.25e+001	4.37e+001
Ethane	1.75e+000	2.30e+000
Propane	4.70e-001	9.04e-001
Isobutane	7.25e-002	1.84e-001
n-Butane	7.09e-002	1.80e-001
Isopentane	5.77e-003	1.82e-002
Total Components	100.00	1.15e+002

FLASH TANK GLYCOL STREAM

Temperature: 70.43 deg. F
 Flow Rate: 3.55e+000 gpm

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.73e+001	1.94e+003
Water	2.30e+000	4.59e+001
Carbon Dioxide	3.90e-001	7.78e+000
Nitrogen	2.45e-005	4.88e-004
Methane	1.34e-002	2.67e-001
Ethane	3.17e-003	6.33e-002
Propane	3.12e-003	6.23e-002
Isobutane	1.14e-003	2.27e-002
n-Butane	1.56e-003	3.12e-002
Isopentane	2.06e-004	4.12e-003
Total Components	100.00	1.99e+003

FLASH GAS EMISSIONS

Control Method: Recycle/recompression
 Control Efficiency: 100.00

Note: Flash Gas Emissions are zero with the
 Recycle/recompression control option.

REGENERATOR OVERHEADS STREAM

 Temperature: 212.00 deg. F
 Pressure: 14.70 psia
 Flow Rate: 4.19e+002 scfh

Component	Conc. (vol%)	Loading (lb/hr)
-----	-----	-----
Water	8.21e+001	1.63e+001
Carbon Dioxide	1.60e+001	7.78e+000
Nitrogen	1.58e-003	4.88e-004
Methane	1.51e+000	2.67e-001
Ethane	1.90e-001	6.33e-002
Propane	1.28e-001	6.23e-002
Isobutane	3.53e-002	2.27e-002
n-Butane	4.86e-002	3.12e-002
Isopentane	5.08e-003	4.05e-003
-----	-----	-----
Total Components	100.00	2.46e+001

Dehydrator Reboiler Exhaust Emissions Calculations

Unit Number: **11b, 12b**
 Description: Dehydrator Reboiler (12 mmscfd)

Note: The data on this worksheet applies to each individual emissions unit identified above.

Fuel Consumption

1.087 MMBtu/hr	Capacity	scf/hr x Btu/scf / 1,000,000
1,208 scf/hr	Hourly fuel consumption	Mfg. data (Enertek)
8,760 hr/yr	Annual operating time	Harvest
9,524 MMBtu/yr	Annual fuel consumption	MMBtu/hr x hr/yr
10.58 MMscf/yr	Annual fuel consumption	scf/hr x hr/yr / 1,000,000
900 Btu/scf	Field gas heating value	Nominal heat content

Steady-State Emission Rates

Pollutants	Emission Factors, lb/day	Uncontrolled Emission Rates,	
		pph	tpy
NOX	1.03	4.29E-02	0.188
CO	0.78	3.25E-02	0.142
VOC	0.12	4.79E-03	2.10E-02
SO2	0.02	8.33E-04	3.65E-03

NOX emission factor taken from August 1994 Enertek Letter
 CO, TOC and SO2 emission factors taken from July 1998 InFab Letter
 VOC lb/day = 50% of TOC emissions, consistent with AP-42, Table 1.4-2
 Uncontrolled Emission Rates (pph) = lb/day / 24 hr/day
 Uncontrolled Emission Rates (tpy) = Uncontrolled Emission Rates (pph) x hr/yr / 2,000 lb/ton

Pollutants	Emission Factors, lb/MMscf	Uncontrolled Emission Rates,	
		pph	tpy
PM	7.60	9.18E-03	4.02E-02
PM10	7.60	9.18E-03	4.02E-02
PM2.5	7.60	9.18E-03	4.02E-02
Lead	5.00E-04	6.04E-07	2.65E-06

Emission factors taken from AP-42, Table 1.4-2
 Uncontrolled Emission Rates (pph) = lb/MMscf x (scf/hr / 1,000,000)
 Uncontrolled Emission Rates (tpy) = Uncontrolled Emission Rates (pph) x hr/yr / 2,000 lb/ton

Exhaust Parameters

600 °F	Exhaust temperature	Mfg. data (Enertek & InFab)
106.8 cfm	Stack flowrate	fps x ft ² x 60 sec/min
0.67 ft	Stack diameter	Mfg. data (InFab)
0.35 ft ²	Stack exit area	3.1416 x ((ft / 2) ^2)
5.1 fps	Stack velocity	Mfg. data (Enertek & InFab)

GRI-HAPCalc® 3.01
External Combustion Devices Report

Facility ID:	29-6 #4 CDP	Notes:	TEG Dehydrator Reboilers
Operation Type:	COMPRESSOR STATION		12 mmcf d dehy reboiler - 1208 scfh
Facility Name:	29-6 #4 CDP		10 mmcf d dehy reboiler - 659 scfh
User Name:	Cirrus		scfh
Units of Measure:	U.S. STANDARD		

Note: Emissions less than 5.00E-09 tons (or tonnes) per year are considered insignificant and are treated as zero. These emissions are indicated on the report with a "0". Emissions between 5.00E-09 and 5.00E-05 tons (or tonnes) per year are represented on the report with "0.0000".

External Combustion Devices

Unit Name: 1208 SCFH

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

Calculated Emissions (ton/yr)

<u>Chemical Name</u>	<u>Emissions</u>	<u>Emission Factor</u>	<u>Emission Factor Set</u>
HAPs			
3-Methylcholanthrene	0.0000	0.0000000018 lb/MMBtu	EPA
7,12-Dimethylbenz(a)anthracene	0.0000	0.0000000157 lb/MMBtu	EPA
Formaldehyde	0.0004	0.0000735294 lb/MMBtu	EPA
Methanol	0.0021	0.0004333330 lb/MMBtu	GRI Field
Acetaldehyde	0.0014	0.0002909000 lb/MMBtu	GRI Field
1,3-Butadiene	0.0000	0.0000001830 lb/MMBtu	GRI Field
Benzene	0.0000	0.0000020588 lb/MMBtu	EPA
Toluene	0.0000	0.0000033333 lb/MMBtu	EPA
Ethylbenzene	0.0000	0.0000000720 lb/MMBtu	GRI Field
Xylenes(m,p,o)	0.0000	0.0000010610 lb/MMBtu	GRI Field
2,2,4-Trimethylpentane	0.0002	0.0000323000 lb/MMBtu	GRI Field
n-Hexane	0.0084	0.0017647059 lb/MMBtu	EPA
Phenol	0.0000	0.0000000950 lb/MMBtu	GRI Field
Naphthalene	0.0000	0.0000005980 lb/MMBtu	EPA
2-Methylnaphthalene	0.0000	0.0000000235 lb/MMBtu	EPA
Acenaphthylene	0.0000	0.0000000018 lb/MMBtu	EPA
Biphenyl	0.0000	0.0000011500 lb/MMBtu	GRI Field
Acenaphthene	0.0000	0.0000000018 lb/MMBtu	EPA
Fluorene	0.0000	0.0000000027 lb/MMBtu	EPA
Anthracene	0.0000	0.0000000024 lb/MMBtu	EPA
Phenanthrene	0.0000	0.0000000167 lb/MMBtu	EPA
Fluoranthene	0.0000	0.0000000029 lb/MMBtu	EPA
Pyrene	0.0000	0.0000000049 lb/MMBtu	EPA
Benz(a)anthracene	0.0000	0.0000000018 lb/MMBtu	EPA
Chrysene	0.0000	0.0000000018 lb/MMBtu	EPA

Benzo(a)pyrene	0.0000	0.0000000012	lb/MMBtu	EPA
Benzo(b)fluoranthene	0.0000	0.0000000018	lb/MMBtu	EPA
Benzo(k)fluoranthene	0.0000	0.0000000018	lb/MMBtu	EPA
Benzo(g,h,i)perylene	0.0000	0.0000000012	lb/MMBtu	EPA
Indeno(1,2,3-c,d)pyrene	0.0000	0.0000000018	lb/MMBtu	EPA
Dibenz(a,h)anthracene	0.0000	0.0000000012	lb/MMBtu	EPA
Lead	0.0000	0.0000004902	lb/MMBtu	EPA

Total	<hr/>	0.0125		
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Criteria Pollutants

VOC	0.0257	0.0053921569	lb/MMBtu	EPA
PM	0.0356	0.0074509804	lb/MMBtu	EPA
PM, Condensable	0.0267	0.0055882353	lb/MMBtu	EPA
PM, Filterable	0.0089	0.0018627451	lb/MMBtu	EPA
CO	0.3932	0.0823529410	lb/MMBtu	EPA
NMHC	0.0407	0.0085294118	lb/MMBtu	EPA
NOx	0.4681	0.0980392157	lb/MMBtu	EPA
SO2	0.0028	0.0005880000	lb/MMBtu	EPA

Other Pollutants

Dichlorobenzene	0.0000	0.0000011765	lb/MMBtu	EPA
Methane	0.0108	0.0022549020	lb/MMBtu	EPA
Acetylene	0.0255	0.0053314000	lb/MMBtu	GRI Field
Ethylene	0.0025	0.0005264000	lb/MMBtu	GRI Field
Ethane	0.0145	0.0030392157	lb/MMBtu	EPA
Propylene	0.0045	0.0009333330	lb/MMBtu	GRI Field
Propane	0.0075	0.0015686275	lb/MMBtu	EPA
Butane	0.0098	0.0020588235	lb/MMBtu	EPA
Cyclopentane	0.0002	0.0000405000	lb/MMBtu	GRI Field
Pentane	0.0122	0.0025490196	lb/MMBtu	EPA
n-Pentane	0.0095	0.0020000000	lb/MMBtu	GRI Field
Cyclohexane	0.0002	0.0000451000	lb/MMBtu	GRI Field
Methylcyclohexane	0.0008	0.0001691000	lb/MMBtu	GRI Field
n-Octane	0.0002	0.0000506000	lb/MMBtu	GRI Field
n-Nonane	0.0000	0.0000050000	lb/MMBtu	GRI Field
CO2	561.6706	117.6470588235	lb/MMBtu	EPA

Dehydrator Reboiler Exhaust Emissions Calculations

Unit Number: **13b, 14b**
 Description: Dehydrator Reboiler (10 mmscfd)

Note: The data on this worksheet applies to each individual emissions unit identified above.

Fuel Consumption

0.593 MMBtu/hr	Capacity	scf/hr x Btu/scf / 1,000,000
659 scf/hr	Hourly fuel consumption	Mfg. data (Enertek)
8,760 hr/yr	Annual operating time	Harvest
5,196 MMBtu/yr	Annual fuel consumption	MMBtu/hr x hr/yr
5.77 MMscf/yr	Annual fuel consumption	scf/hr x hr/yr / 1,000,000
900 Btu/scf	Field gas heating value	Nominal heat content

Steady-State Emission Rates

Pollutants	Emission Factors, lb/day	Uncontrolled Emission Rates,	
		pph	tpy
NOX	1.03	4.29E-02	0.188
CO	0.43	1.79E-02	0.078
VOC	0.07	2.71E-03	1.19E-02
SO2	0.01	4.17E-04	1.83E-03

NOX emission factor taken from August 1994 Enertek Letter
 CO, TOC and SO2 emission factors taken from July 1998 InFab Letter
 VOC lb/day = 50% of TOC emissions, consistent with AP-42, Table 1.4-2
 Uncontrolled Emission Rates (pph) = lb/day / 24 hr/day
 Uncontrolled Emission Rates (tpy) = Uncontrolled Emission Rates (pph) x hr/yr / 2,000 lb/ton

Pollutants	Emission Factors, lb/MMscf	Uncontrolled Emission Rates,	
		pph	tpy
PM	7.60	5.01E-03	2.19E-02
PM10	7.60	5.01E-03	2.19E-02
PM2.5	7.60	5.01E-03	2.19E-02
Lead	5.00E-04	3.30E-07	1.44E-06

Emission factors taken from AP-42, Table 1.4-2
 Uncontrolled Emission Rates (pph) = lb/MMscf x (scf/hr / 1,000,000)
 Uncontrolled Emission Rates (tpy) = Uncontrolled Emission Rates (pph) x hr/yr / 2,000 lb/ton

Exhaust Parameters

600 °F	Exhaust temperature	Mfg. data (Enertek & InFab)
106.8 cfm	Stack flowrate	fps x ft ² x 60 sec/min
0.67 ft	Stack diameter	Mfg. data (InFab)
0.35 ft ²	Stack exit area	3.1416 x ((ft / 2) ^2)
5.1 fps	Stack velocity	Mfg. data (Enertek & InFab)
18.1 ft	Stack height	Mfg. data (InFab)

GRI-HAPCalc® 3.01
External Combustion Devices Report

Facility ID:	29-6 #4 CDP	Notes:	TEG Dehydrator Reboilers
Operation Type:	COMPRESSOR STATION		12 mmcf d dehy reboiler - 1208 scfh
Facility Name:	29-6 #4 CDP		10 mmcf d dehy reboiler - 659 scfh
User Name:	Cirrus		scfh
Units of Measure:	U.S. STANDARD		

Note: Emissions less than 5.00E-09 tons (or tonnes) per year are considered insignificant and are treated as zero. These emissions are indicated on the report with a "0". Emissions between 5.00E-09 and 5.00E-05 tons (or tonnes) per year are represented on the report with "0.0000".

External Combustion Devices

Unit Name: 659 SCFH

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

Calculated Emissions (ton/yr)

<u>Chemical Name</u>	<u>Emissions</u>	<u>Emission Factor</u>	<u>Emission Factor Set</u>
HAPs			
7,12-Dimethylbenz(a)anthracene	0.0000	0.0000000157 lb/MMBtu	EPA
Formaldehyde	0.0002	0.0000735294 lb/MMBtu	EPA
Methanol	0.0011	0.0004333330 lb/MMBtu	GRI Field
Acetaldehyde	0.0008	0.0002909000 lb/MMBtu	GRI Field
1,3-Butadiene	0.0000	0.0000001830 lb/MMBtu	GRI Field
Benzene	0.0000	0.0000020588 lb/MMBtu	EPA
Toluene	0.0000	0.0000033333 lb/MMBtu	EPA
Ethylbenzene	0.0000	0.0000000720 lb/MMBtu	GRI Field
Xylenes(m,p,o)	0.0000	0.0000010610 lb/MMBtu	GRI Field
2,2,4-Trimethylpentane	0.0001	0.0000323000 lb/MMBtu	GRI Field
n-Hexane	0.0046	0.0017647059 lb/MMBtu	EPA
Phenol	0.0000	0.0000000950 lb/MMBtu	GRI Field
Naphthalene	0.0000	0.0000005980 lb/MMBtu	EPA
2-Methylnaphthalene	0.0000	0.0000000235 lb/MMBtu	EPA
Biphenyl	0.0000	0.0000011500 lb/MMBtu	GRI Field
Fluorene	0.0000	0.0000000027 lb/MMBtu	EPA
Anthracene	0.0000	0.0000000024 lb/MMBtu	EPA
Phenanthrene	0.0000	0.0000000167 lb/MMBtu	EPA
Fluoranthene	0.0000	0.0000000029 lb/MMBtu	EPA
Pyrene	0.0000	0.0000000049 lb/MMBtu	EPA
Lead	0.0000	0.0000004902 lb/MMBtu	EPA
Total	0.0068		

Criteria Pollutants

VOC	0.0139	0.0053921569	lb/MMBtu	EPA
PM	0.0193	0.0074509804	lb/MMBtu	EPA
PM, Condensable	0.0144	0.0055882353	lb/MMBtu	EPA
PM, Filterable	0.0048	0.0018627451	lb/MMBtu	EPA
CO	0.2128	0.0823529410	lb/MMBtu	EPA
NMHC	0.0220	0.0085294118	lb/MMBtu	EPA
NOx	0.2534	0.0980392157	lb/MMBtu	EPA
SO2	0.0015	0.0005880000	lb/MMBtu	EPA

Other Pollutants

Dichlorobenzene	0.0000	0.0000011765	lb/MMBtu	EPA
Methane	0.0058	0.0022549020	lb/MMBtu	EPA
Acetylene	0.0138	0.0053314000	lb/MMBtu	GRI Field
Ethylene	0.0014	0.0005264000	lb/MMBtu	GRI Field
Ethane	0.0079	0.0030392157	lb/MMBtu	EPA
Propylene	0.0024	0.0009333330	lb/MMBtu	GRI Field
Propane	0.0041	0.0015686275	lb/MMBtu	EPA
Butane	0.0053	0.0020588235	lb/MMBtu	EPA
Cyclopentane	0.0001	0.0000405000	lb/MMBtu	GRI Field
Pentane	0.0066	0.0025490196	lb/MMBtu	EPA
n-Pentane	0.0052	0.0020000000	lb/MMBtu	GRI Field
Cyclohexane	0.0001	0.0000451000	lb/MMBtu	GRI Field
Methylcyclohexane	0.0004	0.0001691000	lb/MMBtu	GRI Field
n-Octane	0.0001	0.0000506000	lb/MMBtu	GRI Field
n-Nonane	0.0000	0.0000050000	lb/MMBtu	GRI Field
CO2	304.0235	117.6470588235	lb/MMBtu	EPA

Malfunction Emissions Data and Calculations

Unit Number: **M1**
 Description: **Malfunctions**

Emission Rates

Pollutants	Weight Percents, %	Uncontrolled Emission Rates, tpy
VOC		10.00
2,2,4-Trimethylpentane	0.000E+00	0.00E+00
Benzene	0.000E+00	0.00E+00
Ethylbenzene	0.000E+00	0.00E+00
n-Hexane	0.000E+00	0.00E+00
Toluene	0.000E+00	0.00E+00
Xylene	0.000E+00	0.00E+00

Weight percents calculated from gas composition (see table below)

Uncontrolled Emission Rates (tpy) = VOC Emission Rate (tpy) x (% / 100)

Gas Composition

Components	Mole Percents, %	Molecular Weights, lb/lb-mole	Component Weights, lb/lb-mole	Weight Percent, %
Carbon dioxide	19.5971	44.01		
Hydrogen sulfide	0.0000	34.07		
Nitrogen	0.0826	28.01		
Methane	78.0041	16.04		
Ethane	1.7814	30.07		
Propane	0.4200	44.09	0.1852	7.333E+01
Isobutane	0.0587	58.12	0.0341	1.351E+01
n-Butane	0.0517	58.12	0.0300	1.190E+01
Isopentane	0.0044	72.15	0.0032	1.257E+00
n-Pentane	0.0000	72.15	0.0000	0.000E+00
Cyclopentane	0.0000	70.14	0.0000	0.000E+00
n-Hexane	0.0000	86.17	0.0000	0.000E+00
Cyclohexane	0.0000	84.16	0.0000	0.000E+00
Other hexanes	0.0000	86.18	0.0000	0.000E+00
Heptanes	0.0000	100.20	0.0000	0.000E+00
Methylcyclohexane	0.0000	98.19	0.0000	0.000E+00
2,2,4-Trimethylpentane	0.0000	100.21	0.0000	0.000E+00
Benzene	0.0000	78.11	0.0000	0.000E+00
Toluene	0.0000	92.14	0.0000	0.000E+00
Ethylbenzene	0.0000	106.17	0.0000	0.000E+00
Xylenes	0.0000	106.17	0.0000	0.000E+00
C8+ Heavies	0.0000	110.00	0.0000	0.000E+00
Total	100.0000			
Total VOC			0.2525	

Blended gas stream composition obtained from the 29-6 #4 Dehy Inlet gas analysis sampled Apr 20, 2021.

Component Weights (lb/lb-mole) = (% / 100) x Molecular Weights (lb/lb-mole)

Weight Percents (%) = 100 x Component Weights (lb/lb-mole) / Total VOC Weight (lb/lb-mole)

Storage Tank Emissions Summary

Unit Number: **T28, T29**Description: Storage Tank Emissions (*Insignificant Source Demonstration*)

Source		Uncontrolled Working/Breathing Losses (lb/yr) (ton/yr)		Uncontrolled Flash Losses (ton/yr)	Total Uncontrolled Emissions (ton/yr)
Tank T28	Produced Water (300 bbl)				
	VOC	27.59	1.38E-02	N/A	0.01380
	Benzene	0.03	1.50E-05	N/A	0.00002
	n-Hexane	3.71	1.86E-03	N/A	0.00186
	Toluene	0.01	5.00E-06	N/A	0.00001
Tank T29	Produced Water (500 bbl)				
	VOC	27.56	1.38E-02	N/A	0.01378
	Benzene	0.03	1.50E-05	N/A	0.00002
	n-Hexane	3.71	1.86E-03	N/A	0.00186
	Toluene	0.01	5.00E-06	N/A	0.00001
PRODUCED WATER TANK EMISSION TOTALS					
	VOC	55.15	2.76E-02	N/A	2.76E-02
	Benzene	0.06	3.00E-05	N/A	3.00E-05
	n-Hexane	7.42	3.71E-03	N/A	3.71E-03
	Toluene	0.02	1.00E-05	N/A	1.00E-05

Working/breathing losses are calculated using TANKS 4.0.

It is assumed that the worst case emissions (T29) also apply to the smaller tank, T28.

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	21,000 gal Produced Water Tank
City:	Bloomfield
State:	New Mexico
Company:	Harvest
Type of Tank:	Vertical Fixed Roof Tank
Description:	29-6 #4 CDP

Tank Dimensions

Shell Height (ft):	20.00
Diameter (ft):	14.00
Liquid Height (ft) :	19.00
Avg. Liquid Height (ft):	10.00
Volume (gallons):	21,879.27
Turnovers:	24.00
Net Throughput(gal/yr):	525,102.39
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Light
Shell Condition:	Good
Roof Color/Shade:	Gray/Light
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	0.00
Radius (ft) (Dome Roof)	14.00

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meteorological Data used in Emissions Calculations: Albuquerque, New Mexico (Avg Atmospheric Pressure = 12.15 psia)

TANKS 4.0.9d

Emissions Report - Detail Format

Liquid Contents of Storage Tank

21,000 gal Produced Water Tank - Vertical Fixed Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Produced Water	All	64.94	53.24	76.64	58.39	0.3212	0.2133	0.4745	20.8578			18.15	
Benzene						1.3372	0.9653	1.8208	78.1100	0.0001	0.0002	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane						28.6704	23.0459	35.2667	58.1300	0.0008	0.0593	58.13	Option 1: VP60 = 26.098 VP70 = 31.306
Ethylbenzene						0.1286	0.0854	0.1894	106.1700	0.0000	0.0000	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						2.1727	1.6003	2.9030	86.1700	0.0042	0.0248	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Pentane (-n)						7.6199	5.8716	9.7769	72.1500	0.0049	0.1003	72.15	Option 3: A=27691, B=7.558
Toluene						0.3844	0.2666	0.5435	92.1300	0.0001	0.0001	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Water						0.3038	0.1997	0.4526	18.0200	0.9900	0.8152	18.02	Option 2: A=8.07131, B=1730.63, C=233.426
Xylene (-m)						0.1073	0.0710	0.1586	106.1700	0.0000	0.0000	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d

Emissions Report - Detail Format

Detail Calculations (AP-42)

21,000 gal Produced Water Tank - Vertical Fixed Roof Tank Bloomfield, New Mexico

Annual Emission Calculations

Standing Losses (lb):	65.5976
Vapor Space Volume (cu ft):	1,687.2019
Vapor Density (lb/cu ft):	0.0012
Vapor Space Expansion Factor:	0.1062
Vented Vapor Saturation Factor:	0.8428
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	1,687.2019
Tank Diameter (ft):	14.0000
Vapor Space Outage (ft):	10.9603
Tank Shell Height (ft):	20.0000
Average Liquid Height (ft):	10.0000
Roof Outage (ft):	0.9603
Roof Outage (Dome Roof)	
Roof Outage (ft):	0.9603
Dome Radius (ft):	14.0000
Shell Radius (ft):	7.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0012
Vapor Molecular Weight (lb/lb-mole):	20.8578
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3212
Daily Avg. Liquid Surface Temp. (deg. R):	524.6094
Daily Average Ambient Temp. (deg. F):	56.1542
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	518.0642
Tank Paint Solar Absorptance (Shell):	0.5400
Tank Paint Solar Absorptance (Roof):	0.5400
Daily Total Solar Insulation Factor (Btu/sqft day):	1,765.3167
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.1062
Daily Vapor Temperature Range (deg. R):	46.7976
Daily Vapor Pressure Range (psia):	0.2611
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3212
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.2133
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.4745
Daily Avg. Liquid Surface Temp. (deg R):	524.6094
Daily Min. Liquid Surface Temp. (deg R):	512.9100
Daily Max. Liquid Surface Temp. (deg R):	536.3088
Daily Ambient Temp. Range (deg. R):	27.9250
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.8428
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3212
Vapor Space Outage (ft):	10.9603
Working Losses (lb):	
Working Losses (lb):	83.7636
Vapor Molecular Weight (lb/lb-mole):	20.8578
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.3212

Annual Net Throughput (gal/yr.):	525,102.3900
Annual Turnovers:	24.0000
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	21,879.2700
Maximum Liquid Height (ft):	19.0000
Tank Diameter (ft):	14.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	149.3612

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

21,000 gal Produced Water Tank - Vertical Fixed Roof Tank
Bloomfield, New Mexico

Components	Losses(lbs)		
	Working Loss	Breathing Loss	Total Emissions
Produced Water	83.76	65.60	149.36
Benzene	0.02	0.01	0.03
Butane	4.96	3.89	8.85
Ethylbenzene	0.00	0.00	0.00
Hexane (-n)	2.08	1.63	3.71
Pentane (-n)	8.41	6.58	14.99
Toluene	0.01	0.00	0.01
Xylene (-m)	0.00	0.00	0.00
Water	68.29	53.48	121.77

Total 149.36 lbs/yr
subtract 121.77 lbs water/yr
= 27.59 lbs/yr VOC
= 0.01 tpy VOC

Truck Loading Emissions Calculations

Unit Number: L1

Description: Truck Loading - Produced Water (Insignificant source demonstration)

Emission Factor

0.6	Saturation factor, S	AP-42, Table 5.2-1 (submerged loading & dedicated service)
0.4801 psia	True vapor pressure of liquid, P	TANKS 4.0 output file
20.7974 lb/lb-mole	Molecular weight of vapors, M	TANKS 4.0 output file
76.64 °F	Temperature of liquid	TANKS 4.0 output file
536.31 °R	Temperature of liquid, T	°F + 459.67
0.14 lb/10 ³ gal	Emission factor, L	AP-42, Section 5.2, Equation 1
		$L = 12.46 \frac{SPM}{T}$

Production Rate

8.40 10 ³ gal/hr	Maximum hourly production rate	Harvest
1,050.20 10 ³ gal/yr	Maximum annual production rate (Safety factor of x2 applied to annual production rate of largest tank)	Harvest

Steady-State Emission Rates

Pollutant	Uncontrolled Emission Rates,	
	pph	tpy
VOC	1.17	7.31E-02

Uncontrolled Emission Rate (pph) = lb/10³ gal x 10³ gal/hrUncontrolled Emission Rate (tpy) = lb/10³ gal x 10³ gal/yr / 2,000 lb/ton

Pollutants	Vapor Mass Fraction	Emission Rates,	
		pph	tpy
Benzene	0.0002	2.34E-04	1.46E-05
Ethylbenzene	0.0000	0.00E+00	0.00E+00
n-Hexane	0.0248	2.90E-02	1.81E-03
Toluene	0.0001	1.17E-04	7.31E-06
m-Xylene	0.0000	0.00E+00	0.00E+00

Percent of VOC calculated from the TANKS 4.0 results

Percent of VOC (%) = 100 x Pollutant Emission Rate (lb/yr) / Total VOC Emission Rate (lb/yr)

Emission Rates (pph) = VOC Emission Rate (pph) x (%) / 100

Emission Rates (tpy) = VOC Emission Rate (tpy) x (%) / 100

Equipment Leaks Emissions Calculations

Unit Number: **F1**Description: Valves, Connectors, Seals & Open-Ended Lines *(Insignificant source demonstration)*

Steady-State Emission Rates

Equipment	Number of Components, # of sources	Emission Factors, kg/hr/source	Emission Factors, lb/hr/source	Uncontrolled TOC Emission Rates,	
				pph	tpy
Valves	765	0.0045	0.0099	7.57	33.17
Connectors	799	0.0002	0.0004	0.35	1.54
Pump Seals	8	0.0024	0.0053	0.04	0.19
Compressor Seals	56	0.0088	0.0194	1.08	4.75
Pressure Relief Valves	67	0.0088	0.0194	1.30	5.68
Open-Ended Lines	214	0.0020	0.0044	0.94	4.12
Total				11.29	49.45

Number of components based on the numbers of compressors and dehydrators at the station (see next page)

Emission factors taken from the EPA "1995 Protocol for Equipment Leak Emission Estimates"

Emission factors (lb/hr/source) = Emission factors (kg/hr/source) x 2.2 lb/kg

Uncontrolled TOC Emission Rates (pph) = lb/hr/source x # of sources

Uncontrolled TOC Emission Rates (tpy) = Uncontrolled TOC Emission Rates (pph) x 8,760 hr/yr / 2,000 lb/ton

Components	Mole Percents, %	Molecular Weights, lb/lb-mole	Component Weights, lb/lb-mole	Weight Percent of TOC, %	Uncontrolled Emission Rates,	
					pph	tpy
Carbon dioxide	19.5971	44.010				
Hydrogen sulfide	0.0000	34.070				
Nitrogen	0.0826	28.013				
Methane	78.0041	16.043	1251.420	94.075		
Ethane	1.7814	30.070	53.567	4.027		
Propane	0.4200	44.097	18.521	1.392	1.57E-01	6.88E-01
Isobutane	0.0587	58.123	3.412	0.256	2.90E-02	1.27E-01
n-Butane	0.0517	58.123	3.005	0.226	2.55E-02	1.12E-01
Isopentane	0.0044	72.150	0.317	0.024	2.69E-03	1.18E-02
n-Pentane	0.0000	72.150	0.000	0.000	0.00E+00	0.00E+00
Cyclopentane	0.0000	70.134	0.000	0.000	0.00E+00	0.00E+00
n-Hexane	0.0000	86.177	0.000	0.000	0.00E+00	0.00E+00
Cyclohexane	0.0000	84.161	0.000	0.000	0.00E+00	0.00E+00
Other hexanes	0.0000	86.177	0.000	0.000	0.00E+00	0.00E+00
Heptanes	0.0000	100.204	0.000	0.000	0.00E+00	0.00E+00
Methylcyclohexane	0.0000	98.188	0.000	0.000	0.00E+00	0.00E+00
2,2,4-Trimethylpentane	0.0000	114.231	0.000	0.000	0.00E+00	0.00E+00
Benzene	0.0000	78.114	0.000	0.000	0.00E+00	0.00E+00
Toluene	0.0000	92.141	0.000	0.000	0.00E+00	0.00E+00
Ethylbenzene	0.0000	106.167	0.000	0.000	0.00E+00	0.00E+00
Xylenes	0.0000	106.167	0.000	0.000	0.00E+00	0.00E+00
C8+ Heavies	0.0000	114.231	0.000	0.000	0.00E+00	0.00E+00
Total	100.0000		1330.241			
Total VOC				1.899	0.214	0.939

Blended gas stream composition obtained from the 29-6 #4 Dehy Inlet gas analysis sampled Apr 20, 2021.

Component Weights (lb/lb-mole) = (% / 100) * Molecular Weights (lb/lb-mole)

Weight Percent of TOC (%) = 100 x Component Weights (lb/lb-mole) / Total Component Weight (lb/lb-mole)

Uncontrolled Emission Rates (pph) = Total Uncontrolled TOC Emission Rate (pph) x (% / 100)

Uncontrolled Emission Rates (tpy) = Total Uncontrolled TOC Emission Rate (tpy) x (% / 100)

Equipment Leaks Emissions Calculations

Unit Number: **F1**

Description: Valves, Connectors, Seals & Lines

Number of Compression Units at the Facility: **8**Number of Dehydrators at the Facility: **4**

Process Equipment Description	Equipment Count						Instrument Count		
	Valves	Connectors	Pump Seals	Compressor Seals	Pressure Relief Valves	Open-end	Flow	Level	Pressure
Station inlet, meter run to pulsation dampener	17	14	0	0	1	13	3	0	3
Pulsation dampener	12	8	0	0	0	2	0	4	1
Compressor suction header	7	4	0	0	0	3	0	0	1
Suction header feed to instrument gas header	3	1	0	0	0	1	0	0	0
Compressor discharge header and bypass to station discharge	6	5	0	0	0	3	0	1	1
Compressor discharge header and suction header bypass lines	4	2	0	0	0	2	0	0	1
Fuel gas header	2	2	0	0	1	2	0	0	1
Instrument gas header	2	2	0	0	1	2	0	0	0
Station discharge header	9	5	0	0	1	6	0	0	2
Fuel gas recovery header	2	2	0	0	1	2	0	0	0
Fuel gas feed and filter loop	15	9	0	0	0	1	0	4	1
Instrument gas feed and filter loop	9	11	0	0	0	3	0	0	0
Produced water storage tank	1	0	0	0	0	1	0	1	0
ESD panel	12	0	0	0	0	0	0	0	0
Starting gas header	6	2	0	0	1	3	0	0	0
Hot gas header	2	2	0	0	0	2	0	0	0
Volume bottle lop	12	4	0	24	1	2	0	0	1
Components from Compressors	352	472	0	32	48	88	0	32	72
Components from dehydrators	24	40	8	0	12	24	0	12	16
Total	497	585	8	56	67	160	3	54	100
Adjusted Total	765	799	8	56	67	214			

The following additions are included in the Adjusted Total:

- 1 valve is added for each open end line
- 2 connectors are added for each flow meter
- 2 valves, 2 connectors and 1 open end line are added for each level gauge
- 1 connector is added for each pressure gauge

The component count is based on an evaluation of the Sim Mesa Compressor Station (two stage compression)

Section 6.a

Green House Gas Emissions

(Submitting under 20.2.70, 20.2.72 20.2.74 NMAC)

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

Calculating GHG Emissions:

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

Sources for Calculating GHG Emissions:

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

Global Warming Potentials (GWP):

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

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

Metric to Short Ton Conversion:

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

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

Greenhouse Gas (GHG) Emissions

Greenhouse gas (GHG) emissions are provided. Carbon dioxide (CO₂), methane (CH₄) emissions, nitrous oxide (N₂O) (combustion sources only), and total GHG are reported in tons per year (tpy). Carbon dioxide equivalent (CO₂e) emissions (including CO₂, N₂O and CH₄) are reported in metric tonnes per year. The CO₂e is calculated by summing the estimated CO₂ emissions with the CH₄ emissions (adjusted for the Global Warming Potential (GWP) of the CH₄) and the N₂O emissions (adjusted for the GWP of the N₂O). The GWPs are from Title 40, Part 98 (40 CFR 98), *Mandatory Greenhouse Gas Reporting*, Table A-1.

The portion of 40 CFR 98, Table A-1 that includes the GWPs for CH₄ and N₂O is included in Section 7. 40 CFR 98, Subpart A (including Table A-1) is available for download in its entirety through the U.S. Government Publications Office (GPO) website at <http://ecfr.gpoaccess.gov/> under the “Code of Federal Regulations” link.

Combustion Equipment GHG. GHG emissions, including carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) exhaust emissions from the combustion equipment (including the natural gas fired reciprocating internal combustion engines and the TEG dehydrator reboilers) are calculated from emission factors from 40 CFR 98, Part C, Tables C-1 & C-2, and the equipment higher heating value (HHV) design heat rate.

Emission factors and methodologies from 40 CFR 98, Table C-1 and C-2 are included in Section 7. 40 CFR 98, Subpart C (including Tables C-1 and C-2) is available for download in its entirety through the U.S. Government Publications Office (GPO) website at <http://ecfr.gpoaccess.gov/> under the “Code of Federal Regulations” link.

Non-Combustion Equipment GHG (General). The non-combustion GHG emissions from the facility are based on 40 CFR 98, Subpart W, *Petroleum and Natural Gas Systems*, or an appropriate method published in the American Petroleum Institute’s 2009 *Compendium of Greenhouse Gas Emission Estimates Methodologies for the Oil and Gas Industry* (API Compendium). The emission calculation method is noted in the calculations spreadsheets.

40 CFR 98, Subpart W is published and available for download in its entirety through the U.S. Government Publications Office (GPO) website at <http://ecfr.gpoaccess.gov/> under the “Code of Federal Regulations” link. The API Compendium in its entirety is available at <http://www.api.org/environment-health-and-safety/climate-change/whats-new/compendium-ghg-methodologies-oil-and-gas-industry> . Excerpts of the cited 40 CFR 98 and API Compendium materials are provided in Section 7.

Dehydrator Still Vent GHG. Emissions of GHG from the dehydrator still vents are calculated in accordance with the methods of 40 CFR 98, subpart W, *Petroleum and Natural Gas Systems*, §98.233(e), including GRI-GLYCalc 4.0 emissions estimation software, the natural gas stream composition, and dehydrator operating parameters corresponding to the PTE emission calculations.

SSM Compressor Blowdown GHG. Compressor blowdown emissions (SSM), including emissions from SSM and compressor venting and associated piping, are calculated from the estimated total annual gas losses (scf/yr) and the molar fraction of CO₂ and CH₄ in the natural gas extended analysis. The SSM emissions are estimated from the annual blowdown volume of gas. The emission calculations are provided in this section. The extended gas analysis used in the emission estimates is in section 7.

Malfunction Emissions GHG. GHG emissions from the malfunction VOC emissions (unit M1) are calculated based on the estimated total volume of annual gas (scf/yr) associated with the specified type of VOC emissions and the molar fractions of CO₂ and CH₄ in the natural gas extended analysis.

Reciprocating Compressor Venting Emissions. Annual GHG emissions from reciprocating compressor vented emissions, including compressor blowdown valve leaks, rod packing leaks and isolation valve leaks, are estimated from the number of compressors; the estimated compressor operating times; the CO₂ and CH₄ molar composition of the gas stream; and the density of the GHG gases according to 40 CFR 98, Subpart W, equation W-36.

Isolation valve leakage occurs when the compressors are not in operation, i.e., when the compressors operate zero hours. The GHG emissions from isolation valve leakage are greater than the combined blowdown valve leakage and rod packing emissions that occur when compressor(s) are in operation. Therefore, the PTE is calculated assuming 0 hours per year of compressor operation (corresponding with isolation valve leakage occurring 8,760 hours per year).

Equipment Leaks Emissions. GHG emissions from facility-wide equipment leaks (unit F1) are based on the estimated total annual gas losses (scf/yr) associated with the estimated number of components, the corresponding emission factors from the EPA's 1995 *Protocol for Equipment Leak Emission Estimates*, and the molar fraction of CO₂ and CH₄ contained in the natural gas extended analysis.

Natural Gas Driven Pneumatic Device Venting Emissions and Natural Gas Driven Pneumatic Pump Venting Emissions. Gas-driven pneumatic device and pneumatic pump emissions are calculated from the facility gas stream composition for CO₂ and CH₄, the estimated number of devices, and the appropriate emission factors from 40 CFR 98, Subpart W, Table W-1A (Western U.S. - Gas Service).

Storage Tank and Truck Loading GHG. GHG emissions from the working and breathing losses from the produced water, waste water, lube oil, waste lube oil, and antifreeze storage tanks are considered to be zero, based on the stored contents are either non-flashing liquids or post-flashed liquid. The other stored liquids (antifreeze, methanol) do not contain appreciable amounts of GHG. Similarly, any transferred liquid (truck loading) does not contain appreciable amounts of any gases, including GHG.

Green House Gas Emissions Data and Calculations

Sources	Facility Total Emissions				
	CO2, tpy	N2O, tpy	CH4, tpy	GHG, tpy	CO2e, tpy
Engine & Turbine Exhaust Emissions	37,676.11	7.10E-02	7.10E-01	37,676.89	37715.02
SSM Emissions	123.12	--	178.61	301.72	4588.24
Reciprocating Compressor Venting Emissions	279.26	--	405.74	685.00	10422.77
Dehydrator Emissions	1,315.23	--	4.67	1,319.90	1432.10
Reboiler Exhaust Emissions	1,673.95	3.15E-03	3.15E-02	1,673.99	1675.68
Equipment Leak Emissions	12.51	--	18.18	30.69	467.02
Natural Gas Pneumatic Device Venting Emissions	76.36	--	110.67	187.03	2843.09
Natural Gas Driven Pneumatic Pump Venting Emissions	1.32	--	1.92	3.24	49.31
Malfunction Emissions	341.55	--	495.49	837.03	12728.69
Storage Tank Emissions	0.00	--	0.00	0.00	0.00
Total	41,499.41	7.42E-02	1,216.02	42,715.50	71,921.92

Engine & Turbine Exhaust Emissions

Unit Numbers	Description	Emission Factors			Emission Rates		
		CO2, kg/MMBtu	N2O, kg/MMBtu	CH4, kg/MMBtu	CO2, tpy	N2O, tpy	CH4, tpy
1	7042GL engine	53.06	1.00E-04	1.00E-03	4,709.51	8.88E-03	8.88E-02
2	7042GL engine	53.06	1.00E-04	1.00E-03	4,709.51	8.88E-03	8.88E-02
3	7042GL engine	53.06	1.00E-04	1.00E-03	4,709.51	8.88E-03	8.88E-02
4	7042GL engine	53.06	1.00E-04	1.00E-03	4,709.51	8.88E-03	8.88E-02
5	7042GL engine	53.06	1.00E-04	1.00E-03	4,709.51	8.88E-03	8.88E-02
15	7042GL engine	53.06	1.00E-04	1.00E-03	4,709.51	8.88E-03	8.88E-02
16	7042GL engine	53.06	1.00E-04	1.00E-03	4,709.51	8.88E-03	8.88E-02
17	7042GL engine	53.06	1.00E-04	1.00E-03	4,709.51	8.88E-03	8.88E-02
Total					37,676.11	7.10E-02	0.71

The emissions factors are taken from 40 CFR 98, Subpart C, Tables C-1 & C-2

Emission Rates (tpy) = kg/MMBtu x 2.2 lb/kg x MMBtu/yr / 2,000 lb/ton

Unit Numbers	Description	Fuel Types	Operating Times, hr/yr	LHV Design Heat Rates, MMBtu/hr	HHV	
					Design Heat Rates, MMBtu/hr	Fuel Usages, MMBtu/yr
1	7042GL engine	Nat. Gas	8,760	8.29	9.21	80,689
2	7042GL engine	Nat. Gas	8,760	8.29	9.21	80,689
3	7042GL engine	Nat. Gas	8,760	8.29	9.21	80,689
4	7042GL engine	Nat. Gas	8,760	8.29	9.21	80,689
5	7042GL engine	Nat. Gas	8,760	8.29	9.21	80,689
15	7042GL engine	Nat. Gas	8,760	8.29	9.21	80,689
16	7042GL engine	Nat. Gas	8,760	8.29	9.21	80,689
17	7042GL engine	Nat. Gas	8,760	8.29	9.21	80,689

The fuel types and operating times are provided by Harvest

The LHV design heat rates are taken from manufacturers data

HHV Design Heat Rates (MMBtu/hr) = LHV Design Heat Rates (MMBtu/hr) / 0.9 LHV/HHV

HHV Fuel Usages (MMBtu/yr) = HHV Design Heat Rates (MMBtu/hr) x hr/yr

Green House Gas Emissions Data and Calculations

SSM Emissions

Unit Numbers	Description	Total Gas Losses, scf/yr	CO2 Emission Factors, lb/scf	CH4 Emission Factors, lb/scf	Emission Rates		
					CO2, tpy	N2O, tpy	CH4, tpy
SSM	SSM	10,831,770	0.0227	0.0330	123.12	-	178.61

The annual blowdown volumes are calculated from data provided by Harvest

The CO2 and CH4 emission factors are calculated from the facility extended gas analysis

Emission Rates (tpy) = scf/yr x lb/scf / 2,000 lb/ton

Reciprocating Compressor Venting Emissions

Unit Numbers	Description	Emission Rates		
		CO2, tpy	N2O, tpy	CH4, tpy
NA	Blowdown Valve Leakage	26.68	-	38.76
NA	Rod Packing Emissions	252.58	-	366.98
NA	Isolation Valve Leakage	0.00	-	0.00
	Total	279.26	-	405.74

Operating or standby mode - includes blowdown valve leakage through blowdown vent stack

Operating mode - includes rod packing emissions

Non-operating depressurized mode - includes isolation valve leakage through open blowdown vents (without blind flanges)

Rod packing gas emissions assume 4 cylinders per compressor

A combination of equations W-26 & W-36 (Subpart W) is used to calculate reciprocating compressor emissions

As the NMED requires CO2 & CH4 emissions rather than CO2e emissions, it is not necessary to include the global warming potential from equation W-36

CO2 Emission Rates (tpy) = # x scf/hr x hr/yr x (CO2 Mole Percent (%) / 100) x CO2 Density (kg/scf)
x (2,204.6 lb/tonne / 2,000 lb/ton) / 1,000 kg/tonne

CH4 Emission Rates (tpy) = # x scf/hr x hr/yr x (CH4 Mole Percent (%) / 100) x CH4 Density (kg/scf)
x (2,204.6 lb/tonne / 2,000 lb/ton) / 1,000 kg/tonne

Unit Numbers	Description	Number of Compressors #	Gas Emissions, scf/hr	Operating Times, hr/yr	CO2 Mole Percents, %	CH4 Mole Percents, %	CO2 Density, kg/scf	CH4 Density, kg/scf
NA	Blowdown Valve Leakage	8	33.5	8,760	19.60	78.00	0.0526	0.0192
NA	Rod Packing Emissions	8	317.2	8,760	19.60	78.00	0.0526	0.0192
NA	Blowdown Valve Leakage (Standby)	8	10.5	0	19.60	78.00	0.0526	0.0192

The number of compressors are provided by Harvest

Blowdown valve leakage (33.5 scf/hr) and rod packing emissions occur in operating mode

Blowdown valve leakage (10.5 scf/hr) occurs in standby pressurized mode

Emission factors are the three year rolling average (2012-2014) of all measurements in the Harvest compressor fleet located at natural gas processing plants

The operating times (the average operating times for all station compressors combined) are provided by Harvest

The facility CO2 and CH4 contents are taken from the facility extended gas analysis

The CO2 & CH4 densities (kg/scf) are taken from Subpart W, Paragraph 98.233(v)

Green House Gas Emissions Data and Calculations

Dehydrator Emissions

Unit Numbers	Description	Emission Rates		
		CO ₂ , tpy	N ₂ O, tpy	CH ₄ , tpy
11a	Dehydrator (12 mmscfd)	328.85	-	1.17
12a	Dehydrator (12 mmscfd)	328.85	-	1.17
13a	Dehydrator (10 mmscfd)	328.76	-	1.17
15a	Dehydrator (10 mmscfd)	328.76	-	1.17
Total		1,315.23	-	4.67

The emission rates are taken from the GRI-GLYCalc output file

Reboiler Exhaust Emissions

Unit Numbers	Description	Emission Factors			Emission Rates		
		CO ₂ , kg/MMBtu	N ₂ O, kg/MMBtu	CH ₄ , kg/MMBtu	CO ₂ , tpy	N ₂ O, tpy	CH ₄ , tpy
11b	Reboiler (1208 scfh)	53.06	1.00E-04	1.00E-03	617.63	1.16E-03	1.16E-02
12b	Reboiler (1208 scfh)	53.06	1.00E-04	1.00E-03	617.63	1.16E-03	1.16E-02
13b	Reboiler (429 scfh)	53.06	1.00E-04	1.00E-03	219.34	4.13E-04	4.13E-03
14b	Reboiler (429 scfh)	53.06	1.00E-04	1.00E-03	219.34	4.13E-04	4.13E-03
Total					1,673.95	3.15E-03	3.15E-02

The emissions factors are taken from 40 CFR 98, Subpart C, Tables C-1 & C-2

Emission Rates (tpy) = kg/MMBtu x 2.2 lb/kg x MMBtu/yr / 2,000 lb/ton

Unit Numbers	Description	Fuel Types	Operating Times hr/yr	LHV			HHV	
				Fuel Usages, scf/hr	Fuel Heat Contents, Btu/scf	Fuel Usages, MMBtu/hr	Fuel Usages, MMBtu/hr	Fuel Usages, MMBtu/yr
11b	Reboiler (1208 scfh)	Nat. Gas	8,760	1,208	900	1.09	1.21	10,582
12b	Reboiler (1208 scfh)	Nat. Gas	8,760	1,208	900	1.09	1.21	10,582
13b	Reboiler (429 scfh)	Nat. Gas	8,760	429	900	0.39	0.43	3,758
14b	Reboiler (429 scfh)	Nat. Gas	8,760	429	900	0.39	0.43	3,758

The fuel types and operating times are provided by Harvest

The LHV fuel usages (scf/hr) are taken from manufacturer's data

The LHV fuel heat contents are estimated based on the value typically used by manufacturers

LHV Fuel Usages (MMBtu/hr) = LHV Fuel Usages (scf/hr) x Btu/scf / 1,000,000 Btu/MMBtu

HHV Fuel Usages (MMBtu/hr) = LHV Fuel Usages (MMBtu/hr) / 0.9 LHV/HHV

HHV Fuel Usages (MMBtu/yr) = HHV Fuel Usages (MMBtu/hr) x hr/yr

Green House Gas Emissions Data and Calculations

Equipment Leaks Emissions

Unit Numbers	Description	Emission Rates		
		CO2, tpy	N2O, tpy	CH4, tpy
NA	Valves	9.2	-	13.4
NA	Connectors	1.4	-	2.0
NA	Open-Ended Lines	0.7	-	1.0
NA	Pressure Relief Valves	1.3	-	1.9
Total		12.5	-	18.2

A combination of equations W-31 & W-36 (Subpart W) is used to calculate uncombusted CO2 & CH4 emissions
 As the NMED requires CO2 & CH4 emissions rather than CO2e emissions, it is not necessary to include the global warming potential from equation W-36

$$\text{CO2 Emission Rate (tpy)} = \# \times \text{scf/hr/component} \times (\text{CO2 Content (mole \%)} / 100) \times \text{hr/yr} \times \text{CO2 Density (kg/scf)} \times (2,204.6 \text{ lb/tonne} / 2,000 \text{ lb/ton}) / 1,000 \text{ kg/tonne}$$

$$\text{CH4 Emission Rate (tpy)} = \# \times \text{scf/hr/component} \times (\text{CH4 Content (mole \%)} / 100) \times \text{hr/yr} \times \text{CH4 Density (kg/scf)} \times (2,204.6 \text{ lb/tonne} / 2,000 \text{ lb/ton}) / 1,000 \text{ kg/tonne}$$

Unit Numbers	Description	Number of Components, #	Emission Factors, scf/hr /component	CO2 Contents, mole %	CH4 Contents, mole %	Operating Times, hr/yr	CO2 Density, kg/scf	CH4 Density, kg/scf
NA	Valves	765	0.121	19.60	78.00	8,760	0.0526	0.0192
NA	Connectors	799	0.017	19.60	78.00	8,760	0.0526	0.0192
NA	Open-Ended Lines	214	0.031	19.60	78.00	8,760	0.0526	0.0192
NA	Pressure Relief Valves	67	0.193	19.60	78.00	8,760	0.0526	0.0192

The number of sources are calculated based on the number of compressors and dehydrators at the station (see criteria pollutant and HAP equipment leaks calculations)

The emission factors are taken from Subpart W, Table W-1A (Western U.S. - Gas Service)

The facility CO2 and CH4 contents are taken from the facility extended gas analysis

The operating times are provided by Harvest (default is the entire year)

The CO2 & CH4 densities are taken from Subpart W, Paragraph 98.233(v)

Natural Gas Pneumatic Device Venting Emissions

Unit Numbers	Description	Number of Devices, #	Emission Factors, scf/hr/device	Operating Times, hr/yr	Emission Rates		
					CO2, tpy	N2O, tpy	CH4, tpy
NA	Continuous High Bleed Pneumatic Devices	3	37.3	8,760	11.14	-	16.15
NA	Intermittent Bleed Pneumatic Devices	48	13.5	8,760	64.52	-	93.52
NA	Continuous Low Bleed Pneumatic Devices	5	1.39	8,760	0.69	-	1.00
Total					76.36	-	110.67

The number of devices are provided by Harvest

The emission factors are taken from Subpart W, Table W-1A (Western U.S. - Gas Service)

The operating times are provided by Harvest

Equation W-1 (Subpart W) is used to calculate CO2 & CH4 emissions

As the NMED requires CO2 & CH4 emissions in addition to CO2e emissions, it is necessary to divide by the global warming potentials

$$\text{CO2 Emission Rates (tpy)} = \# \times \text{scf/hr/device} \times (\text{CO2 Content (mole \%)} / 100) \times \text{CO2 Conversion Factors (tonne CO2e/scf)} \times \text{hr/yr} \times (2,204.6 \text{ lb/tonne} / 2,000 \text{ lb/ton}) / \text{CO2 Global Warming Potentials (tonne CO2e/tonne CO2)}$$

$$\text{CH4 Emission Rates (tpy)} = \# \times \text{scf/hr/device} \times (\text{CH4 Contents (mole \%)} / 100) \times \text{CH4 Conversion Factors (tonne CO2e/scf)} \times \text{hr/yr} \times (2,204.6 \text{ lb/tonne} / 2,000 \text{ lb/ton}) / \text{CH4 Global Warming Potentials (tonne CO2e/tonne CH4)}$$

Unit Numbers	Description	CO2 Contents, mole %	CH4 Contents, mole %	CO2 Conversion Factors, tonne CO2e /scf	CH4 Conversion Factors, tonne CO2e /scf	CO2 Global Warming Potentials, tonne CO2e /tonne CO2	CH4 Global Warming Potentials, tonne CO2e /tonne CH4
NA	Continuous High Bleed Pneumatic Devices	19.60	78.00	5.262E-05	4.790E-04	1	25
NA	Continuous Low Bleed Pneumatic Devices	19.60	78.00	5.262E-05	4.790E-04	1	25
NA	Intermittent Bleed Pneumatic Devices	19.60	78.00	5.262E-05	4.790E-04	1	25

The facility CO2 and CH4 contents are taken from the facility extended gas analysis

The conversion factors are taken from Subpart W, Paragraph 98.233(a)

The global warming potentials are taken from 40 CFR Part 98, Table A-1

Green House Gas Emissions Data and Calculations

Natural Gas Driven Pneumatic Pump Venting Emissions

Emission Rates

Unit Number	Description	Number of Pumps, #	Emission Factor, scf/hr/pump	Operating Time, hr/yr	Emission Rates		
					CO2, tpy	N2O, tpy	CH4, tpy
NA	Pneumatic Pump Venting	1	13.3	8,760	1.32	-	1.92

The number of pumps are provided by Harvest

The emission factor is taken from Subpart W, Table W-1A (Western U.S. - Gas Service)

The operating time is provided by Harvest (default is the entire year)

Equation W-2 (Subpart W) is used to calculate CO2 & CH4 emissions

As the NMED requires CO2 & CH4 emissions in addition to CO2e emissions, it is necessary to divide by the global warming potentials

CO2 Emission Rate (tpy) = # x scf/hr/pump x (CO2 Content (mole %) / 100) x CO2 Conversion Factor (tonne CO2e/scf) x hr/yr
x (2,204.6 lb/tonne / 2,000 lb/ton) / CO2 Global Warming Potentials (tonne CO2e/tonne CO2)

CH4 Emission Rate (tpy) = # x scf/hr/pump x (CH4 Content (mole %) / 100) x CH4 Conversion Factor (tonne CO2e/scf) x hr/yr
x (2,204.6 lb/tonne / 2,000 lb/ton) / CH4 Global Warming Potentials (tonne CO2e/tonne CH4)

Unit Number	Description	CO2 Content, mole %	CH4 Content, mole %	CO2 Conversion Factor, tonne CO2e /scf	CH4 Conversion Factor, tonne CO2e /scf	CO2 Global Warming Potential, tonne CO2e /tonne CO2	CH4 Global Warming Potential, tonne CO2e /tonne CH4
NA	Pneumatic Pump Venting	19.60	78.00	5.262E-05	4.790E-04	1	25

The facility CO2 and CH4 contents are taken from the facility extended gas analysis

The conversion factors are taken from Subpart W, Paragraph 98.233(a)

The operating time is provided by Harvest (the default is the entire year)

The global warming potentials are taken from 40 CFR Part 98, Table A-1

Malfunction Emissions

Unit Number	Description	Permitted VOC, tpy	Emission Rates		
			CO2, tpy	N2O, tpy	CH4, tpy
M1	Malfunctions	10.00	341.55	-	495.49

The VOC emission rate is estimated (see calculations workbook)

CO2 Emission Rate (tpy) = VOC Emission Rate (tpy) x (Total Component Weight (lb/lb-mole) / VOC Component Weight (lb-lb-mole))
x (CO2 Weight % of Total (%) / 100)

CH4 Emission Rate (tpy) = VOC Emission Rate (tpy) x (Total Component Weight (lb/lb-mole) / VOC Component Weight (lb-lb-mole))
x (CH4 Weight % of Total (%) / 100)

Unit Number	Description	Total Component Weight, lb/lb-mole	VOC Component Weight, lb/lb-mole	CO2 Weight % of Total, %	CH4 Weight % of Total, %
M1	Malfunctions	21.95	0.25	39.30	57.01

The total & VOC component weights and CO2 & CH4 weight % of totals are calculated from the facility extended gas analysis

Storage Tank Emissions

Unit Number	Description	Emission Rates		
		CO2, tpy	N2O, tpy	CH4, tpy
	Storage Tanks (all)	0.00	-	0.00
	Total	0.00	-	0.00

Green House Gas Emissions Data and Calculations

Gas Stream Composition

Components	Mole Percents, %	Molecular Weights, lb/lb-mole	Component Weights, lb/lb-mole	Weight Percent of Total, %	Emission Factors, lb/scf
Carbon Dioxide	19.5971	44.01	8.62	39.2962	0.0227
Hydrogen Sulfide	0.0000	34.07	0.00	0.0000	0.0000
Nitrogen	0.0826	28.01	0.02	0.1054	0.0001
Methane	78.0041	16.04	12.51	57.0072	0.0330
Ethane	1.7814	30.07	0.54	2.4406	0.0014
Propane	0.4200	44.09	0.19	0.8437	0.0005
IsoButane	0.0587	58.12	0.03	0.1554	0.0001
Normal Butane	0.0517	58.12	0.03	0.1369	0.0001
IsoPentane	0.0044	72.15	0.00	0.0145	0.0000
Normal Pentane	0.0000	72.15	0.00	0.0000	0.0000
Cyclopentane	0.0000	70.14	0.00	0.0000	0.0000
n-Hexane	0.0000	86.17	0.00	0.0000	0.0000
Cyclohexane	0.0000	84.16	0.00	0.0000	0.0000
Other Hexanes	0.0000	86.18	0.00	0.0000	0.0000
Heptanes	0.0000	100.20	0.00	0.0000	0.0000
Methylcyclohexane	0.0000	98.19	0.00	0.0000	0.0000
2,2,4-Trimethylpentane	0.0000	100.21	0.00	0.0000	0.0000
Benzene	0.0000	78.11	0.00	0.0000	0.0000
Toluene	0.0000	92.14	0.00	0.0000	0.0000
Ethylbenzene	0.0000	106.17	0.00	0.0000	0.0000
Xylenes	0.0000	106.17	0.00	0.0000	0.0000
C8+ heavies	0.0000	110.00	0.00	0.0000	0.0000
Total	100.0000		21.95	100.0000	0.0578
VOC			0.25	--	0.0007

Blended gas stream composition obtained from the 29-6 #4 Dehy Inlet gas analysis sampled Apr 20, 2021.

Component Weights (lb/lb-mole) = [Mole Percents (%) / 100] x Molecular Weights (lb/lb-mole)

Weight Percent of Total (%) = 100 x Component Weights (lb/lb-mole) / Total Component Weight (lb/lb-mole)

Emission Factors (lb/scf) = [Mole Percents (%) / 100] x Molecular Weights (lb/lb-mole) / 379.4 scf/lb-mole

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.
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Please see the following pages.

ENVIRONMENTAL 9

AT-GL EMISSION LEVELS ‡

MODEL	CARBURETOR SETTING	GRAMS/BHP-HR				% OBSERVED DRY		MASS AFR ⁽²⁾	VOLUME AFR ⁽²⁾	EXCESS AIR RATIO
		NOx ⁽¹⁾	CO	NMHC ⁽⁴⁾	THC	CO	O ₂			
AT25GL	Standard	1.0	2.25	1.0	8.0	0.06	9.8	28.0:1	16.8:1	1.74
AT27GL	Standard	1.5	1.7	0.5	5.0	0.06	9.8	28.0:1	16.8:1	1.74
	Ultra Lean	1.25	1.5	0.4	3.5	0.05	11.2	32.0:1	19.2:1	2.00

‡ The AT-GL emission levels are based on 900 – 1000 rpm operation. For information at all other speeds contact Waukesha's Sales Engineering Department.

VHP EMISSION LEVELS

MODEL	CARBURETOR SETTING	GRAMS/BHP-HR				% OBSERVED DRY		MASS AFR ⁽²⁾	VOLUME AFR ⁽²⁾	EXCESS AIR RATIO
		NOx ⁽¹⁾	CO	NMHC ⁽⁴⁾	THC	CO	O ₂			
G, GSI	Lowest Manifold (Best Power)	8.5	32.0	0.35	2.3	1.15	0.30	15.5:1	9.3:1	0.97
	Equal NOx & CO	12.0	12.0	0.35	2.3	0.45	0.30	15.9:1	9.6:1	0.99
	Catalytic Conv. Input (3-way ⁽³⁾)	13.0	9.0	0.30	2.0	0.38	0.30	15.95:1	9.6:1	0.99
	Standard (Best Economy)	22.0	1.5	0.25	1.5	0.02	1.35	17.0:1	10.2:1	1.06
F3524GSI, L7044GSI	Equal NOx & CO	14.0	14.0	0.25	1.1	0.45	0.30	15.85:1	9.5:1	0.99
	Catalytic Conv. Input (3-way ⁽³⁾)	15.0	13.0	0.20	1.0	0.38	0.30	15.95:1	9.6:1	0.99
	Standard (Best Economy)	23.0	2.0	0.20	0.8	0.02	1.35	17.0:1	10.2:1	1.06
L5794GSI	Equal NOx & CO	13.5	13.5	0.45	3.0	0.45	0.30	15.85:1	9.5:1	0.99
	Catalytic Conv. Input (3-way ⁽³⁾)	14.5	11.0	0.45	2.9	0.38	0.30	15.95:1	9.6:1	0.99
	Standard (Best Economy)	22.0	3.0	0.35	2.4	0.02	1.35	17.0:1	10.2:1	1.06
GL	Standard	1.5	2.65	1.0	5.5	0.06	9.8	28.0:1	16.8:1	1.74
L5774LT*	Standard	2.6	2.0	0.60	4.0	0.04	8.0	24.7:1	14.8:1	1.54
L5794LT*	Standard	2.6	2.0	0.60	4.0	0.04	7.8	24.5:1	14.7:1	1.52

* L5774LT and L5794LT emission levels are based on 1000 – 1200 rpm operation. For information at all other speeds contact Waukesha's Sales Engineering Department.

NOTE: The above tables indicate emission levels that are valid for new engines for the duration of the standard warranty period and are attainable by an engine in good operating condition running on commercial quality natural gas of 900 BTU/ft³ (35.38 MJ/m³ [25, V(0; 101.325)]) SLHV, Waukesha Knock Index™ of 91 or higher, 93% methane content by volume, and at ISO standard conditions. Emissions are based on standard engine timing at 91 WKI™ with an absolute humidity of 42 grains/lb. Refer to engine specific WKI™ Power & Timing curves for standard timing. Unless otherwise noted these emission levels can be achieved across the continuous duty speed range and from 75% to 110% of the ISO Standard Power (continuous duty) rating. **Contact your local Waukesha representative or Waukesha's Sales Engineering Department for emission values which can be obtained on a case-by-case basis for specific ratings, fuels, and site conditions.**



GAS ENGINE EXHAUST EMISSION LEVELS	EN: 125515 DATE: 4/01	Ref. S 8483-4
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HEAT REJECTION 3

HEAT REJECTION AND OPERATING DATA MODEL L7042GL 130° F INTERCOOLER WATER TEMPERATURE 180° F JACKET WATER TEMPERATURE

	BMEP (PSI)	ENGINE SPEED — RPM				
		LOW SPEED TURBOCHARGER			HIGH SPEED TURBOCHARGER	
		700	900	1000	1000	1200
HORSEPOWER (BHP)	152	—	—	1355	1355	1626
	138	—	1108	1232	1232	1478
	125	—	1000	1111	1111	1333
	100	622	800	889	889	1067
	75	467	600	667	667	800
	50	311	400	444	444	533
BRAKE SPEC FUEL CONSUMPTION (BTU/BHP-HR)	152	—	—	7061	6891	7168
	138	—	6889	7151	6984	7274
	125	—	6991	7259	7095	7401
	100	7051	7252	7535	7379	7726
	75	7492	7687	7995	7852	8267
	50	8374	8558	8914	8798	9349
FUEL CONSUMPTION (BTU/HR X 1000)	152	—	—	9565	9335	11650
	138	—	7635	8805	8600	10750
	125	—	6990	8065	7885	9870
	100	4385	5800	6700	6560	8240
	75	3495	4610	5330	5235	6615
	50	2605	3425	3960	3910	4985
HEAT TO JACKET WATER (BTU/HR X 1000)	152	—	—	2510	2400	3010
	138	—	1995	2335	2235	2815
	125	—	1850	2165	2070	2630
	100	1202	1585	1850	1775	2280
	75	1015	1323	1535	1475	1930
	50	829	1059	1219	1177	1585
HEAT TO LUBE OIL (BTU/HR X 1000)	152	—	—	372	358	449
	138	—	277	353	340	430
	125	—	263	334	323	412
	100	177	238	29	291	379
	75	155	213	264	258	346
	50	133	188	229	226	313
HEAT TO INTERCOOLER (BTU/HR X 1000)	152	—	—	532	452	616
	138	—	355	447	368	543
	125	—	291	370	295	472
	100	85	187	244	180	340
	75	25.5	98.5	139	91.5	207
	50	2	26.5	56.5	29.5	73
HEAT TO RADIATION (BTU/HR X 1000)	152	—	—	303	308	332
	138	—	294	302	305	328
	125	—	294	301	304	323
	100	282	292	300	304	314
	75	281	292	303	309	311
	50	280	292	317	318	320



HEAT REJECTION AND OPERATING DATA MODEL L7042GL 130° F INTERCOOLER WATER TEMPERATURE 180° F JACKET WATER TEMPERATURE	EN: 120301 DATE: 1/03	Ref. S 6124-63
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HEAT REJECTION 3

HEAT REJECTION AND OPERATING DATA MODEL L7042GL 130° F INTERCOOLER WATER TEMPERATURE 180° F JACKET WATER TEMPERATURE

	BMEP (PSI)	ENGINE SPEED — RPM				
		LOW SPEED TURBOCHARGER			HIGH SPEED TURBOCHARGER	
		700	900	1000	1000	1200
TOTAL ENERGY IN EXHAUST (BTU/HR X 1000)	152	—	—	2595	2580	3370
	138	—	2060	2390	2380	3085
	125	—	1890	2190	2180	2805
	100	1179	1575	1830	1830	2310
	75	942	1272	1494	1498	1865
	50	722	985	1188	1198	1485
EXHAUST TEMP AFTER TURBINE (± 50° F)	152	—	—	673	683	719
	138	—	661	669	679	709
	125	—	659	666	676	699
	100	645	656	664	675	684
	75	638	655	671	683	679
	50	620	653	690	704	691
INDUCTION AIR FLOW (SCFM)	152	—	—	3120	3045	3800
	138	—	2485	2865	2800	3500
	125	—	2275	2620	2565	3210
	100	1430	1885	2180	2135	2685
	75	1140	1500	1740	1705	2155
	50	845	1110	1285	1270	1620
EXHAUST GAS FLOW (LBS/HR)	152	—	—	14165	13825	17200
	138	—	11290	13020	12715	15890
	125	—	10330	11920	11645	14580
	100	6485	8585	9910	9710	12195
	75	5170	6830	7890	7750	9795
	50	3855	5050	5840	5765	7350

NOTES:

1. All data are based on ISO standard conditions of 29.54 inches Hg. barometric pressure, 77°F ambient and induction air temperature, 30% relative humidity (0.3 inches of water vapor pressure), 180°F engine jacket water outlet temperature, and standard 10° BTDC ignition timing.
2. Data are average values at the standard conditions and will vary for individual engines and with operating and ambient conditions and with changes to ignition timing or air/fuel ratio. An adequate reserve should be used for cooling system or heat recovery calculations. See also Cooling System Guidelines S-6699-7, latest version.
3. ISO Standard (continuous) power ratings conform to ISO 3046/1, latest version, with a mechanical efficiency of 90% and auxiliary water temperature, T_{cra}, of 130°F limited to ± 10°F.
4. Fuel rating standard; dry natural gas, 900 Btu/scf saturated lower heating value (SLHV), with a minimum 90 WKI™. Refer to S-7884-7, latest version, for the full fuel specification.
5. For heat rejection changes due to engine jacket water outlet temperature higher than standard (Note 1), refer to S-7613-3, latest version.
6. Total Exhaust Energy includes both recoverable and non-recoverable heat. For a procedure to calculate recoverable heat refer to S-8117-2, latest version.
7. Exhaust oxygen concentration set to 9.8% at rated speed and load at standard timing to provide 1.5 g/bhp-hr NO_x, or less. This level is to be measured at the port located in the exhaust manifold, upstream of the turbocharger, for GL engines.
8. Reference curve C-968-19.
9. Exhaust flow at nominal 29.54 inches Hg. barometric pressure:

$$\text{Flow rate: ACFM} = \frac{(\text{Exh. Flow, lb/hr}) \times (\text{Exh. Temp. } ^\circ\text{F} + 460^\circ)}{2275}$$



HEAT REJECTION AND OPERATING DATA MODEL L7042GL 130° F INTERCOOLER WATER TEMPERATURE 180° F JACKET WATER TEMPERATURE	EN: 120301 DATE: 1/03	Ref. S 6124-63
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HEAT REJECTION 3

— METRIC —
HEAT REJECTION AND OPERATING DATA — MODEL L7042GL
54° C INTERCOOLER WATER TEMPERATURE — 82° C JACKET WATER TEMPERATURE

	BMEP (bar)	ENGINE SPEED — RPM				
		LOW SPEED TURBOCHARGER			HIGH SPEED TURBOCHARGER	
		700	900	1000	1000	1200
HORSEPOWER (kW)	10.51	—	—	1010	1010	1212
	9.54	—	827	918	918	1102
	8.62	—	746	829	829	994
	6.9	464	597	663	663	795
	5.17	348	447	497	497	597
	3.45	232	298	331	331	398
BRAKE SPEC FUEL CONSUMPTION (kJ/kWh)	10.51	—	—	9990	9750	10142
	9.54	—	9747	10118	9882	10292
	8.62	—	9891	10270	10039	10472
	6.9	9976	10261	10661	10440	10931
	5.17	10600	10877	11311	11110	11697
	3.45	11848	12108	12612	12448	13228
FUEL CONSUMPTION (kW)	10.51	—	—	2803	2736	3415
	9.54	—	2238	2581	2521	3151
	8.62	—	2049	2364	2310	2892
	6.9	1286	1700	1963	1922	2415
	5.17	1025	1352	1562	1534	1938
	3.45	764	1003	1161	1146	1461
HEAT TO JACKET WATER (kW)	10.51	—	—	735	703	882
	9.54	—	585	684	655	825
	8.62	—	543	634	607	770
	6.9	352	465	542	520	668
	5.17	298	388	449	432	566
	3.45	243	310	357	345	464
HEAT TO LUBE OIL (kW)	10.51	—	—	109	105	132
	9.54	—	81	103	100	126
	8.62	—	77	98	95	121
	6.9	52	70	88	85	111
	5.17	45	63	77	76	101
	3.45	39	55	67	66	92
HEAT TO INTERCOOLER (kW)	10.51	—	—	156	132	180
	9.54	—	104	131	108	159
	8.62	—	85	108	86	138
	6.9	25	55	71	53	100
	5.17	7	29	41	27	61
	3.45	1	8	16	9	21
HEAT TO RADIATION (kW)	10.51	—	—	89	90	97
	9.54	—	86	89	89	96
	8.62	—	86	88	89	95
	6.9	83	86	88	89	92
	5.17	82	86	89	90	91
	3.45	82	85	93	93	94



— METRIC — HEAT REJECTION AND OPERATING DATA — MODEL L7042GL 54° C INTERCOOLER WATER TEMPERATURE 82° C JACKET WATER TEMPERATURE	EN: 120301 DATE: 1/03	Ref. S 6124-63
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HEAT REJECTION 3

— METRIC —
HEAT REJECTION AND OPERATING DATA — MODEL L7042GL
54° C INTERCOOLER WATER TEMPERATURE — 82° C JACKET WATER TEMPERATURE

	BMEP (bar)	ENGINE SPEED — RPM				
		LOW SPEED TURBOCHARGER			HIGH SPEED TURBOCHARGER	
		700	900	1000	1000	1200
TOTAL ENERGY IN EXHAUST (kW)	10.51	—	—	761	756	988
	9.54	—	603	700	697	904
	8.62	—	554	642	640	822
	6.9	346	462	536	536	677
	5.17	276	373	438	439	547
	3.45	211	289	348	351	435
EXHAUST TEMP AFTER TURBINE (± 30° C)	10.51	—	—	356	362	381
	9.54	—	349	354	360	376
	8.62	—	348	352	358	371
	6.9	341	347	351	357	362
	5.17	337	346	355	362	359
	3.45	327	345	365	373	366
INDUCTION AIR FLOW (nm³/h)	10.51	—	—	4793	4678	5839
	9.54	—	3818	4403	4301	5375
	8.62	—	3494	4031	3940	4932
	6.9	2195	2904	3352	3283	4125
	5.17	1749	2310	2670	2622	3313
	3.45	1306	1707	1975	1949	2486
EXHAUST GAS FLOW (kg/h)	10.51	—	—	6427	6273	7830
	9.54	—	5120	5905	5768	7209
	8.62	—	4686	5406	5284	6614
	6.9	2943	3894	4496	4403	5532
	5.17	2345	3098	3580	3516	4442
	3.45	1751	2289	2649	2615	3334

NOTES:

1. All data are based on ISO standard conditions of 100 kPa barometric pressure, 25°C ambient and induction air temperature, 30% relative humidity, (1 kPa water vapor pressure), 82°C engine jacket water outlet temperature, and standard 10° BTDC ignition timing.
2. Data are average values at the standard conditions and will vary for individual engines and with operating and ambient conditions and with changes to ignition timing or air/fuel ratio. An adequate reserve should be used for cooling system or heat recovery calculations. See also Cooling System Guidelines S-6699-7, latest version.
3. ISO Standard (continuous) power ratings conform to ISO 3046/1, latest version, with a mechanical efficiency of 90% and auxiliary water temperature, T_{cra}, of 54°C limited to ± 5.5°C.
4. Fuel standard: dry natural gas, 35.38 MJ/m³ [25, V (0; 101.325)] saturated lower heating value (SLHV), with a minimum Waukesha Knock Index of 91. Refer to S-7884-7, latest version, for the full fuel specification.
5. For heat rejection changes due to engine jacket water outlet temperature higher than standard (Note 1), refer to S-7613-3, latest version.
6. Total Exhaust Energy includes both recoverable and non-recoverable heat. For a procedure to calculate recoverable heat refer to S-8117-2, latest version.
7. Exhaust oxygen concentration set to 9.8% at rated speed and load at standard timing to provide 1.5 g/bhp-hr NO_x, or less. This level is to be measured at the port located in the exhaust manifold, upstream of the turbocharger, for GL engines.
8. Reference curve C-968-19.
9. Exhaust flow at nominal 100 kPa barometric pressure:

$$\text{Flow rate: } m^3/hr = \frac{(\text{Exh. Flow, kg/hr}) \times (\text{Exh. Temp. } ^\circ\text{C} + 273^\circ)}{336.66}$$



<p>— METRIC — HEAT REJECTION AND OPERATING DATA — MODEL L7042GL 54° C INTERCOOLER WATER TEMPERATURE 82° C JACKET WATER TEMPERATURE</p>	<p>EN: 120301 DATE: 1/03</p>	<p>Ref. S 6124-63</p>
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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 NO_x control, such as PCC and SCR for lean burn engines, and PSC for rich burn engines. Factors are based on large population of engines. Factors are for engines at all loads, except as indicated. SCC = Source Classification Code. TOC = Total Organic Compounds. 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/10⁶ scf), multiply by the heat content of the fuel. If the heat content is not available, use 1020 Btu/scf. To convert from (lb/MMBtu) to (lb/hp-hr) use the following equation:

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

^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 CO₂. CO₂ [lb/MMBtu] = (3.67)(%CON)(C)(D)(1/h), where %CON = percent conversion of fuel carbon to CO₂, C = carbon content of fuel by weight (0.75), D = density of fuel, 4.1 E+04 lb/10⁶ scf, and

- h = heating value of natural gas (assume 1020 Btu/scf at 60°F).
- ^e Based on 100% conversion of fuel sulfur to SO₂. Assumes sulfur content in natural gas of 2,000 gr/10⁶ scf.
- ^f Emission factor for TOC is based on measured emission levels from 22 source tests.
- ^g Emission factor for methane is determined by subtracting the VOC and ethane emission factors from the TOC emission factor. Measured emission factor for methane compares well with the calculated emission factor, 1.31 lb/MMBtu vs. 1.25 lb/MMBtu, respectively.
- ^h VOC emission factor is based on the sum of the emission factors for all speciated organic compounds less ethane and methane.
- ⁱ Considered $\leq 1 \mu\text{m}$ in aerodynamic diameter. Therefore, for filterable PM emissions, PM10(filterable) = PM2.5(filterable).
- ^j PM Condensable = PM Condensable Inorganic + PM-Condensable Organic
- ^k Hazardous Air Pollutant as defined by Section 112(b) of the Clean Air Act.
- ^l For lean burn engines, aldehyde emissions quantification using CARB 430 may reflect interference with the sampling compounds due to the nitrogen concentration in the stack. The presented emission factor is based on FTIR measurements. Emissions data based on CARB 430 are available in the background report.

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

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

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

VOC = Volatile Organic Compounds.

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

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

^d Based on 100% conversion of fuel sulfur to SO₂. Assumes sulfur content is natural gas of 2,000 grains/10⁶ scf. The SO₂ emission factor in this table can be converted to other natural gas sulfur contents by multiplying the SO₂ emission factor by the ratio of the site-specific sulfur content (grains/10⁶ scf) to 2,000 grains/10⁶ scf.

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

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

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

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

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

Extended Gas Analysis

Gas Composition

Components	Mole Percents, %	Molecular Weights, lb/lb-mole	Emission Factors, lb/scf
Carbon dioxide	19.5971	44.01	2.273E-02
Hydrogen sulfide	0.0000	34.07	0.000E+00
Nitrogen	0.0826	28.01	6.098E-05
Methane	78.0041	16.04	3.298E-02
Ethane	1.7814	30.07	1.412E-03
Propane	0.4200	44.09	4.881E-04
Isobutane	0.0587	58.12	8.992E-05
n-Butane	0.0517	58.12	7.920E-05
Isopentane	0.0044	72.15	8.367E-06
n-Pentane	0.0000	72.15	0.000E+00
Cyclopentane	0.0000	70.14	0.000E+00
n-Hexane	0.0000	86.17	0.000E+00
Cyclohexane	0.0000	84.16	0.000E+00
Other hexanes	0.0000	86.18	0.000E+00
Heptanes	0.0000	100.20	0.000E+00
Methylcyclohexane	0.0000	98.19	0.000E+00
2,2,4-Trimethylpentane	0.0000	100.21	0.000E+00
Benzene	0.0000	78.11	0.000E+00
Toluene	0.0000	92.14	0.000E+00
Ethylbenzene	0.0000	106.17	0.000E+00
Xylenes	0.0000	106.17	0.000E+00
C8+ Heavies	0.0000	110.00	0.000E+00
Total	100.0000		
Total VOC			6.656E-04

Blended gas stream composition obtained from the 29-6 #4 Dehy Inlet gas analysis sampled Apr 20, 2021.

Emission Factors (lb/scf) = (% / 100) x lb/lb-mole / 379.4 scf/lb-mole



2030 Afton Place
 Farmington, NM 87401
 (505) 325-6622

Analysis No: HM2021028
 Cust No: 33700-10395

Well/Lease Information

Customer Name: HARVEST MIDSTREAM
 Well Name: 29-6 #4 Dehy Inlet
 County/State: Rio Arriba
 Location:
 Lease/PA/CA:
 Formation:
 Cust. Stn. No.:

Source: Dehy Inlet
 Well Flowing:
 Pressure: 915 PSIG
 Flow Temp: 84 DEG. F
 Ambient Temp: 53 DEG. F
 Flow Rate: 6 MCF/D
 Sample Method: Purge & Fill
 Sample Date: 04/20/2021
 Sample Time: 4.00 PM
 Sampled By: Dan Weyranch
 Sampled by (CO): Harvest Mid

Heat Trace:

Remarks: Calculated Molecular Weight = 21.9502

Analysis

Component:	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.0826	0.0818	0.0090	0.00	0.0008
CO2	19.5971	19.4171	3.3530	0.00	0.2978
Methane	78.0041	77.2876	13.2560	787.84	0.4321
Ethane	1.7814	1.7650	0.4780	31.52	0.0185
Propane	0.4200	0.4161	0.1160	10.57	0.0064
Iso-Butane	0.0587	0.0582	0.0190	1.91	0.0012
N-Butane	0.0517	0.0512	0.0160	1.69	0.0010
Neopentane 2,2 dmc3	0.0000	0.0000	0.0000	0.00	0.0000
I-Pentane	0.0044	0.0044	0.0020	0.18	0.0001
N-Pentane	0.0000	0.0000	0.0000	0.00	0.0000
Neohexane	0.0000	N/R	0.0000	0.00	0.0000
2-3-Dimethylbutane	0.0000	N/R	0.0000	0.00	0.0000
Cyclopentane	0.0000	N/R	0.0000	0.00	0.0000
2-Methylpentane	0.0000	N/R	0.0000	0.00	0.0000
3-Methylpentane	0.0000	N/R	0.0000	0.00	0.0000
C6	0.0000	0.0000	0.0000	0.00	0.0000
Methylcyclopentane	0.0000	N/R	0.0000	0.00	0.0000
Benzene	0.0000	N/R	0.0000	0.00	0.0000
Cyclohexane	0.0000	N/R	0.0000	0.00	0.0000
2-Methylhexane	0.0000	N/R	0.0000	0.00	0.0000
3-Methylhexane	0.0000	N/R	0.0000	0.00	0.0000
2-2-4-Trimethylpentane	0.0000	N/R	0.0000	0.00	0.0000
i-heptanes	0.0000	N/R	0.0000	0.00	0.0000
Heptane	0.0000	N/R	0.0000	0.00	0.0000

Methylcyclohexane	0.0000	N/R	0.0000	0.00	0.0000
Toluene	0.0000	N/R	0.0000	0.00	0.0000
2-Methylheptane	0.0000	N/R	0.0000	0.00	0.0000
4-Methylheptane	0.0000	N/R	0.0000	0.00	0.0000
i-Octanes	0.0000	N/R	0.0000	0.00	0.0000
Octane	0.0000	N/R	0.0000	0.00	0.0000
Ethylbenzene	0.0000	N/R	0.0000	0.00	0.0000
m, p Xylene	0.0000	N/R	0.0000	0.00	0.0000
o Xylene (& 2,2,4 tmc7)	0.0000	N/R	0.0000	0.00	0.0000
i-C9	0.0000	N/R	0.0000	0.00	0.0000
C9	0.0000	N/R	0.0000	0.00	0.0000
i-C10	0.0000	N/R	0.0000	0.00	0.0000
C10	0.0000	N/R	0.0000	0.00	0.0000
i-C11	0.0000	N/R	0.0000	0.00	0.0000
C11	0.0000	N/R	0.0000	0.00	0.0000
C12P	0.0000	N/R	0.0000	0.00	0.0000
Total	100.00	99.081	17.249	833.71	0.7579

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.0027
 BTU/CU.FT IDEAL: 835.6
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 837.9
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 823.3
 DRY BTU @ 15.025: 854.7
 REAL SPECIFIC GRAVITY: 0.7596

CYLINDER #: 02
 CYLINDER PRESSURE: 915 PSIG
 ANALYSIS DATE: 04/21/2021
 ANALYSIS TIME: 02:28:21 AM
 ANALYSIS RUN BY: PATRICIA KING

GPM, BTU, and SPG calculations as shown above are based on current GPA constants.

GPA Standard: GPA 2286-14

GC: SRI Instruments 8610 Last Cal/Verify: 04/22/2021

GC Method: C12+BTEX Gas



HARVEST MIDSTREAM
WELL ANALYSIS COMPARISON

Lease: 29-6 #4 Dehy Inlet

Dehy Inlet

04/22/2021

Stn. No.:

33700-10395

Mtr. No.:

Smpl Date:	04/20/2021	06/03/2020	11/04/2019
Test Date:	04/21/2021	06/04/2020	11/07/2019
Run No:	HM2021028	HM200053	HM190077
Nitrogen:	0.0826	0.0694	0.0699
CO2:	19.5971	19.0827	20.1934
Methane:	78.0041	78.9248	77.6358
Ethane:	1.7814	1.5149	1.5961
Propane:	0.4200	0.3154	0.3971
I-Butane:	0.0587	0.0423	0.0516
N-Butane:	0.0517	0.0367	0.0393
2,2 dmc3:	0.0000	0.0000	0.0000
I-Pentane:	0.0044	0.0035	0.0063
N-Pentane:	0.0000	0.0010	0.0026
Neohexane:	0.0000	0.0002	0.0000
2-3-	0.0000	0.0001	0.0001
Cyclopentane:	0.0000	0.0001	0.0001
2-Methylpentane:	0.0000	0.0006	0.0008
3-Methylpentane:	0.0000	0.0002	0.0003
C6:	0.0000	0.0007	0.0010
Methylcyclopentane:	0.0000	0.0005	0.0009
Benzene:	0.0000	0.0003	0.0002
Cyclohexane:	0.0000	0.0003	0.0004
2-Methylhexane:	0.0000	0.0001	0.0001
3-Methylhexane:	0.0000	0.0000	0.0000
2-2-4-	0.0000	0.0000	0.0001
i-heptanes:	0.0000	0.0001	0.0001
Heptane:	0.0000	0.0007	0.0006
Methylcyclohexane:	0.0000	0.0014	0.0010
Toluene:	0.0000	0.0011	0.0004
2-Methylheptane:	0.0000	0.0004	0.0003
4-Methylheptane:	0.0000	0.0002	0.0001
i-Octanes:	0.0000	0.0003	0.0002
Octane:	0.0000	0.0006	0.0004
Ethylbenzene:	0.0000	0.0000	0.0002
m, p Xylene:	0.0000	0.0007	0.0000
o Xylene (& 2,2,4	0.0000	0.0001	0.0000
i-C9:	0.0000	0.0001	0.0002
C9:	0.0000	0.0002	0.0001
i-C10:	0.0000	0.0001	0.0000
C10:	0.0000	0.0001	0.0000
i-C11:	0.0000	0.0000	0.0000
C11:	0.0000	0.0000	0.0000
C12P:	0.0000	0.0000	0.0000
BTU:	837.9	839.2	830.2
GPM:	17.2490	17.2100	17.2310
SPG:	0.7596	0.7520	0.7642

915#



C6+ C9+ C12+ BTEX Helium

N2 Flowback Sulfurs Ext. Liquid

Other _____ Date 4-20-21

Sampled By:(Co.) HARVEST MIDSTREAM Time 4:00 AM PM

Sampled by:(Person) DAN WEYRAUCH Well Flowing: Yes No

Company: _____ Heat Trace: Yes No

Well Name: 29-6 #4 CDP 1 Flow Pressure (PSIG): 915

Lease#: _____ Flow Temp (°F): 84

County: RIO ARriba Formation: _____ Ambient Temp (°F): 53

State: N.M. Location: _____ Flow Rate (MCF/D): 6

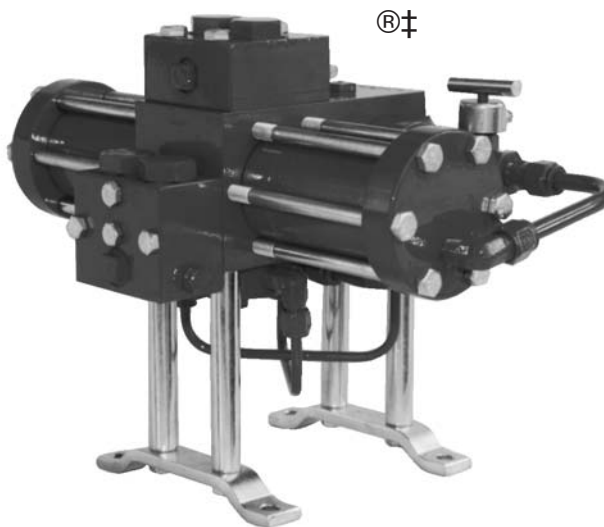
Source: Meter Run Tubing Casing Bradenhead Other _____

Sample Type: Spot Composite Sample Method: Purge & Fill Other DEHY INLET

Meter Number: _____ Cylinder Number: 02

Contact: DAN WEYRAUCH 505-787-7705

Remarks: 33700-10585 HIN 2021028



PUMPS AVAILABLE:

"PV" SERIES GLYCOL PUMPS					
Catalog Number	Model Number	Capacity Gal. / Hr.		Working Pressure	
		Min.	Max. **	Min.	Max.
GAA	315 PV	3	13	100	1500
GAD	1715 PV	8	40	300	1500
GAB	4015 PV	12	40	300	1500
GAF	9015 PV	27	90	300	1500
GAH	21015 PV	66	210	400	1500
GAJ	45015 PV	166	450	400	1500

"SC" SERIES GLYCOL PUMPS					
Catalog Number	Model Number	Capacity Gal. / Hr.		Working Pressure	
		Min.	Max. **	Min.	Max.
GAC	2015 SC*	8	20	100	500
GAG	5015 SC*	12	50	100	500
GAI	10015 SC*	22	100	100	500
GAK	20015 SC*	60	200	100	500

**Maximum output is affected by system pressure drops. See system operation parameter for maximum output curves.

NOTE: To order a Pump with Viton O Rings add 1 to Catalog number. Example: To order GAA with Viton O Rings, specify: GAA1.

MAXIMUM DESIGN PRESSURE FOR P.V. AND S.C. MODELS IS 1500 psig

APPLICATIONS:

- Circulating pump for gas glycol dehydrators
- Circulating pump for gas amine desulphurizers

FEATURES:

- Eliminates absorber liquid level controls
- No auxiliary power supply required
- Low gas consumption
- Completely sealed system prevents loss glycol
- No springs or toggles, only two moving assemblies
- Hydraulic "cushioned" check valves with removable seats of hardened stainless steel

OPERATION:

Materials for the vital working parts have been selected for greatest wear resistance. These materials include stainless steel, hard chrome plating, satellite, nylon and teflon. Moving "O" Ring seals are compounded specifically for ethylene glycol service. A complete operational check is given each pump after assembly.

"O" Ring sealed check valve darts are standard in all except the model 315 PV. Teflon sealed darts are available. Capsule type ball checks are used in the 315 PV and are available for 1715 PV, 2015 SC and 4015 PV.

*These pumps are designed for operating pressures between 100 and 500 psig maximum design pressure for all models is 1500 psig.

‡Configuration of Glycol Pump is a trademark of Kimray, Inc.

Oil and Gas
Production Equipment
J. Enverek, Inc.
4901 East Main Street
Farmington, NM 87401
505/326-1151
fax 505/322-0317



VIA FACSIMILE
Fax No. (505) 534-7760
Page: 1

August 19, 1994

Mr. Leo Bauerle
Williams Field Services
Salt Lake City, UT

The following table shows the stack emissions at maximum firing conditions for the dehydrators noted:

Dehydrator	NO _x #/Day	CO #/Day	Fuel SCFH	Total Stack Gross ACEH	Stack Ht. Ft	Stack Dia Inches	Stack Temp. F	Stack Velocity FPS
J2P10M11109	0.86	0.17	357	10010	18'-8"	8	600	5.1
J2P10M749	1.03	0.21	429	12012	19'-1"	10	600	6.1
J2P12M11109	0.86	0.17	357	10010	18'-8"	8	600	5.1
J2P12M749	1.03	0.21	429	12012	19'-1"	10	600	6.1
J2P20M11109	1.03	0.21	429	12012	19'-1"	10	600	6.1

Please call me if you need additional information.

Sincerely,
Frosty Heath
Frosty Heath

FH/ab

5928 U.S. Highway 64
Farmington, NM 87401



Office: (505)632-2200
Fax: (505)632-8070

July 22, 1998

Mr. Bobby Myers
Williams Field Services
Environmental Affairs
295 Chipeta Way
P O Box 58900
Salt Lake City, UT 84158-0900

The table shown below gives the stack emissions for our larger dehydrators:

Unit Description	SO lb/day	NO _x lb/Day	CO lb/Day	Fuel SCFH	Total Organic Comp. Lb/d	Stack Ht. Ft.	Stack Dia inches	Stack Temp °F	Stack Velocity
10 MM LP	.01	.27	.43	659	.13	10'	8	600	5.1
10 MM HP	.01	.27	.43	659	.13	10'	10	600	6.1
12 MM LP	.02	.49	.78	1208	.25	10'	8	600	5.1
12 MM HP	.02	.49	.78	1208	.25	10'	10	600	6.1
15 MM	.02	.54	.85	1318	.25	10'	8	600	5.1
20 MM LP	.02	.67	1.07	1648	.31	10'	8	600	5.1
20 MM HP	.02	.67	1.07	1648	.31	10'	12	600	6.1

If you need any additional information please call me.

Sincerely,

A handwritten signature in cursive script that reads "Darby West".

Darby West
VP Engineering

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

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

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

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

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

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

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

where:

L_L = loading loss, pounds per 1000 gallons ($\text{lb}/10^3 \text{ gal}$) of liquid loaded

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

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

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

T = temperature of bulk liquid loaded, $^{\circ}\text{R}$ ($^{\circ}\text{F} + 460$)

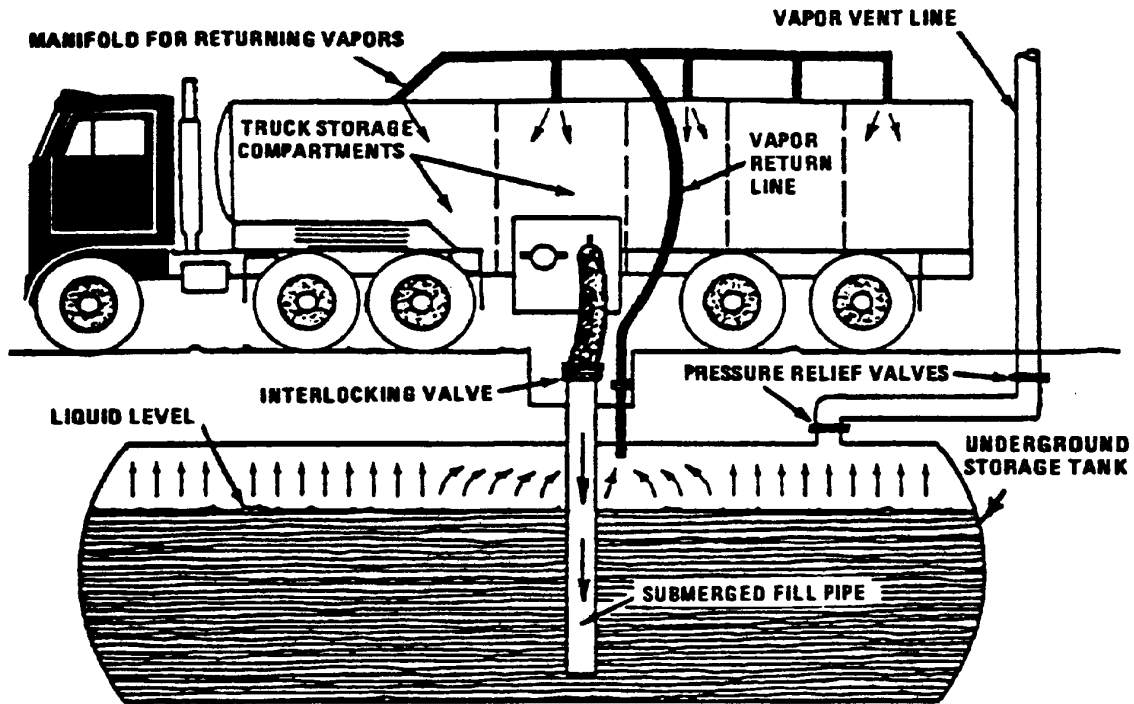


Figure 5.2-5. Tank truck unloading into a service station underground storage tank and practicing "vapor balance" form of emission control.

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

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

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

1995 Protocol for Equipment Leak Emission Estimates

Emission Standards Division

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air and Radiation
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

November 1995

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

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

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

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

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

Table A-1 to Subpart A of Part 98—Global Warming Potentials

[100-Year Time Horizon]

Name	CAS No.	Chemical formula	Global warming potential (100 yr.)
Carbon dioxide	124-38-9	CO ₂	1
Methane	74-82-8	CH ₄	^a 25
Nitrous oxide	10024-97-2	N ₂ O	^a 298
HFC-23	75-46-7	CHF ₃	^a 14,800
HFC-32	75-10-5	CH ₂ F ₂	^a 675
HFC-41	593-53-3	CH ₃ F	^a 92
HFC-125	354-33-6	C ₂ HF ₅	^a 3,500
HFC-134	359-35-3	C ₂ H ₂ F ₄	^a 1,100
HFC-134a	811-97-2	CH ₂ FCF ₃	^a 1,430
HFC-143	430-66-0	C ₂ H ₃ F ₃	^a 353
HFC-143a	420-46-2	C ₂ H ₃ F ₃	^a 4,470
HFC-152	624-72-6	CH ₂ FCH ₂ F	53
HFC-152a	75-37-6	CH ₃ CHF ₂	^a 124
HFC-161	353-36-6	CH ₃ CH ₂ F	12
HFC-227ea	431-89-0	C ₃ HF ₇	^a 3,220
HFC-236cb	677-56-5	CH ₂ FCF ₂ CF ₃	1,340
HFC-236ea	431-63-0	CHF ₂ CHF ₂ CF ₃	1,370
HFC-236fa	690-39-1	C ₃ H ₂ F ₆	^a 9,810
HFC-245ca	679-86-7	C ₃ H ₃ F ₅	^a 693
HFC-245fa	460-73-1	CHF ₂ CH ₂ CF ₃	1,030
HFC-365mfc	406-58-6	CH ₃ CF ₂ CH ₂ CF ₃	794
HFC-43-10mee	138495-42-8	CF ₃ CFHCFHCF ₂ CF ₃	^a 1,640
Sulfur hexafluoride	2551-62-4	SF ₆	^a 22,800
Trifluoromethyl sulphur pentafluoride	373-80-8	SF ₅ CF ₃	17,700
Nitrogen trifluoride	7783-54-2	NF ₃	17,200
PFC-14 (Perfluoromethane)	75-73-0	CF ₄	7,390
PFC-116 (Perfluoroethane)	76-16-4	C ₂ F ₆	^a 12,200
PFC-218 (Perfluoropropane)	76-19-7	C ₃ F ₈	^a 8,830

Name	CAS No.	Chemical formula	Global warming potential (100 yr.)
Perfluorocyclopropane	931-91-9	C-C ₃ F ₆	17,340
PFC-3-1-10 (Perfluorobutane)	355-25-9	C ₄ F ₁₀	^a 8,860
Perfluorocyclobutane	115-25-3	C-C ₄ F ₈	^a 10,300
PFC-4-1-12 (Perfluoropentane)	678-26-2	C ₅ F ₁₂	^a 9,160
PFC-5-1-14 (Perfluorohexane)	355-42-0	C ₆ F ₁₄	^a 9,300
PFC-9-1-18	306-94-5	C ₁₀ F ₁₈	7,500
HCFE-235da2 (Isoflurane)	26675-46-7	CHF ₂ OCHClCF ₃	350
HFE-43-10pccc (H-Galden 1040x)	E1730133	CHF ₂ OCF ₂ OC ₂ F ₄ OCHF ₂	1,870
HFE-125	3822-68-2	CHF ₂ OCF ₃	14,900
HFE-134	1691-17-4	CHF ₂ OCHF ₂	6,320
HFE-143a	421-14-7	CH ₃ OCF ₃	756
HFE-227ea	2356-62-9	CF ₃ CHFOCF ₃	1,540
HFE-236ca12 (HG-10)	78522-47-1	CHF ₂ OCF ₂ OCHF ₂	2,800
HFE-236ea2 (Desflurane)	57041-67-5	CHF ₂ OCHF ₂ CF ₃	989
HFE-236fa	20193-67-3	CF ₃ CH ₂ OCF ₃	487
HFE-245cb2	22410-44-2	CH ₃ OCF ₂ CF ₃	708
HFE-245fa1	84011-15-4	CHF ₂ CH ₂ OCF ₃	286
HFE-245fa2	1885-48-9	CHF ₂ OCH ₂ CF ₃	659
HFE-254cb2	425-88-7	CH ₃ OCF ₂ CHF ₂	359
HFE-263fb2	460-43-5	CF ₃ CH ₂ OCH ₃	11
HFE-329mcc2	67490-36-2	CF ₃ CF ₂ OCF ₂ CHF ₂	919
HFE-338mcf2	156053-88-2	CF ₃ CF ₂ OCH ₂ CF ₃	552
HFE-338pcc13 (HG-01)	188690-78-0	CHF ₂ OCF ₂ CF ₂ OCHF ₂	1,500
HFE-347mcc3	28523-86-6	CH ₃ OCF ₂ CF ₂ CF ₃	575
HFE-347mcf2	E1730135	CF ₃ CF ₂ OCH ₂ CHF ₂	374
HFE-347pcf2	406-78-0	CHF ₂ CF ₂ OCH ₂ CF ₃	580
HFE-356mec3	382-34-3	CH ₃ OCF ₂ CHF ₂ CF ₃	101
HFE-356pcc3	160620-20-2	CH ₃ OCF ₂ CF ₂ CHF ₂	110
HFE-356pcf2	E1730137	CHF ₂ CH ₂ OCF ₂ CHF ₂	265
HFE-356pcf3	35042-99-0	CHF ₂ OCH ₂ CF ₂ CHF ₂	502

Name	CAS No.	Chemical formula	Global warming potential (100 yr.)
HFE-365mcf3	378-16-5	CF ₃ CF ₂ CH ₂ OCH ₃	11
HFE-374pc2	512-51-6	CH ₃ CH ₂ OCF ₂ CHF ₂	557
HFE-449sl (HFE-7100) Chemical blend	163702-07-6 163702-08-7	C ₄ F ₉ OCH ₃ (CF ₃) ₂ CFCF ₂ OCH ₃	297
HFE-569sf2 (HFE-7200) Chemical blend	163702-05-4 163702-06-5	C ₄ F ₉ OC ₂ H ₅ (CF ₃) ₂ CFCF ₂ OC ₂ H ₅	59
Sevoflurane	28523-86-6	CH ₂ FOCH(CF ₃) ₂	345
HFE-356mm1	13171-18-1	(CF ₃) ₂ CHOCH ₃	27
HFE-338mmz1	26103-08-2	CHF ₂ OCH(CF ₃) ₂	380
(Octafluorotetramethylene)hydroxymethyl group	NA	X-(CF ₂) ₄ CH(OH)-X	73
HFE-347mmy1	22052-84-2	CH ₃ OCF(CF ₃) ₂	343
Bis(trifluoromethyl)-methanol	920-66-1	(CF ₃) ₂ CHOH	195
2,2,3,3,3-pentafluoropropanol	422-05-9	CF ₃ CF ₂ CH ₂ OH	42
PFPPIE	NA	CF ₃ OCF(CF ₃)CF ₂ OCF ₂ O CF ₃	10,300

^a The GWP for this compound is different than the GWP in the version of Table A-1 to subpart A of part 98 published on October 30, 2009.

Table C–1 to Subpart C of Part 98—Default CO₂ Emission Factors and High Heat Values for Various Types of Fuel

Table C–1 to Subpart C—Default CO₂ Emission Factors and High Heat Values for Various Types of Fuel

Fuel type	Default high heat value	Default CO₂ emission factor
Coal and coke	mmBtu/short ton	kg CO₂/mmBtu
Anthracite	25.09	103.69
Bituminous	24.93	93.28
Subbituminous	17.25	97.17
Lignite	14.21	97.72
Coal Coke	24.80	113.67
Mixed (Commercial sector)	21.39	94.27
Mixed (Industrial coking)	26.28	93.90
Mixed (Industrial sector)	22.35	94.67
Mixed (Electric Power sector)	19.73	95.52
Natural gas	mmBtu/scf	kg CO₂/mmBtu
(Weighted U.S. Average)	1.026×10^{-3}	53.06
Petroleum products	mmBtu/gallon	kg CO₂/mmBtu
Distillate Fuel Oil No. 1	0.139	73.25
Distillate Fuel Oil No. 2	0.138	73.96
Distillate Fuel Oil No. 4	0.146	75.04
Residual Fuel Oil No. 5	0.140	72.93
Residual Fuel Oil No. 6	0.150	75.10
Used Oil	0.138	74.00
Kerosene	0.135	75.20
Liquefied petroleum gases (LPG) ¹	0.092	61.71
Propane ¹	0.091	62.87
Propylene ²	0.091	67.77
Ethane ¹	0.068	59.60
Ethanol	0.084	68.44
Ethylene ²	0.058	65.96
Isobutane ¹	0.099	64.94
Isobutylene ¹	0.103	68.86
Butane ¹	0.103	64.77
Butylene ¹	0.105	68.72
Naphtha (<401 deg F)	0.125	68.02
Natural Gasoline	0.110	66.83

Fuel type	Default high heat value	Default CO ₂ emission factor
Other Oil (>401 deg F)	0.139	76.22
Pentanes Plus	0.110	70.02
Petrochemical Feedstocks	0.125	71.02
Petroleum Coke	0.143	102.41
Special Naphtha	0.125	72.34
Unfinished Oils	0.139	74.54
Heavy Gas Oils	0.148	74.92
Lubricants	0.144	74.27
Motor Gasoline	0.125	70.22
Aviation Gasoline	0.120	69.25
Kerosene-Type Jet Fuel	0.135	72.22
Asphalt and Road Oil	0.158	75.36
Crude Oil	0.138	74.54
Other fuels-solid	mmBtu/short ton	kg CO₂/mmBtu
Municipal Solid Waste	9.95 ³	90.7
Tires	28.00	85.97
Plastics	38.00	75.00
Petroleum Coke	30.00	102.41
Other fuels—gaseous	mmBtu/scf	kg CO₂/mmBtu
Blast Furnace Gas	0.092 × 10 ⁻³	274.32
Coke Oven Gas	0.599 × 10 ⁻³	46.85
Propane Gas	2.516 × 10 ⁻³	61.46
Fuel Gas ⁴	1.388 × 10 ⁻³	59.00
Biomass fuels—solid	mmBtu/short ton	kg CO₂/mmBtu
Wood and Wood Residuals (dry basis) ⁵	17.48	93.80
Agricultural Byproducts	8.25	118.17
Peat	8.00	111.84
Solid Byproducts	10.39	105.51
Biomass fuels—gaseous	mmBtu/scf	kg CO₂/mmBtu
Landfill Gas	0.485 × 10 ⁻³	52.07
Other Biomass Gases	0.655 × 10 ⁻³	52.07
Biomass Fuels—Liquid	mmBtu/gallon	kg CO₂/mmBtu
Ethanol	0.084	68.44
Biodiesel (100%)	0.128	73.84
Rendered Animal Fat	0.125	71.06
Vegetable Oil	0.120	81.55

¹ The HHV for components of LPG determined at 60 °F and saturation pressure with the exception of ethylene.

² Ethylene HHV determined at 41 °F (5 °C) and saturation pressure.

³ Use of this default HHV is allowed only for: (a) Units that combust MSW, do not generate steam, and are allowed to use Tier 1; (b) units that derive no more than 10 percent of their annual heat input from MSW and/or tires; and (c) small batch incinerators that combust no more than 1,000 tons of MSW per year.

⁴ Reporters subject to subpart X of this part that are complying with § 98.243(d) or subpart Y of this part may only use the default HHV and the default CO₂ emission factor for fuel gas combustion under the conditions prescribed in § 98.243(d)(2)(i) and (d)(2)(ii) and § 98.252(a)(1) and (a)(2), respectively. Otherwise, reporters subject to subpart X or subpart Y shall use either Tier 3 (Equation C-5) or Tier 4.

⁵ Use the following formula to calculate a wet basis HHV for use in Equation C-1:

$$HHV_w = ((100 - M)/100) * HHV_d$$

where

HHV_w = wet basis HHV,

M = moisture content (percent) and

HHV_d = dry basis HHV from Table C-1.

[74 FR 56374, Oct. 30, 2009, as amended at 75 FR 79153, Dec. 17, 2010; 78 FR 71950, Nov. 29, 2013]

Section 8

Map(s)

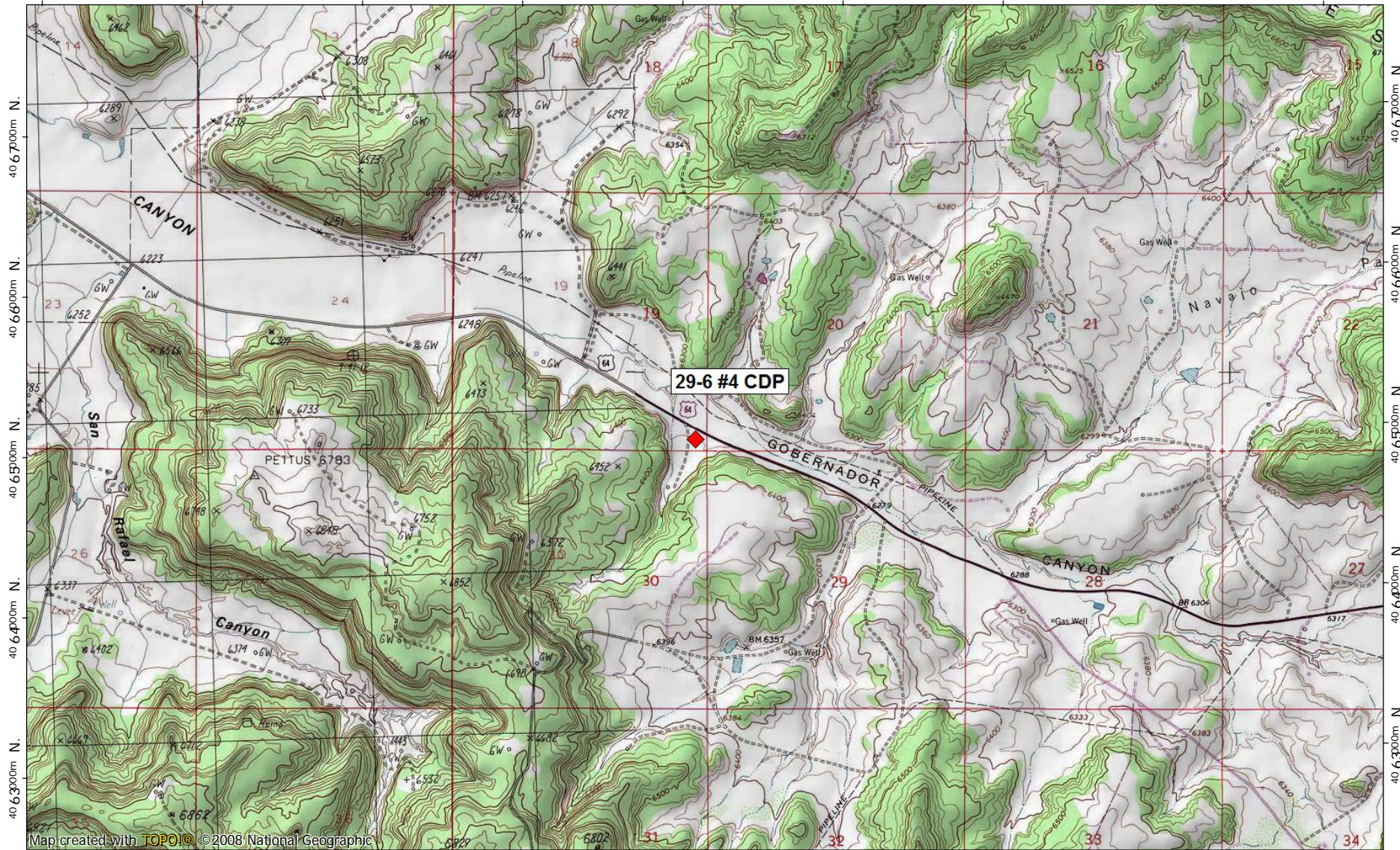
A map such as a 7.5 minute topographic quadrangle showing the exact location of the source. The map shall also include the following:

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	

Please see the following page(s).

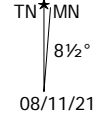
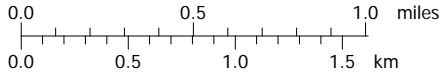
HARVEST FOUR CORNERS, LLC - 29-6 #4 CENTRAL DELIVERY POINT (CDP) - Rio Arriba County, NM T 29 N, R 06 W, Section 19

273000m E. 274000m E. 275000m E. 276000m E. 277000m E. 278000m E. 279000m E. WGS84 Zone 13S 281000m E.



Map created with TOPO!® ©2008 National Geographic

273000m E. 274000m E. 275000m E. 276000m E. 277000m E. 278000m E. 279000m E. WGS84 Zone 13S 281000m E.



08/11/21

Section 9

Proof of Public Notice

(for NSR applications submitting under 20.2.72 or 20.2.74 NMAC)

(This proof is required by: 20.2.72.203.A.14 NMAC “Documentary Proof of applicant’s public notice”)

- I have read the AQB “Guidelines for Public Notification for Air Quality Permit Applications”**
This document provides detailed instructions about public notice requirements for various permitting actions. It also provides public notice examples and certification forms. Material mistakes in the public notice will require a re-notice before issuance of the permit.

Unless otherwise allowed elsewhere in this document, the following items document proof of the applicant’s Public Notification. Please include this page in your proof of public notice submittal with checkmarks indicating which documents are being submitted with the application.

New Permit and **Significant Permit Revision** public notices must include all items in this list.

Technical Revision public notices require only items 1, 5, 9, and 10.

Per the Guidelines for Public Notification document mentioned above, include:

1. A copy of the certified letter receipts with post marks (20.2.72.203.B NMAC)
2. A list of the places where the public notice has been posted in at least four publicly accessible and conspicuous places, including the proposed or existing facility entrance. (e.g: post office, library, grocery, etc.)
3. A copy of the property tax record (20.2.72.203.B NMAC).
4. A sample of the letters sent to the owners of record.
5. A sample of the letters sent to counties, municipalities, and Indian tribes.
6. A sample of the public notice posted and a verification of the local postings.
7. A table of the noticed citizens, counties, municipalities and tribes and to whom the notices were sent in each group.
8. A copy of the public service announcement (PSA) sent to a local radio station and documentary proof of submittal.
9. A copy of the classified or legal ad including the page header (date and newspaper title) or its affidavit of publication stating the ad date, and a copy of the ad. When appropriate, this ad shall be printed in both English and Spanish.
10. A copy of the display ad including the page header (date and newspaper title) or its affidavit of publication stating the ad date, and a copy of the ad. When appropriate, this ad shall be printed in both English and Spanish.
11. A map with a graphic scale showing the facility boundary and the surrounding area in which owners of record were notified by mail. This is necessary for verification that the correct facility boundary was used in determining distance for notifying land owners of record.

Not applicable for a Title V application.

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 29-6 #4 CDP compresses and dehydrates pipeline quality natural gas for pipeline transmission using natural gas-fired reciprocating engines.

Natural gas is received from independent producers and is metered as it enters the facility. The natural gas stream typically contains produced water, which is separated from the gas stream via an inlet separator. The natural gas is then compressed for pipeline transmission using reciprocating compressors driven by the natural gas-fired reciprocating internal combustion engines. The produced water is routed to above ground storage tanks where it is stored until it is transported offsite by truck.

The gas stream is then routed to up to seven triethylene glycol (TEG) dehydrators which further dehydrate the gas stream. The TEG solution comes into contact with the natural gas and removes the water and some hydrocarbons. The rich TEG solution is regenerated by boiling off the water and hydrocarbons and reclaiming the glycol.

Other emission sources at the facility include storage tanks, fugitive emissions from process piping (valves, flanges, seals, etc.), truck loading, and compressor blowdown emissions during startup, shutdown and routine maintenance operations.

The facility is authorized to operate continuously, 24 hours per day, seven days per week, 52 weeks per year, 8,760 hours per year.

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):

29-6 #4 Central Delivery Point (CDP)

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)

Not applicable for Title V applications.

Section 13

Determination of State & Federal Air Quality Regulations

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

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

Required Information for Specific Equipment:

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

Required Information for Regulations that Apply to the Entire Facility:

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

Regulatory Citations for Regulations That Do Not, but Could Apply:

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

Regulatory Citations for Emission Standards:

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

Federally Enforceable Conditions:

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

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

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

Federal Regulations

Federal standards and requirements are embodied in Title 40 (Protection of the Environment), Subchapter C (Air Programs) of the CFR, Parts 50 through 99. The applicability of those parts of the CFR that are consistent with the limited list of standards and requirements defined as applicable requirements are identified in the following pages.

FEDERAL REGULATIONS APPLICABILITY CHECKLIST

FEDERAL REGULATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
40 CFR 50	National Ambient Air Quality Standards (NAAQS)	Yes	Facility	The requirement to comply with the National Ambient Air Quality Standards applies to all sources operating within the State of New Mexico, including the station.
40 CFR 52	Approval and Promulgation of Implementation Plans	No	Facility	40 CFR 52.21, <i>Prevention of Significant Deterioration of Air Quality</i> is not applicable to the facility as it is not a Prevention of Significant Deterioration (PSD) major source. (The remainder of the subpart addresses approval of local, state and/or tribal agency Implementation Plans for administering the Prevention of Deterioration (PSD) program.)
NSPS 40 CFR 60, Subpart A	General Provisions	Yes (potentially)	Potentially applicable to units 1, 4, & 15 (TBD)	Applies if any other NSPS subpart applies. As indicated below, NSPS subpart JJJJ is potentially applicable to RICE units 1, 4 and 15.
NSPS 40 CFR60, Subpart Da	Performance Standards for Electric Utility Steam Generating Units	No		The subpart applies to each electric utility steam generating unit that is capable of combusting more than 73 megawatts (MW) (250 million British thermal units per hour (MMBtu/hr)) heat input of fossil fuel (either alone or in combination with any other fuel); and that commences construction, modification, or reconstruction after September 18, 1978. The facility is not an affected facility as defined under the regulation; therefore, the subpart does not apply.
NSPS 40 CFR 60, Subpart Db	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units	No		The subpart applies to each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 MW (100 million Btu/hour). The facility is not an affected facility as defined in the regulation; therefore, the subpart does not apply.
NSPS 40 CFR 60, Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	No		The subpart applies to each steam generating unit that commences construction, modification, or reconstruction after June 9, 1989, and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr)) or less, but greater than or equal to 2.9 MW (10 MMBtu/hr). The facility does not have any affected sources under the regulation; therefore, the subpart does not apply.

FEDERAL REGULATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
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		<p>The affected facility to which this subpart applies are storage tanks with capacity greater than 151,416 liters (40,000 gallons) that are used to store petroleum liquids for which construction is commenced after May 18, 1978.</p> <p>The facility does not have equipment defined as an affected facility as defined in the regulation; therefore, the subpart does not apply.</p>
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		<p>The affected facility to which this subpart applies is any storage vessel with a capacity greater than or equal to 75 cubic meters (m³) used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984.</p> <p>All of the storage tanks at the facility are below 75 m³ capacity. Therefore, the regulation does not apply.</p>
NSPS 40 CFR 60 Subpart GG	Standards of Performance for Stationary Gas Turbines	No		<p>Affected facilities under the subpart are stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBtu) per hour and for which construction commenced after October 3, 1977</p> <p>There are no turbines at the facility and the subpart is not applicable.</p>
NSPS 40 CFR 60, Subpart KKK	Standards of Performance for Leaks of VOC from Onshore Gas Plants	No		<p>An affected facility under the subpart is an onshore gas plant that commences construction, reconstruction, or modification after January 20, 1984, and includes the group of all equipment (each pump, pressure relief device, open-ended valve or line, valve, compressor, and flange or other connector that is in VOC service or in wet gas service, and any device or system required by this subpart) except compressors (defined in § 60.631) within a process unit. A compressor station, dehydration unit, sweetening unit, underground storage tank, field gas gathering system, or liquefied natural gas unit is covered by this subpart if it is located at an onshore natural gas processing plant. If the unit is not located at the plant site, then it is exempt from the provisions of the subpart.</p> <p>The facility is not an onshore gas plant and the subpart does not apply.</p>
NSPS 40 CFR 60, Subpart LLL	Standards of Performance for Onshore Natural Gas Processing: SO₂ Emissions	No		<p>An affected facility is each sweetening unit, and each sweetening unit followed by a sulfur recovery unit, for which construction or modification commenced after January 20, 1984 at a natural gas processing plant.</p> <p>The facility is not a natural gas processing plant and does not include any affected units as defined by the subpart; therefore the subpart does not apply.</p>

FEDERAL REGULATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
NSPS 40 CFR 60, Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	Yes (potentially)	Potentially applicable to units 1, 4, & 15 (TBD)	<p>Under § 60.4230, the requirements of the subpart apply to spark-ignition (SI), reciprocating internal combustion engines (RICE) constructed, modified or reconstructed after June 12, 2006.</p> <p>Engine units 2, 3, 5, 16, and 17 were each constructed prior to the June 12, 2006 regulatory applicability date of subpart JJJJ. Therefore, the regulation is not applicable to these RICE. The engines have not undergone either “modification” or “reconstruction” under NSPS.</p> <p>Units 1, 4, and 15 are not currently installed. The applicability of subpart JJJJ to the units 1, 4, and 15 RICE will be evaluated if and when the RICE are installed.</p>
NSPS 40 CFR 60, Subpart KKKK	Standards of Performance for Stationary Combustion Turbines	No		<p>This subpart establishes emission standards and compliance schedules for the control of emissions from stationary combustion turbines that commenced construction, modification or reconstruction after February 18, 2005.</p> <p>There are no stationary gas turbines at the facility. Therefore, the subpart does not apply.</p>
NSPS 40 CFR 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 on or before September 18, 2015	No		<p>Subpart OOOO establishes natural gas production, processing, transmission and distribution emission and equipment standards, including well completions; single continuous bleed, natural gas driven pneumatic controllers operating at bleed rates greater than 6 scfh and located between a wellhead and point of custody transfer; equipment leaks and sweetening units at natural gas processing plants; reciprocating compressors; centrifugal compressors; and storage vessels at well sites. The regulation includes provisions for initial and continuous compliance demonstrations, and recordkeeping and reporting requirements.</p> <p>As it applies to the natural gas production segment, “affected sources” include the following sources constructed, modified or reconstructed after August 23, 2011 and before September 18, 2015:</p> <ul style="list-style-type: none"> - Each affected single natural gas well, as described in the regulation; - Each reciprocating compressor, unless it is located at a well site or adjacent well site; - Each single continuous bleed, natural gas driven pneumatic controller operating at a bleed rate of greater than 6 scfh and located between a wellhead and point of custody transfer; - Each single storage vessel affected facility with VOC emissions of six (6) tpy or greater. <p>The equipment at the facility were constructed prior to the applicability date; therefore, the regulation is not applicable to the existing equipment.</p>
NSPS 40 CFR 60, Subpart OOOOa	Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015	No		<p>Subpart OOOOa establishes emission standards and compliance schedules for the control of GHG methane emission limits as well as emission standards and compliance schedules for the control of VOC and SO₂ emissions from crude oil and natural gas facilities that commence construction, modification, or reconstruction after September 18, 2015.</p> <p>As it applies to equipment at a compressor station in the natural gas production segment, “affected sources” include the following emission sources constructed, modified or reconstructed after September 18, 2015 (§60.5365a):</p> <ul style="list-style-type: none"> - Each single reciprocating compressor (§60.5365a(c)); - Each pneumatic controller that is a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 scfh (§60.5365a(d)(1)); - Each single storage vessel with the potential for VOC emissions equal to or greater than 6 tpy (§60.5365a(e)); and - The collection of fugitive emissions components at a compressor station, as defined in §60.5430a (§60.5365a(j)).

FEDERAL REGULATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
				<p>The reciprocating compressors, pneumatic controllers, and collection of fugitive emissions components equipment at the facility, were each constructed prior to the applicability date or do not otherwise trigger the applicability of the regulation.</p> <p>Should a new affected source be installed at the facility, the applicability of the subpart to that source shall be evaluated upon installation. Harvest will comply with the applicable requirements in the subpart for any future devices installed.</p>
NESHAP 40 CFR 61, Subpart A	General Provisions	No		<p>40 CFR 61 National Emission Standards for Hazardous Air Pollutants (NESHAP) provides standards for equipment that emits hazardous air pollutants by specific source types.</p> <p>Subpart A, General Provisions, applies if any other 40 CFR 61 NESHAP subpart applies. Subpart A is not applicable because there are no stationary sources at this facility for which a standard is prescribed under this part.</p>
NESHAP 40 CFR 61, Subpart V	National Emission Standard for Equipment Leaks (Fugitive Emission Sources)	No		<p>40 CFR 61, subpart V provides equipment standards, and monitoring, recordkeeping and reporting standards for specified equipment in VHAP service, including fugitive emissions from pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, and required control devices or systems.</p> <p>Subpart V is not applicable because none of the potentially affected sources are in VHAP service.</p>
MACT 40 CFR 63, Subpart A	General Provisions	Yes	Dehydrator units 11a, 12a, 13a & 14a; and potentially applicable to units 1, 4, & 15 (TBD)	<p>Applies if any other 40 CFR 63 (NESHAP/MACT) subpart applies. As discussed below, subpart HH applies, and subpart ZZZZ is potentially applicable.</p>
MACT 40 CFR 63, Subpart M	National Emission Standard for Asbestos	No		<p>The subpart includes standards for minimizing asbestos emissions from several operations, including demolition and renovation activities.</p> <p>No existing or planned operation or activity at this facility triggers the applicability of this requirement. Therefore, the regulation does not apply.</p>
MACT 40 CFR 63, Subpart HH	National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities	Yes	Dehydrator units 11a, 12a, 13a & 14a	<p>Under § 63.760, the subpart applies to owners and operators of affected sources located at oil and natural gas production facilities, including facilities that are major and area sources of hazardous air pollutants (HAP).</p> <p>Under the definitions provided in §63.761, the 29-6 #4 CDP facility is a natural gas production field facility. As such, the definition of “major source” in §63.762 provides that only HAP emissions from glycol dehydration units and storage vessels are aggregated for a major source determination. The aggregated HAP emissions from the facility dehydrators and storage vessels are below the major HAP source thresholds; therefore, the facility is an area source of HAP under Subpart HH.</p> <p>The TEG dehydrators are located in an area that is not within an UA plus offset and UC boundary (as defined in §63.761).</p> <p>Under §63.764(e)(1)(ii), the owner or operator of an affected area source [TEG dehydrator] with <i>actual</i> average benzene emissions from the process vent to the atmosphere of less than 0.90 megagrams per year (~1 tpy) is exempt from the operational, recordkeeping and notification requirements in §63.764(d), provided that documentation of the exemption determination is maintained as required in §63.774(d)(1).</p>

FEDERAL REGULATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
MACT 40 CFR 63 Subpart HHH	National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities	No		<p>§63.1270, applies to owners and operators of natural gas transmission and storage facilities that transport or store natural gas prior to entering the pipeline to a local distribution company or to a final end user (if there is no local distribution company), and that are major sources of hazardous air pollutants (HAP) emissions as defined in §63.1271.</p> <p>A production segment natural gas compressor station is not in the natural gas transmission and storage source category covered by the subpart. Therefore, the regulation does not apply.</p>
MACT 40 CFR 63 Subpart YYYY	National Emission Standards for Hazardous Air Pollutants From Stationary Combustion Turbines	No		<p>Under §63.6080, subpart YYYY establishes emission and operating limitations for stationary combustion turbines located at a major source of HAP emissions. Under § 63.6175, “Major source, as used in this subpart, has the same meaning as in §63.2, except that . . . (3) For production field facilities, only HAP emissions from glycol dehydration units, storage vessel with the potential for flash emissions, combustion turbines and reciprocating internal combustion engines shall be aggregated for a major source determination . . . “</p> <p>The facility is not a major source of HAP as defined by the regulation. Therefore, the subpart does not apply.</p>
MACT 40 CFR 63, Subpart ZZZZ	National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines	Yes (potentially)	Potentially applicable to units 1, 4, & 15 (TBD)	<p>40 CFR 63, Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from existing, new, modified and reconstructed stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP. The regulation contains provisions for initial and continuous compliance demonstration.</p> <p>As defined at §63.6585(c), the station is an major source of HAP. Under §63.6590(a)(1)(i), a stationary RICE greater than 500 horsepower (hp) located at an major source of HAP is considered an “existing” unit if construction or reconstruction commenced before December 19, 2002. (“Construction” does not include the reinstallation of an existing engine at another location.) Each of the engines that have been installed at the facility is an “existing” engine under the regulation.</p> <p>The 4-stroke, lean burn (4SLB) RICE units 2, 3, 5, 16, and 17 each have a site rating of more than 500 hp and were each constructed prior to December 19, 2002. Under §63.6590(b)(3)(ii), existing 4SLB stationary RICE with site rating of more than 500 hp, located at a major source of HAP do not have to meet the requirements of the subpart and of subpart A, including initial notification requirements. Therefore, the subpart is <u>not</u> applicable to engine units 2, 3, 5, 16, and 17.</p> <p>RICE units 1, 4, & 15 are not currently installed. The applicability of the subpart to the units 1, 4, & 15 RICE will be evaluated if and when the RICE are installed.</p>
MACT 40 CFR 63 Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters	No		<p>40 CFR 63, Subpart DDDDD establishes emission limits and work practice standards for industrial, commercial, or institutional boiler or process heaters, as defined in § 63.7575, that are located at or are part of a major source of HAP, as defined under § 63.2 or § 63.761 (40 CFR 63, subpart HH), except as specified under § 63.7491.</p> <p>As defined under the regulation, the facility is an area source of HAP. Further, under § 63.7506(c)(3), existing small gaseous fuel boilers and process heaters are not subject to any requirements under the subpart or of subpart A, including notification provisions. Therefore, the regulation is not applicable.</p>

FEDERAL REGULATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
MACT 40 CFR 63 Subpart JJJJJ	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources	No		40 CFR 63, Subpart JJJJJ establishes emission limits, work practice standards, emission reduction measures, and management practices for new, reconstructed, or existing affected sources that are industrial, commercial, or institutional boilers within a subcategory listed in §63.11200 and defined in §63.11237, and that are located at an area source of HAP. The facility does not have industrial, commercial or institutional boilers of one of the listed subcategories. Also, under § 63.11195(e), the regulation does not apply to gas-fired units. Therefore, the regulation does not apply.
40 CFR 64	Compliance Assurance Monitoring	No		40 CFR 64, <i>Compliance Assurance Monitoring (CAM)</i> monitoring requirements are applicable to sources that are located at a major source, that are required to obtain a part 70 or 71 permit, and with uncontrolled criteria pollutant emission rates equal to or exceeding the major source threshold (100 tons per year), that use a control device to achieve compliance with an emission limit or standard, and which the resulting controlled emissions are less than the major source threshold. Passive control devices such as lean-burn technology are not considered a control device as defined in 40 CFR 64 definitions and as clarified in discussions with EPA. There are no emission units at the facility with uncontrolled emissions that are a major source, including the replacement engine units 5, 11 and 16.. Therefore, the regulation is not applicable under §64.2(a).
40 CFR 68	Chemical Accident Prevention Provisions	No		40 CFR 68, <i>Chemical Accident Prevention Provisions</i> , is not applicable because the facility does not store any of the identified toxic and flammable substances in quantities exceeding the applicability thresholds.
40 CFR 70	State Operating Permit Programs	No		40 CFR 70, <i>State Operating Permit Programs</i> , is not applicable: The regulation provides for the establishment of comprehensive State air quality permitting programs consistent with the requirements of title V of the Clean Air Act (Act). New Mexico Environment Department (NMED) was delegated authority by the EPA to administer the State operating permit program through regulations adopted into the State Implementation Plan (SIP) and 20.2.70 NMAC. Although Harvest is subject to the Operating Permit Program for facilities within NMED jurisdiction as implemented by the State, there are no specific requirements of the regulation that are applicable directly to applicants. Therefore, the regulation does not apply.
40 CFR 71	Federal Operating Permit Programs	No		40 CFR 71, <i>Federal Operating Permit Programs</i> sets forth requirements and the corresponding standards and procedures by which the EPA Administrator issues operating permits in the absence of an approved State operating permit program. The NMED has received delegated authority by the EPA to administer Title V permits under the State operating permit program approved under 40 CFR Part 70. There are no specific requirements applicable directly to applicants with facilities in NMED jurisdiction. Therefore, 40 CFR 71 does not apply.
40 CFR 72	Permits Regulation	No		40 CFR 72, <i>Permits Regulation</i> , is not applicable because the facility does not operate a source subject to Title IV of the Clean Air Act (CAA).
40 CFR 73	Sulfur Dioxide Allowance System	No		40 CFR 73, <i>Sulfur Dioxide Allowance System</i> , is not applicable to the facility because it does not operate a source subject to Title IV of the Clean Air Act (CAA).

FEDERAL REGULATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
40 CFR 75	Continuous Emission Monitoring	No		40 CFR 75, <i>Continuous Emission Monitoring</i> , is not applicable to the facility because it does not operate a source subject to Title IV of the Clean Air Act (CAA) and does not measure emissions with Continuous Emission Monitoring Systems (CEMS).
40 CFR 76	Acid Rain Nitrogen Dioxide Emission Reduction Program	No		40 CFR 76, <i>Acid Rain Nitrogen Dioxide Emission Reduction Program</i> , is not applicable to the facility because it does not operate a source subject to Title IV of the Clean Air Act (CAA).
40 CFR 77	Excess Emissions	No		40 CFR 77, <i>Excess Emissions</i> , is not applicable to the facility because it does not operate a source subject to Title IV of the Clean Air Act (CAA).
40 CFR 78	Appeal Procedures for Acid Rain Program	No		40 CFR 78, <i>Appeal Procedures for Acid Rain Program</i> , is not applicable to the facility because it does not operate a source subject to Title IV of the Clean Air Act (CAA).
40 CFR 82	Protection of Stratospheric Ozone	No		<p>The purpose of 40 CFR 82, <i>Protection of Stratospheric Ozone</i> is to implement the <i>Montreal Protocol on Substances that Deplete the Ozone Layer</i>. Under §82.1(b), the subpart applies to anyone that produces, transforms, destroys, imports or exports a controlled substance or imports or exports a controlled product.</p> <p>The facility does not carry out any of the listed activities, nor does it maintain or service motor vehicle air conditioning units or refrigeration equipment. The facility does not sell, distribute, or offer for sale or distribution any product that contains ozone-depleting substances. Therefore, the subpart does not have direct applicability to the facility.</p>
40 CFR 98	Mandatory Greenhouse Gas Reporting	Yes	Facility	<p>40 CFR 98, <i>Mandatory Greenhouse Gas Reporting</i>, is a federal requirement that is applicable to facilities that include source categories listed in Subpart A, Table A-3, or to facilities with annual emissions of 25,000 metric tons of CO₂ equivalent (CO₂e) or more in combined emissions from stationary fuel combustion units, miscellaneous uses of carbonate, and all applicable source categories listed in Table A-3 and Table A-4 of Subpart A.</p> <p>The regulation is applicable to the facility as its actual annual CO₂e emissions are above the major source threshold as defined in Subpart A, <i>General Provision</i>, Subpart C, <i>General Stationary Fuel Combustion Sources</i>, and, as applicable, Subpart W, <i>Petroleum Oil and Natural Gas Systems</i>. The GHG emissions inventory is reported annually.</p>
CAA Section 112(r)	Chemical Accident Prevention Provisions	No		CAA Section 112(r), <i>Chemical Accident Prevention Provisions</i> . The station does not store designated toxic and flammable chemicals in quantities exceeding the applicable thresholds.

State Regulations

Applicable state requirements are embodied in the New Mexico SIP, the New Mexico Administrative Code (NMAC), and the terms and conditions of any preconstruction permits issued pursuant to regulations promulgated through rulemaking under Title I of the CAA. A summary of the applicability of the NMACs is presented on the following pages.

STATE REGULATIONS APPLICABILITY CHECKLIST

STATE REGU- LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
20.2.1 NMAC	General Provisions	Yes	Facility	20.2.1 NMAC, <i>General Provisions</i> , establishes procedures for protecting confidential information, procedures for seeking a variance, NMAQB's authority to require sampling equipment, severability, the effective date for conformance with the NMACs, and prohibits the violation of other requirements in attempting to comply with NMACs. Although this regulation may apply to the facility, it does not impose any specific requirements.
20.2.2 NMAC	Definitions *	No		20.2.2 NMAC, <i>Definitions</i> , establishes definitions used throughout the remaining regulations. Although this regulation may apply to the facility, it does not impose any specific requirements on the operation of the facility as described in the permit. Therefore, the regulation is considered not applicable.
20.2.3 NMAC	Ambient Air Quality Standards	Yes	Facility	20.2.3 NMAC, <i>Ambient Air Quality Standards</i> , is a SIP approved regulation that limits the maximum allowable concentration of total suspended particulates (TSP), sulfur compounds, carbon monoxide (CO) and nitrogen dioxide (NO ₂) in the areas of New Mexico under the jurisdiction of the Environmental Improvement Board. Under subsection 20.2.3.9, the requirements of the part are not considered applicable requirements under 20.2.70 NMAC (i.e., federally enforceable requirements), as defined by that part. However, the regulation applies to sources required to obtain a permit under 20.2.72 NMAC, and it does not limit which terms and conditions of permits issued pursuant to 20.2.72 NMAC are applicable requirements for permits issued pursuant to 20.2.70 NMAC.
20.2.5 NMAC	Source Surveillance	No		20.2.5 NMAC, <i>Source Surveillance</i> , establishes the NMAQB's authority to require recordkeeping/ surveillance upon request. Although this regulation may apply to the facility, it does not impose any specific requirements on the operation of the facility as described in the permit. Therefore, the regulation is considered not applicable.
20.2.7 NMAC	Excess Emissions	Yes	Facility	20.2.7 NMAC, <i>Excess Emissions</i> , is applicable because it prohibits excess emissions and proscribes notification procedures in the event of excess emissions.
20.2.8 NMAC	Emissions Leaving New Mexico	No		20.2.8 NMAC, <i>Emissions Leaving New Mexico</i> , establishes prohibitions on the release of pollutants that cross New Mexico State boundaries. Although this regulation may apply to the facility, it does not impose any specific requirements on the operation of the facility as described in the permit. Therefore, the regulation is considered not applicable.

STATE REGU- LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
20.2.33 NMAC	Gas Burning Equipment - Nitrogen Dioxide	No		20.2.33 NMAC, <i>Gas Burning Equipment - Nitrogen Dioxide</i> , does not apply to the station because the compressor station does not include new or existing 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.
20.2.34 NMAC	Oil Burning Equipment: NO₂	No		20.2.34 NMAC, <i>Oil Burning Equipment: NO₂</i> , does not apply to the station because the compressor station does not have oil burning equipment.
20.2.35 NMAC	Natural Gas Processing Plant – Sulfur	No		20.2.35 NMAC, <i>Natural Gas Processing Plant – Sulfur</i> , applies to new natural gas processing plants for which a modification commenced on or after July 1, 1974. The regulation is not applicable to the station because the facility is not a natural gas processing plant.
20.2.38 NMAC	Hydrocarbon Storage	No		20.2.38 NMAC, <i>Hydrocarbon Storage Facilities</i> , is not applicable because the facility does not store hydrocarbons containing hydrogen sulfide; does not have a hydrocarbon liquid throughput of 50,000 barrels or greater located within a municipality or within five miles of a municipality with population of 20,000 or more; nor is there a new hydrocarbon tank battery with storage capacity of 65,000 gallons or greater.
20.2.61.109 NMAC	Smoke & Visible Emissions	Yes	RICE units 1, 2, 3, 4, 5, 15, 16, & 17; and dehydrator reboiler units 11b-14b	20.2.61 NMAC, <i>Smoke and Visible Emissions</i> , limits visible emissions from stationary combustion equipment to less than 20 percent opacity. The facility compressor engines and reboilers are subject to the regulation as they are each a stationary combustion source.
20.2.70 NMAC	Operating Permits	Yes	Facility	20.2.70 NMAC, <i>Operating Permits</i> , contains permitting requirements for major sources of criteria and hazardous air pollutants subject to Part 70 (Title V) permitting requirements. The facility PTE for NO _x , CO, VOC and HAP exceeds the Title V major source permitting thresholds. Therefore, the regulation is applicable. The facility is currently permitted under Title V Operating Permit No. P028-R4-M2 .
20.2.71 NMAC	Operating Permit Fees	Yes	Facility	20.2.71 NMAC, <i>Operating Permit Emission Fees</i> , specifies fees for emissions from facilities subject to Part 70 (Title V) permitting requirements under 20.2.70 NMAC. The regulation is applicable as the facility is subject to permitting requirements under 20.2.70 NMAC.
20.2.72 NMAC	Construction Permits	Yes	Facility	20.2.72 NMAC, <i>Construction Permits</i> , requires a construction [NSR] permit for stationary source with emissions greater than 10 pounds per hour or 25 tons per year of criteria pollutants. The station emissions exceed the permit requirement thresholds; therefore, the station is required to apply for and obtain an NSR permit. The construction (NSR) permit issued under 20.2.72 for this facility is permit No. 1037-M7 , as administratively revised.
20.2.73 NMAC	NOI & Emissions Inventory Requirements	Yes	Facility	20.2.73 NMAC requires that owners/operators intending to construct a new stationary source that has a potential emission rate (uncontrolled emissions) greater than 10 tons per year of any regulated air contaminant, or 1 ton per year of lead, must file a notice of intent (NOI) with the department.

STATE REGU- LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
				The station emits regulated air pollutants in amounts greater than 10 tons per year. Therefore, the facility is subject to the regulation. The requirement to file an NOI with the Department is fulfilled with the application for a construction permit under 20.2.72 NMAC.
20.2.74 NMAC	Permits – PSD	No		20.2.74 NMAC, Permits, Prevention of Significant Deterioration (PSD), provides requirements for sources subject to permit requirements for PSD facilities. The facility emissions are below the PSD permit threshold levels. Therefore, the regulation is not applicable.
20.2.75 NMAC	Construction Permit Fees	Yes	Facility	20.2.75 NMAC, <i>Construction Permit Fees</i> , establishes the fee schedule associated with the filing of permits and permit revisions. The regulation is applicable to the facility for construction permit applications submitted under 20.2.72 NMAC.
20.2.77 NMAC	New Source Performance Standards	Yes (potentially)	Potentially applicable to units 1, 4, & 15 (TBD)	20.2.77 NMAC, <i>New Source Performance Standards</i> , incorporates by reference specific Standards of Performance for New Stationary Sources (NSPS) codified under 40 CFR 60, as amended through January 15, 2017. The applicability of subpart JJJJ to engine units 1, 4, & 15 will be evaluated upon their installation.
20.2.78 NMAC	Emission Standards for HAPS	No		20.2.78 NMAC, <i>Emission Standards for Hazardous Air Pollutants</i> , incorporates by reference specific National Emission Standards for Hazardous Air Pollutants (NESHAPs) codified under 40 CFR 61, as amended through January 15, 2017. The regulation is not applicable as none of the facility emission units are subject to any NESHAP under 40 CFR 61.
20.2.79 NMAC	Permits – Nonattainment Areas	No		20.2.79 NMAC, <i>Permits - Nonattainment Areas</i> , is not applicable to the compressor station because the it is not located within a non-attainment area.
20.2.80 NMAC	Stack Heights	No		20.2.80 NMAC, <i>Stack Heights</i> , establishes guidelines for the selection of an appropriate stack height for the purposes of atmospheric dispersion modeling. Atmospheric dispersion modeling was previously provided in support of the facility's construction permit. Air quality dispersion modeling is not required for this Title V Operating Permit renewal application submitted under 20.2.70 NMAC.
20.2.82 NMAC	MACT Standards for source categories of HAPS	Yes	Dehydrator units 11a, 12a, 13a & 14a; and potentially applicable to RICE units 1, 4, & 15 (TBD)	20.2.82 NMAC, <i>Maximum Achievable Control Technology Standards for Source Categories of Hazardous Air Pollutants</i> , incorporates by reference specified federal Maximum Available Control Technology (MACT) Standards codified in 40 CFR 63, as amended through January 15, 2017. TEG dehydrator units 11a, 12a, 13a, and 14a are each subject to 40 CFR 63, subpart HH. The applicability of subpart ZZZZ to engine units 1, 4, & 15 will be evaluated upon their installation.
20.2.84 NMAC	Acid Rain Permits	No		20.2.84 NMAC, <i>Acid Rain Permits</i> , is not applicable to the station because the compressor station does not operate an affected unit under the 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.
-

Section 15

Alternative Operating Scenarios

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

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

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

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

Not applicable.

Section 16

Air Dispersion Modeling

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

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

Check each box that applies:

- See attached, approved modeling **waiver for all** pollutants from the facility.
- See attached, approved modeling **waiver for some** pollutants from the facility.
- Attached in Universal Application Form 4 (UA4) is a **modeling report for all** pollutants from the facility.
- Attached in UA4 is a **modeling report for some** pollutants from the facility.
- No modeling is required.

An ambient air quality impact analysis including dispersion modeling was previously submitted in the permit application for NSR permit 1073-M5. The dispersion modeling demonstrated compliance with the National Ambient Air Quality Standards and applicable PSD increments. Dispersion modeling was not required for permits 1073–M6 or –M7.

Section 17

Compliance Test History

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

To show compliance with existing NSR permits conditions, you must submit a compliance test history. The table below provides an example.

Compliance Test History Table

Unit No.	Test Description	Test Date
2	Compliance test for NO _x and CO, in accordance with Operating Permit P028-R4, Condition A201.B.	Jan. 10, 2021
3	Compliance test for NO _x and CO, in accordance with Operating Permit P028-R4, Condition A201.B.	Jan. 9, 2021
5	Compliance test for NO _x and CO, in accordance with Operating Permit P028-R4, Condition A201.B.	Feb. 8, 2021
15	Compliance test for NO _x and CO, in accordance with Operating Permit P028-R4, Condition A201.B.	May 17, 2019
16	Compliance test for NO _x and CO, in accordance with Operating Permit P028-R4, Condition A201.B.	May 17, 2019

Section 18

Addendum for Streamline Applications

Do not print this section unless this is a streamline application.

Streamline Applications do not require a complete application. Submit Sections 1-A, 1-B, 1-D, 1-F, 1-G, 2-A, 2-C thru L, Sections 3 thru 8, Section 13, Section 18, Section 22, and Section 23 (Certification). Other sections may be required at the discretion of the Department. 20.2.72.202 NMAC Exemptions do not apply to Streamline sources. 20.2.72.219 NMAC revisions and modifications do not apply to Streamline sources, thus 20.2.72.219 type actions require a complete new application submittal. Please do not print sections of a streamline application that are not required.

Not applicable.

Section 19

Requirements for Title V Program

Do not print this section unless this is a Title V application.

Who Must Use this Attachment:

- * Any major source as defined in 20.2.70 NMAC.
 - * Any source, including an area source, subject to a standard or other requirement promulgated under Section 111 - Standards of Performance for New Stationary Sources, or Section 112 Hazardous Air Pollutants, of the 1990 federal Clean Air Act ("federal Act"). Non-major sources subject to Sections 111 or 112 of the federal Act are exempt from the obligation to obtain an 20.2.70 NMAC operating permit until such time that the EPA Administrator completes rulemakings that require such sources to obtain operating permits. In addition, sources that would be required to obtain an operating permit solely because they are subject to regulations or requirements under Section 112(r) of the federal Act are exempt from the requirement to obtain an Operating Permit.
 - * Any Acid Rain source as defined under title IV of the federal Act. The Acid Rain program has additional forms. See <http://www.env.nm.gov/aqb/index.html>. Sources that are subject to both the Title V and Acid Rain regulations are encouraged to submit both applications simultaneously.
 - * Any source in a source category designated by the EPA Administrator ("Administrator"), in whole or in part, by regulation, after notice and comment.
-

19.1 - 40 CFR 64, Compliance Assurance Monitoring (CAM) (20.2.70.300.D.10.e NMAC)

Any source subject to 40CFR, Part 64 (Compliance Assurance Monitoring) must submit all the information required by section 64.7 with the operating permit application. The applicant must prepare a separate section of the application package for this purpose; if the information is already listed elsewhere in the application package, make reference to that location. Facilities not subject to Part 64 are invited to submit periodic monitoring protocols with the application to help the AQB to comply with 20.2.70 NMAC. Sources subject to 40 CFR Part 64, must submit a statement indicating your source's compliance status with any enhanced monitoring and compliance certification requirements of the federal Act.

The 29-6 #4 CDP is not subject to 40 CFR, Part 64, Compliance Assurance Monitoring (CAM); consequently, a monitoring protocol is not required with this application.

19.2 - Compliance Status (20.2.70.300.D.10.a & 10.b NMAC)

Describe the facility's compliance status with each applicable requirement at the time this permit application is submitted. This statement should include descriptions of or references to all methods used for determining compliance. This statement should include descriptions of monitoring, recordkeeping and reporting requirements and test methods used to determine compliance with all applicable requirements. Refer to Section 2, Tables 2-N and 2-O of the Application Form as necessary. (20.2.70.300.D.11 NMAC) For facilities with existing Title V permits, refer to most recent Compliance Certification for existing requirements. Address new requirements such as CAM, here, including steps being taken to achieve compliance.

The 29-6 #4 CDP is in compliance with all applicable requirements affecting the facility. A copy of Part 1 (Permit Requirements Certification Table) of the 2020 Annual Compliance Certification (ACC) is provided in Section 20, Other Relevant Information. It identifies the requirements of the current Title V operating permit and the methods and data used to determine compliance with that permit. It is assumed that compliance with the Title V operating permit ensures compliance with the construction permit and New Mexico regulations.

19.3 - Continued Compliance (20.2.70.300.D.10.c NMAC)

Provide a statement that your facility will continue to be in compliance with requirements for which it is in compliance at the time of permit application. This statement must also include a commitment to comply with other applicable requirements as they come into effect during the permit term. This compliance must occur in a timely manner or be consistent with such schedule expressly required by the applicable requirement.

The 29-6 #4 CDP will continue to be in compliance with applicable requirements for which it is in compliance at the time of this permit application. In addition, the station will, in a timely manner or consistent with such schedule expressly required by the applicable requirement, comply with other applicable requirements as they come into effect during the permit term.

19.4 - Schedule for Submission of Compliance (20.2.70.300.D.10.d NMAC)

You must provide a proposed schedule for submission to the department of compliance certifications during the permit term. This certification must be submitted annually unless the applicable requirement or the department specifies a more frequent period. A sample form for these certifications will be attached to the permit.

The submittal of compliance certifications during the five-year term of the operating permit will occur annually.

19.5 - Stratospheric Ozone and Climate Protection

In addition to completing the four (4) questions below, you must submit a statement indicating your source's compliance status with requirements of Title VI, Section 608 (National Recycling and Emissions Reduction Program) and Section 609 (Servicing of Motor Vehicle Air Conditioners).

1. Does your facility have any air conditioners or refrigeration equipment that uses CFCs, HCFCs or other ozone-depleting substances? **Yes** **No**
 2. Does any air conditioner(s) or any piece(s) of refrigeration equipment contain a refrigeration charge greater than 50 lbs? **Yes** **No**
(If the answer is yes, describe the type of equipment and how many units are at the facility.)
 3. Do your facility personnel maintain, service, repair, or dispose of any motor vehicle air conditioners (MVACs) or appliances ("appliance" and "MVAC" as defined at 82. 152)? **Yes** **No**
 4. Cite and describe which Title VI requirements are applicable to your facility (i.e. 40 CFR Part 82, Subpart A through G.)
-

The facility does not produce, manufacture, transform, destroy, import, or export any stratospheric ozone-depleting substances (CFCs, HCFCs); does not maintain or service motor vehicle air conditioning units or refrigeration equipment; and does not sell, distribute, or offer for sale any product that may contain stratospheric ozone-depleting substances.

Harvest shall continue to maintain compliance with the conditions stipulated in 40 CFR 82, Subparts A-G of the Stratospheric Ozone Protection Program (Title VI of the Clean Air Act Amendments).

19.6 - Compliance Plan and Schedule

Applications for sources, which are not in compliance with all applicable requirements at the time the permit application is submitted to the department, must include a proposed compliance plan as part of the permit application package. This plan shall include the information requested below:

A. Description of Compliance Status: (20.2.70.300.D.11.a NMAC)

A narrative description of your facility's compliance status with respect to all applicable requirements (as defined in 20.2.70 NMAC) at the time this permit application is submitted to the department.

B. Compliance plan: (20.2.70.300.D.11.B NMAC)

A narrative description of the means by which your facility will achieve compliance with applicable requirements with which it is not in compliance at the time you submit your permit application package.

C. Compliance schedule: (20.2.70.300D.11.c NMAC)

A schedule of remedial measures that you plan to take, including an enforceable sequence of actions with milestones, which will lead to compliance with all applicable requirements for your source. This schedule of compliance must be at least as stringent as that contained in any consent decree or administrative order to which your source is subject. The obligations of any consent decree or administrative order are not in any way diminished by the schedule of compliance.

D. Schedule of Certified Progress Reports: (20.2.70.300.D.11.d NMAC)

A proposed schedule for submission to the department of certified progress reports must also be included in the compliance schedule. The proposed schedule must call for these reports to be submitted at least every six (6) months.

E. Acid Rain Sources: (20.2.70.300.D.11.e NMAC)

If your source is an acid rain source as defined by EPA, the following applies to you. For the portion of your acid rain source subject to the acid rain provisions of title IV of the federal Act, the compliance plan must also include any additional requirements under the acid rain provisions of title IV of the federal Act. Some requirements of title IV regarding the schedule and methods the source will use to achieve compliance with the acid rain emissions limitations may supersede the requirements of title V and 20.2.70 NMAC. You will need to consult with the Air Quality Bureau permitting staff concerning how to properly meet this requirement.

NOTE: The Acid Rain program has additional forms. See <http://www.env.nm.gov/aqb/index.html>. Sources that are subject to both the Title V and Acid Rain regulations are **encouraged** to submit both applications **simultaneously**.

The 29-6 #4 CDP is in compliance with all applicable requirements; consequently, a compliance plan, a compliance schedule, and a schedule of certified progress reports is not required.

The 29-6 #4 CDP is not equipped with any acid rain sources; consequently, compliance with the acid rain provisions is not required as a part of this permit application.

19.7 - 112(r) Risk Management Plan (RMP)

Any major sources subject to section 112(r) of the Clean Air Act must list all substances that cause the source to be subject to section 112(r) in the application. The permittee must state when the RMP was submitted to and approved by EPA.

The 29-6 #4 CDP is not subject to 40 CFR 68, Chemical Accident Prevention Provisions; consequently, a Risk Management Plan is not required.

19.8 - Distance to Other States, Bernalillo, Indian Tribes and Pueblos

Will the property on which the facility is proposed to be constructed or operated be closer than 80 km (50 miles) from other states, local pollution control programs, and Indian tribes and pueblos (20.2.70.402.A.2 and 20.2.70.7.B NMAC)?

(If the answer is yes, state which apply and provide the distances.)

Yes, the property on which the station is constructed and operated on is closer than 80 km (50 miles) from other states, local pollution control programs and Indian tribes and pueblos as described below:

Neighboring States, Class I Areas, and Indian Lands

	Approximate Distance to Facility (kilometers)
Neighboring States	
Colorado	32.2
Indian Lands	
Southern Ute Tribe	32.2
Jicarilla Apache Tribe	27.4
Navajo Nation	19.3
Ute Mountain Ute Tribe	78.9

19.9 - Responsible Official

The responsible official for the 29-6 #4 CDP is Travis Jones, EH&S Manager.

Section 20

Other Relevant Information

Other relevant information. Use this attachment to clarify any part in the application that you think needs explaining. Reference the section, table, column, and/or field. Include any additional text, tables, calculations or clarifying information.

Additionally, the applicant may propose specific permit language for AQB consideration. In the case of a revision to an existing permit, the applicant should provide the old language and the new language in track changes format to highlight the proposed changes. If proposing language for a new facility or language for a new unit, submit the proposed operating condition(s), along with the associated monitoring, recordkeeping, and reporting conditions. In either case, please limit the proposed language to the affected portion of the permit.

As discussed in Section 19.2, this section contains the Part 1 (Permit Requirements Certification Table) of the 2020 Annual Compliance Certification (ACC).



**New Mexico Environment Department
Air Quality Bureau
Compliance and Enforcement Section
525 Camino de los Marquez, Suite 1
Santa Fe, NM 87505
Phone (505) 476-4300**



Version 07.20.18

NMED USE ONLY	
TEMPO	

REPORTING SUBMITTAL FORM

NMED USE ONLY	
Staff	
Admin	

PLEASE NOTE: ® - Indicates required field

SECTION I - GENERAL COMPANY AND FACILITY INFORMATION					
A. ® Company Name: Harvest Four Corners, LLC			D. ® Facility Name: 29-6#4 Central Delivery Point		
B.1 ® Company Address: 1755 Arroyo Drive			E.1 ® Facility Address: 1755 Arroyo Drive		
B.2 ® City: Bloomfield	B.3 ® State: NM	B.4 ® Zip: 8 7 4 1 3	E.2 ® City: Bloomfield	E.3 ® State: NM	E.4 ® Zip: 87413
C.1 ® Company Environmental Contact: Kijun Hong		C.2 ® Title: Environmental Specialist		F.1 ® Facility Contact: Kijun Hong	
C.3 ® Phone Number: 505-632-4475		C.4 ® Fax Number: 505-632-4782		F.3 ® Phone Number: 505-632-4475	
C.5 ® Email Address: khong@harvestmidstream.com			F.5 ® Email Address: khong@harvestmidstream.com		
G. Responsible Official: (Title V onlv): Travis Jones		H. Title: EH&S Manager		I. Phone Number: 713-289-2630	
J. Fax Number:					
K. ® AI Number: 1013	L. Title V Permit Number: P028-R4-M2	M. Title V Permit Issue Date: 11/20/18	N. NSR Permit Number:	O. NSR Permit Issue Date:	
P. Reporting Period:					
From: 10/1/19		To: 9/30/20			

Do NOT submit NSPS OOOO or OOOOa well completion or flowback notifications to the Air Quality Bureau. See <https://www.env.nm.gov/air-quality/notices-and-faqs-for-compliance-and-enforcement/> for explanation.

SECTION II - TYPE OF SUBMITTAL (check one that applies)				
A. <input checked="" type="checkbox"/>	Title V Annual Compliance Certification	Permit Condition(s): A109.B	Description: submittal of ACC	
B. <input type="checkbox"/>	Title V Semi-Annual Monitoring Report	Permit Condition(s):	Description:	
C. <input type="checkbox"/>	NSPS Requirement (40CFR60)	Regulation:	Section(s):	Description:
D. <input type="checkbox"/>	MACT Requirement (40CFR63)	Regulation:	Section(s):	Description:
E. <input type="checkbox"/>	NMAC Requirement (20.2.xx) or NESHAP Requirement (40CFR61)	Regulation:	Section(s):	Description:
F. <input type="checkbox"/>	Permit or Notice of Intent (NOI) Requirement	Permit No. <input type="checkbox"/> : or NOI No. <input type="checkbox"/> :	Condition(s):	Description:
G. <input type="checkbox"/>	Requirement of an Enforcement Action	NOV No. <input type="checkbox"/> : or SFO No. <input type="checkbox"/> : or CD No. <input type="checkbox"/> : or Other <input type="checkbox"/> :	Section(s):	Description:

SECTION III - CERTIFICATION			
After reasonable inquiry, I <u>Kijun Hong</u> certify that the information in this submittal is true, accurate and complete. (Name of Certifier)			
® Signature of Certifier:	® Title: Environmental Specialist	® Date	® Responsible Official for Title V? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Reviewed By: _____

Date Reviewed: _____

Title V Report Certification Form

I. Report Type

Annual Compliance Certification

Semi-Annual Monitoring Report

Other Specify:

II. Identifying Information

Facility Name: 29-6#4 Central Delivery Point

Facility Address: 1755 Arroyo Drive

State: NM

Zip: 87413

Responsible Official (RO): Travis Jones

Phone: 713-289-2630

Fax:

RO Title: EH&S Manager

RO e-mail: trjones@harvestmidstream.co

Permit No.: P028-R4-M2

Date Permit Issued: 11/20/2018

Report Due Date (as required by the permit): 10/30/2020

Permit AI number: 1013

Time period covered by this Report: From: 10/1/2019

To: 9/30/2020

III. Certification of Truth, Accuracy, and Completeness

I am the Responsible Official indicated above. I, (Travis Jones) certify that I meet the requirements of 20.2.70.7.AD NMAC. I certify that, based on information and belief formed after reasonable inquiry, the statements and information contained in the attached Title V report are true, accurate, and complete.

Signature _____ Date: _____.

Title V Annual Compliance Certification for Permits **P028-R4M1 & P028-R4M2**

Title (TV) Permit Administration Amendment

On **November 20, 2018** NMED AQB issued an Administrative Amendment to Operating Permit **P028-R4M1**.

The Administrative Amendment **P028-R4M2** corrected the following:

- a. Permittee is changed to** **Harvest Four Corners LLC**
1755 Arroyo Dr
Bloomfield, NM 87413

- b. Facility Owner is** **Harvest Four Corners LLC**
1755 Arroyo Dr
Bloomfield, NM 87413

For this Administrative Amendment (**P028-R4M2**), the facility can use one Annual Compliance Certification (ACC) Form which will cover both TV Permits.

Although the facility is only required to submit one ACC Form, the facility shall submit **two (2)** separate TV Report Certification Forms. Each form shall list the corresponding TV Permit number, TV Permit Issue Date and Reporting Period.

Please note that this is a one-time authorization. Submittal forms for future Administrative Revisions will be evaluated on a case by case basis.

This form can also be used for future submittals that cover only the **P028-R4M2** permit.

Annual Compliance Certification - Permit Requirements Certification Table

Annual Compliance Certification Data for Title V Permits No. P028-R4M1 & P028-R4M2			
Was this facility <i>continuously</i> in compliance with <i>all conditions</i> of this <i>permit</i> during the reporting period? (Did you check either “Yes” or “N/A” for every condition in response to question 3?)			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1. Provide <i>Method(s) or other information or other facts used to determine the compliance status</i> in the “Methods:” row beneath each permit condition. 2. If you answered <i>No</i> to question 3, list <i>all</i> deviations in the <i>Deviations</i> section. For all Deviations that <i>produced</i> excess emissions, provide <i>only a)</i> the AQBCR EER Tracking Number. For all Deviations that <i>did not produce</i> excess emissions, provide <i>a)</i> The Unit ID, <i>b)</i> The Cause of and a Description of the Deviation, and <i>c)</i> the Start & End Dates of the deviation. Please indicate in <i>b)</i> , your <i>Description</i> , whether each deviation has been previously reported to NMED.			3. Was this facility <i>continuously</i> in compliance with <i>all</i> requirements of this condition during the reporting period?
FACILITY SPECIFIC REQUIREMENTS			
<u>A101 Permit Duration (expiration)</u>			
A. The term of this permit is five (5) years. It will expire five years from the date of issuance. Application for renewal of this permit shall be submitted at least twelve (12) months prior to the date of expiration. (20.2.70.300.B.2 and 302.B NMAC)			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Methods: Submittal of a renewal application at least 12 months prior to August 24, 2022 expiration of this permit will demonstrate compliance with this condition.			<input type="checkbox"/> N/A
Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	End Date
<u>A101 Permit Duration (expiration)</u>			
B. If a timely and complete application for a permit renewal is submitted, consistent with 20.2.70.300 NMAC, but the Department has failed to issue or disapprove the renewal permit before the end of the term of the previous permit, then the permit shall not expire and all the terms and conditions of the permit shall remain in effect until the renewal permit has been issued or disapproved. (20.2.70.400.D NMAC)			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Methods: Submittal of a renewal application at least 12 months prior to August 24, 2022 expiration of this permit will demonstrate compliance with this condition.			<input type="checkbox"/> N/A
Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	End Date
<u>A102 Facility: Description</u>			
B. This facility is located approximately 28 miles east of Blanco, New Mexico in Rio Arriba County. (20.2.70.302.A(7) NMAC)			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Methods: Semi-annual reports and this ACC are used to determine that the source continues to comply with this condition.			<input type="checkbox"/> N/A
Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	End Date
<u>A103 Facility: Applicable Regulations</u>			
A. The permittee shall comply with all applicable sections of the requirements listed in Table 103.A			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Methods: Semi-annual reports and the annual emissions inventory are used to demonstrate compliance with the identified applicable requirements of			<input type="checkbox"/> N/A

<p>1. Provide <i>Method(s) or other information or other facts used to determine the compliance status</i> in the “Methods:” row beneath each permit condition. 2. If you answered <i>No</i> to question 3, list <i>all</i> deviations in the <i>Deviations</i> section. For all Deviations that <i>produced</i> excess emissions, provide <i>only a)</i> the AQBCR EER Tracking Number. For all Deviations that <i>did not produce</i> excess emissions, provide <i>a)</i> The Unit ID, <i>b)</i> The Cause of and a Description of the Deviation, and <i>c)</i> the Start & End Dates of the deviation. Please indicate in <i>b)</i>, your <i>Description</i>, whether each deviation has been previously reported to NMED.</p>				<p>3. Was this facility <i>continuously</i> in compliance with <i>all</i> requirements of this condition during the reporting period?</p>	
Table 103.A.					
Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	End Date		
<u>A103 Facility: Applicable Regulations</u>					
<p>C. Compliance with the terms and conditions of this permit regarding source emissions and operation demonstrate compliance with national ambient air quality standards specified at 40 CFR 50, which were applicable at the time air dispersion modeling was performed for the facility’s NSR Permit 1073-M5.</p>				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<p>Methods: Semi-annual reports and the annual emissions inventory are used to demonstrate compliance with this permit, and thus compliance with NAAQS.</p>				<input type="checkbox"/> N/A	
Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	End Date		
<u>A104 Facility: Regulated Sources</u>					
<p>A. Table 104.A lists the emission units authorized for this facility. Emission units identified as insignificant or trivial activities (as defined in 20.2.70.7 NMAC) and/or equipment not regulated pursuant to the Act are not included.</p>				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<p>Methods: Semi-annual reports and the annual emissions inventory, along with the Management of Change Request (MOCR) procedures, are used to determine that no unauthorized equipment has been added or operated during the applicable period.</p>				<input type="checkbox"/> N/A	
Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	End Date		
<u>A104 Facility: Regulated Sources</u>					
<p>B. IC Engines (Units 1-5 and 15-17) shall each have a low speed turbocharger installed such that the engines shall not exceed 1000 RPM. (Units 1-5 and 15-17) shall not operate without the low speed turbochargers installed. (NSR Permit No. 1073M6 Specific Condition 1.g)</p>				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<p>Methods: Semi-annual reports and the annual emissions inventory, along with the Management of Change Request (MOCR) procedures, are used to determine that affected units operated only with low-speed turbochargers.</p>				<input type="checkbox"/> N/A	
Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	End Date		
<u>A106 Facility: Allowable Emissions</u>					
<p>A. The following Section lists the emission units, and their allowable emission limits. (40 CFR 50, Paragraphs 1, 7, and 8 of 20.2.70.302.A NMAC; and NSR Permit 1073-M6 and M7).</p>				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<p>Methods: Semi-annual reports, periodic monitoring, the annual emissions inventory and this ACC are used to determine that the source continues to comply with allowable emissions.</p>				<input type="checkbox"/> N/A	

1. Provide <i>Method(s) or other information or other facts used to determine the compliance status</i> in the “Methods:” row beneath each permit condition. 2. If you answered <i>No</i> to question 3, list <i>all</i> deviations in the <i>Deviations</i> section. For all Deviations that <i>produced</i> excess emissions, provide <i>only a)</i> the AQBCR EER Tracking Number. For all Deviations that <i>did not produce</i> excess emissions, provide <i>a)</i> The Unit ID, <i>b)</i> The Cause of and a Description of the Deviation, and <i>c)</i> the Start & End Dates of the deviation. Please indicate in <i>b)</i> , your <i>Description</i> , whether each deviation has been previously reported to NMED.				3. Was this facility <i>continuously</i> in compliance with <i>all</i> requirements of this condition during the reporting period?	
Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	End Date		
<u>A107 Facility: Allowable Startup, Shutdown, & Maintenance (SSM) and Malfunction Emissions</u> A. The maximum allowable SSM and Malfunction emissions limits for this facility are listed in Table 107.A and were relied upon by the Department to determine compliance with applicable regulations.				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Methods: Records of SSM and malfunction emissions are maintained to ensure compliance.				<input type="checkbox"/> N/A	
Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	End Date		
<u>A107 Facility: Allowable Startup, Shutdown, & Maintenance (SSM) and Malfunction Emissions</u> B. The authorization of emission limits for startup, shutdown, maintenance, and malfunction does not supersede the requirements to minimize emissions per Conditions B101.C and B107. A.				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Methods: SSM emissions are minimized in accordance with the facility SSM Plan. Records of SSM emissions are maintained to ensure compliance.				<input type="checkbox"/> N/A	
Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	End Date		
<u>A107 Facility: Allowable Startup, Shutdown, & Maintenance (SSM) and Malfunction Emissions</u> C. SSM VOC Emissions for venting of gas (Units 1a-5a, 15a-17a) Requirement: (1) Compliance Method (a) The permittee shall perform a facility inlet gas analysis once every year (based on a calendar year) and, on a monthly basis, complete the following monitoring and recordkeeping to demonstrate compliance with the allowable emission limits in Table 107.A for routine or predictable startup, shutdown, and maintenance (SSM) emissions. (b) All emissions due to routine or predictable startup, shutdown, and/or maintenance (SSM) must be included under and shall not exceed the SSM emission limits in this permit.				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
(2) Emissions Due to Preventable Events Emissions that are due entirely or in part to poor maintenance, careless operation, or any other preventable equipment breakdown shall not be included under SSM emissions limits. These emissions shall be reported as excess emissions in accordance with 20.2.7.110 NMAC.(NSR 1073-M7 Condition B, Revised).				<input type="checkbox"/> N/A	
(3) Emissions Exceeding the Permit Limit (a) If the monthly rolling 12-month total of SSM emissions exceeds its emissions limit, the permittee shall report the emissions as excess emissions in accordance with 20.2.7.110 NMAC.					

<p>1. Provide <i>Method(s) or other information or other facts used to determine the compliance status</i> in the “Methods:” row beneath each permit condition.</p> <p>2. If you answered <i>No</i> to question 3, list <i>all</i> deviations in the <i>Deviations</i> section. For all Deviations that <i>produced</i> excess emissions, provide <i>only a)</i> the AQBCR EER Tracking Number. For all Deviations that <i>did not produce</i> excess emissions, provide <i>a)</i> The Unit ID, <i>b)</i> The Cause of and a Description of the Deviation, and <i>c)</i> the Start & End Dates of the deviation. Please indicate in <i>b)</i>, your <i>Description</i>, whether each deviation has been previously reported to NMED.</p>	<p>3. Was this facility <i>continuously</i> in compliance with <i>all</i> requirements of this condition during the reporting period?</p>								
<p>Monitoring: The permittee shall monitor all routine or predictable startups and shutdowns and scheduled maintenance events.</p> <p>Recordkeeping:</p> <p>(1) Compliance Method</p> <p>(a) Each month records shall be kept of the cumulative total of VOC emissions during the first 12 months and, thereafter of the monthly rolling 12 month total VOC emissions.</p> <p>(b) Records shall also be kept of the inlet gas analysis, the percent VOC of the gas based on the most recent gas analysis and used to calculate the emissions, and of the volume of total gas vented in MMscf used to calculate the VOC emissions.</p> <p>(c) The permittee shall identify the equipment or activity and shall describe the event that is the source of emissions.</p> <p>(d) The permittee shall record the demonstrated compliance in accordance with Condition B109, except the requirement in B109.C</p> <p>(2) Condition B109 Records</p> <p>The requirement in B109.E to record the start and end times of SSM events shall not apply to the venting of known quantities of VOC.</p> <p>Reporting: The permittee shall report in accordance with Section B110.</p>									
<p>Methods: Records of SSM events and associated volumes, along with extended gas analyses, are maintained as required and reported in the applicable semiannual report.</p>									
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;">Deviations: Unit ID</th> <th style="width:55%;">Cause & Description of Deviation or Tracking number</th> <th style="width:15%;">Start Date</th> <th style="width:15%;">End Date</th> </tr> </thead> <tbody> <tr> <td style="height: 20px;"> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	End Date					
Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	End Date						
<p><u>A107 Facility: Allowable Startup, Shutdown, & Maintenance (SSM) and Malfunction Emissions</u></p> <p>D. Malfunction Emissions (Unit M1)</p> <p>Requirement:</p> <p>(1) Compliance Method</p> <p>(a) The permittee shall perform a facility inlet gas analysis once every year and complete the following monitoring and recordkeeping to demonstrate compliance with malfunction (M1) emission limits in Table 107.A.</p> <p>(2) Emissions Included in Permit Limits and/or Reported as Excess Emissions</p> <p>(a) For emissions due to malfunctions, the permittee has the option to report these malfunction emissions as excess emissions under 20.2.7.110.A(2) NMAC or include the emissions under the malfunction emission limit.</p>		<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> N/A</p>							

<p>1. Provide <i>Method(s) or other information or other facts used to determine the compliance status</i> in the “Methods:” row beneath each permit condition.</p> <p>2. If you answered <i>No</i> to question 3, list <i>all</i> deviations in the <i>Deviations</i> section. For all Deviations that <i>produced</i> excess emissions, provide <i>only a)</i> the AQBCR EER Tracking Number. For all Deviations that <i>did not produce</i> excess emissions, provide <i>a)</i> The Unit ID, <i>b)</i> The Cause of and a Description of the Deviation, and <i>c)</i> the Start & End Dates of the deviation. Please indicate in <i>b)</i>, your <i>Description</i>, whether each deviation has been previously reported to NMED.</p>	<p>3. Was this facility <i>continuously</i> in compliance with <i>all</i> requirements of this condition during the reporting period?</p>
<p>(b) Once emissions from a malfunction event are submitted in the final report (due not later than ten days after the end of the excess emissions event) per 20.2.7.110.A(2) NMAC, the event is considered an excess emission and cannot be applied toward the malfunction emission limits in this permit.</p> <p>(3) Emissions Exceeding the Permit Limit</p> <p>(b) If the monthly rolling 12-month total of malfunctions emissions exceeds its emissions limit, the permittee shall report the emissions as excess emissions in accordance with 20.2.7.110 NMAC.</p> <p>(4) Emissions Due to Preventable Events</p> <p>Emissions that are due entirely or in part to poor maintenance, careless operation, or any other preventable equipment breakdown shall not be included under the malfunction emissions limit. These emissions shall be reported as excess emissions in accordance with 20.2.7.110 NMAC. (NSR 1073-M7, Condition C revised)</p> <p>Monitoring: The permittee shall monitor all malfunction events.</p> <p>Recordkeeping:</p> <p>(1) Compliance Method</p> <p>(a) Each month records shall be kept of the cumulative total of VOC emissions during the first 12 months and, thereafter of the monthly rolling 12 month total VOC emissions. Any malfunction emissions that have been reported in a final excess emissions report per 20.2.7.110.A(2) NMAC, shall be excluded from this total.</p> <p>(b) Records shall also be kept of the inlet gas analysis, the percent VOC of the gas based on the most recent gas analysis that is used to calculate emissions, and of the volume of total gas vented in MMscf used to calculate emissions.</p> <p>(c) The permittee shall identify the equipment or activity and shall describe the event that is the source of emissions.</p> <p>(d) The permittee shall record the calculated emissions and parameters used in calculations in accordance with Condition B109.</p> <p>(2) Emissions Included Under the Permit Limit or Reported as Excess Emissions</p> <p>(a) The permittee shall record whether emissions are included under the malfunction emissions limit or in the event is included in the final excess emissions report per 20.2.7.110.A(2) NMAC.</p> <p>(3) Condition B109 Records</p> <p>The permittee shall keep records in accordance with Condition B109, except the requirement in B109.E to record the start and end times of malfunction events shall not apply to the venting of known quantities of VOC.</p>	

<p>1. Provide <i>Method(s) or other information or other facts used to determine the compliance status</i> in the “Methods:” row beneath each permit condition.</p> <p>2. If you answered <i>No</i> to question 3, list <i>all</i> deviations in the <i>Deviations</i> section. For all Deviations that <i>produced</i> excess emissions, provide <i>only a)</i> the AQBCR EER Tracking Number. For all Deviations that <i>did not produce</i> excess emissions, provide <i>a)</i> The Unit ID, <i>b)</i> The Cause of and a Description of the Deviation, and <i>c)</i> the Start & End Dates of the deviation. Please indicate in <i>b)</i>, your <i>Description</i>, whether each deviation has been previously reported to NMED.</p>			<p>3. Was this facility <i>continuously</i> in compliance with <i>all</i> requirements of this condition during the reporting period?</p>
<p>Reporting: The permittee shall report in accordance with Section B110.</p>			
<p>Methods: Malfunctions occurring during the applicable monitoring periods were recorded and counted towards the permitted malfunction emission limit, as reported in the applicable semiannual reports.</p>			
Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	End Date
<p>A108 Facility: Hours of Operation</p> <p>A. This facility is authorized for continuous operation. Monitoring, recordkeeping, and reporting are not required to demonstrate compliance with continuous hours of operation.</p>			
<p>A109 Facility: Reporting Schedules</p> <p>A. A Semi-Annual Report of monitoring activities is due within 45 days following the end of every 6-month reporting period. The six month reporting periods start on October 1st and April 1st of each year.</p>			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
<p>Methods: The first semi-annual report for this compliance period was submitted April 28, within 45 days of the end of the monitoring period. Submittal of the semi-annual report associated with this ACC by November 14 will demonstrate compliance with this requirement.</p>			
Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	
<p>A109 Facility: Reporting Schedules</p> <p>B. The Annual Compliance Certification Report is due within 30 days of the end of every 12-month reporting period. The 12-month reporting period starts on October 1st of each year</p>			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
<p>Methods: Submittal of this ACC by October 30 will demonstrate compliance with this requirement.</p>			
Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	
<p>A110 Facility: Fuel and Fuel Sulfur Requirements</p> <p>A. Fuel and Fuel Sulfur Requirements (Units 1-5, 15-17)</p> <p>Requirement: All combustion emission units shall combust only natural gas containing no more than 0.20 grains of total sulfur per 100 dry standard cubic feet. (NSR Permit No. 1073-M6, Specific Condition 1.f., revised)</p> <p>Monitoring: None</p>			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
<p>Recordkeeping: The permittee shall demonstrate compliance with the natural gas or fuel oil limit on total sulfur content by maintaining records of a current, valid purchase contract, tariff sheet or transportation contract for the gaseous or liquid fuel, or fuel gas analysis, specifying the allowable limit or</p>			

<p>1. Provide <i>Method(s) or other information or other facts used to determine the compliance status</i> in the “Methods:” row beneath each permit condition.</p> <p>2. If you answered <i>No</i> to question 3, list <i>all</i> deviations in the <i>Deviations</i> section. For <i>all</i> Deviations that <i>produced</i> excess emissions, provide <i>only a)</i> the AQBCR EER Tracking Number. For <i>all</i> Deviations that <i>did not produce</i> excess emissions, provide <i>a)</i> The Unit ID, <i>b)</i> The Cause of and a Description of the Deviation, and <i>c)</i> the Start & End Dates of the deviation. Please indicate in <i>b)</i>, your <i>Description</i>, whether each deviation has been previously reported to NMED.</p>	<p>3. Was this facility <i>continuously</i> in compliance with <i>all</i> requirements of this condition during the reporting period?</p>								
<p>less. Alternatively, compliance may be demonstrated by keeping a receipt or invoice from a commercial fuel supplier, with each fuel delivery, which shall include the delivery date, the fuel type delivered, the amount of fuel delivered, and the maximum sulfur content of the fuel.</p> <p>If fuel gas analysis is used, the analysis shall be conducted and recorded annually. Annual analyses shall occur not less than 9 months and not greater than 15 months since the previous analysis.</p> <p>Reporting: The permittee shall report in accordance with Section B110.</p>									
<p>Methods: ASTM D-6667 lab analyses are included with the applicable semi-annual report.</p>									
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;">Deviations: Unit ID</th> <th style="width:55%;">Cause & Description of Deviation or Tracking number</th> <th style="width:15%;">Start Date</th> <th style="width:15%;">End Date</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	End Date					
Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	End Date						
<p>A111 Facility: 20.2.61 NMAC Opacity</p> <p>A. 20.2.61 NMAC Opacity Requirements (Units 1-5, 11b-14b, 15-17)</p> <p>Requirement: Visible emissions from each stationary combustion emission stacks shall not equal or exceed an opacity of 20 percent in accordance with the requirements at 20.2.61.109 NMAC. (NSR 1073-M6, Condition 3.a)</p> <p>Monitoring:</p> <p>(1) Use of natural gas fuel constitutes compliance with 20.2.61 NMAC unless opacity equals or exceeds 20% averaged over a 10-minute period.</p> <p>(2) When any visible emissions are observed during operation other than during startup mode, opacity shall be measured over a 10-minute period, in accordance with the procedures at 40 CFR 60, Appendix A, Reference Method 9 (EPA Method 9) as required by 20.2.61.114 NMAC.</p> <p>(3) Alternatively, the operator will be allowed to shut down the equipment within 1 hour of seeing visible emissions, and subsequently perform maintenance/repair to eliminate the visible emissions. Following completion of equipment maintenance/repair, the operator shall conduct visible emission observations following startup in accordance with the following procedures:</p> <p>(a) Visible emissions observations shall be conducted over a 10-minute period during operation after completion of startup mode in accordance with the procedures at 40 CFR 60, Appendix A, Reference Method 22 (EPA Method 22). If no visible emissions are observed, no further action is required.</p> <p>(b) If any visible emissions are observed during completion of the EPA Method 22 observation, subsequent opacity observations shall be conducted over a 10-minute period, in accordance with the procedures at EPA Method 9 as required by 20.2.61.114 NMAC.</p> <p>(4) For the purposes of this condition, Startup mode is defined as the startup period that is described in the facility’s startup plan.</p> <p>Recordkeeping:</p> <p>(1) If any visible emissions observations were conducted, the permittee shall keep records in accordance with the requirements of Section B109 and</p>		<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> N/A</p>							

1. Provide <i>Method(s) or other information or other facts used to determine the compliance status</i> in the “Methods:” row beneath each permit condition. 2. If you answered <i>No</i> to question 3, list <i>all</i> deviations in the <i>Deviations</i> section. For all Deviations that <i>produced</i> excess emissions, provide <i>only a)</i> the AQBCR EER Tracking Number. For all Deviations that <i>did not produce</i> excess emissions, provide <i>a)</i> The Unit ID, <i>b)</i> The Cause of and a Description of the Deviation, and <i>c)</i> the Start & End Dates of the deviation. Please indicate in <i>b)</i> , your <i>Description</i> , whether each deviation has been previously reported to NMED.			3. Was this facility <i>continuously</i> in compliance with <i>all</i> requirements of this condition during the reporting period?
as follows:			
(a) For any visible emissions observations conducted in accordance with EPA Method 22, record the information on the form referenced in EPA Method 22, Section 11.2.			
(b) For any opacity observations conducted in accordance with the requirements of EPA Method 9, record the information on the form referenced in EPA Method 9, Sections 2.2 and 2.4.			
Reporting: The permittee shall report in accordance with Section B110.			
Methods: Natural gas is used for fuel. No visible emissions were observed during the monitoring period.			
Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	
EQUIPMENT SPECIFIC REQUIREMENTS			
<u>A201 Engines</u>			
A. Maintenance and Repair Monitoring (Units 1-5 and 15-17)			
Requirement: Compliance with the allowable emission limits in Table 106.A shall be demonstrated by properly maintaining and repairing the units.			
Monitoring: Maintenance and repair shall meet the minimum manufacturer's or permittee's recommended maintenance schedule. Activities that involve maintenance, adjustment, replacement, or repair of functional components with the potential to affect the operation of an emission unit shall be documented as they occur for the following events:			
(1) Routine maintenance that takes a unit out of service for more than two hours during any twenty-four-hour period.			
(2) Unscheduled repairs that require a unit to be taken out of service for more than two hours in any twenty-four-hour period.			
Recordkeeping: The permittee shall maintain records in accordance with Section B109, including records of maintenance and repairs activities and a copy of the manufacturer’s or permittee’s recommended maintenance schedule.			
Reporting: The permittee shall report in accordance with Section B110.			
Methods: Maintenance and repair records are maintained as required and included with the applicable semi-annual reports.			
Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	
A201 Engines			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			

<p>1. Provide <i>Method(s) or other information or other facts used to determine the compliance status</i> in the “Methods:” row beneath each permit condition.</p> <p>2. If you answered <i>No</i> to question 3, list <i>all</i> deviations in the <i>Deviations</i> section. For all Deviations that <i>produced</i> excess emissions, provide <i>only a)</i> the AQBCR EER Tracking Number. For all Deviations that <i>did not produce</i> excess emissions, provide <i>a)</i> The Unit ID, <i>b)</i> The Cause of and a Description of the Deviation, and <i>c)</i> the Start & End Dates of the deviation. Please indicate in <i>b)</i>, your <i>Description</i>, whether each deviation has been previously reported to NMED.</p>	<p>3. Was this facility <i>continuously</i> in compliance with <i>all</i> requirements of this condition during the reporting period?</p>
<p>B. Periodic Emissions Testing (Units 1-5 and 15-17)</p> <p>Requirement: Compliance with the allowable emission limits in Table 106.A shall be demonstrated by completing the following periodic emission tests.</p> <p>Monitoring:</p> <p>(1) The permittee shall test using a portable analyzer or EPA Reference Methods subject to the requirements and limitations of Section B108, General Monitoring Requirements.</p> <p>(2) Emission testing is required for NOx and CO and shall be carried out as described below.</p> <p>(3) Test results that demonstrate compliance with the CO emission limits shall also be considered to demonstrate compliance with the VOC emission limits.</p> <p>(4) For units with g/hp-hr emission limits, in addition to the requirements stated in Section B108, the engine load shall be calculated by using the following equation:</p> $\text{Load(Hp)} = \frac{\text{Fuel consumption (scfh)} \times \text{Measured fuel heating value (LHV btu/scf)}}{\text{Manufacturer's rated BSFC (btu/bhp-hr) at 100\% load or best efficiency}}$ <p>(1) Testing Frequency</p> <p>(a) The monitoring period shall be annual based on a calendar year.</p> <p>(b) The tests shall continue based on the existing testing schedule.</p> <p>(c) All subsequent monitoring shall occur in each succeeding monitoring period. No two monitoring events shall occur closer together in time than 25% of a monitoring period.</p> <p>(2) The permittee shall follow the General Testing Procedures of Section B111.</p> <p>(3) Performance testing required by 40 CFR 60, Subpart JJJJ or 40 CFR 63, Subpart ZZZZ may be used to satisfy these periodic testing requirements if they meet the requirements of this condition and are completed during the specified monitoring period.</p> <p>Recordkeeping: The permittee shall maintain records in accordance with Section B109, B110, and B111.</p> <p>Reporting: The permittee shall report according to Section B109, B110, and B111.</p>	<p><input type="checkbox"/> N/A</p>

1. Provide <i>Method(s) or other information or other facts used to determine the compliance status</i> in the “Methods:” row beneath each permit condition. 2. If you answered <i>No</i> to question 3, list <i>all</i> deviations in the <i>Deviations</i> section. For <i>all</i> Deviations that <i>produced</i> excess emissions, provide <i>only a)</i> the AQBCR EER Tracking Number. For <i>all</i> Deviations that <i>did not produce</i> excess emissions, provide <i>a)</i> The Unit ID, <i>b)</i> The Cause of and a Description of the Deviation, and <i>c)</i> the Start & End Dates of the deviation. Please indicate in <i>b)</i> , your <i>Description</i> , whether each deviation has been previously reported to NMED.			3. Was this facility <i>continuously</i> in compliance with <i>all</i> requirements of this condition during the reporting period?
Methods: Results of annual periodic testing are maintained as required and are included with the applicable semi-annual reports.			
Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	End Date
A201 Engines C. Initial Compliance Test (Unit 4) Requirement: Compliance with the allowable emission limits in Table 106.A shall be demonstrated by performing an initial compliance test. Monitoring: (1) The permittee shall perform an initial compliance test in accordance with the General Testing Requirements of Section B111. (2) Emission testing is required for NOx and CO. (3) Test results that demonstrate compliance with the CO emission limits shall also be considered to demonstrate compliance with the VOC emission limits. (4) The monitoring exemptions of Section B108 do not apply to this requirement. (5) For units with g/hp-hr emission limits, the engine load shall be calculated by using the following equation: Load(Hp) = $\frac{\text{Fuel consumption (scfh)} \times \text{Measured fuel heating value (LHV btu/scf)}}{\text{Manufacturer's rated BSFC (btu/bhp-hr) at 100\% load or best efficiency}}$ Recordkeeping: The permittee shall maintain records in accordance with the applicable Sections in B109, B110, and B111. Reporting: The permittee shall report in accordance with the applicable Sections in B109, B110, and B111.			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Methods: Unit 4 is not installed. Initial compliance testing will be performed after installation and startup.			
Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	End Date

<p>1. Provide <i>Method(s) or other information or other facts used to determine the compliance status</i> in the “Methods:” row beneath each permit condition.</p> <p>2. If you answered <i>No</i> to question 3, list <i>all</i> deviations in the <i>Deviations</i> section. For <i>all</i> Deviations that <i>produced</i> excess emissions, provide <i>only a)</i> the AQBCR EER Tracking Number. For <i>all</i> Deviations that <i>did not produce</i> excess emissions, provide <i>a)</i> The Unit ID, <i>b)</i> The Cause of and a Description of the Deviation, and <i>c)</i> the Start & End Dates of the deviation. Please indicate in <i>b)</i>, your <i>Description</i>, whether each deviation has been previously reported to NMED.</p>	<p>3. Was this facility <i>continuously</i> in compliance with <i>all</i> requirements of this condition during the reporting period?</p>								
<p><u>A201 Engines</u></p> <p>D. 40 CFR 60, Subpart JJJJ (Potentially Unit 4)</p> <p>Requirement: The unit will be subject to 40 CFR 60, Subparts A and JJJJ if the unit is constructed (ordered) and manufactured after the applicability dates in 40 CFR 60.4230 and the permittee shall comply with the notification requirements in Subpart A and the specific requirements of Subpart JJJJ.</p> <p>Monitoring: The permittee shall comply with all applicable monitoring requirements in 40 CFR 60, Subpart A and Subpart JJJJ, including but not limited to 60.4243.</p> <p>Recordkeeping: The permittee shall comply with all applicable recordkeeping requirements in 40 CFR 60, Subpart A and Subpart JJJJ, including but not limited to 60.4245.</p> <p>Reporting: The permittee shall comply with all applicable reporting requirements in 40 CFR 60, Subpart A and Subpart JJJJ, including but not limited to 60.4245.</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> N/A</p>								
<p>Methods: Unit 4 is not installed. Applicability will be determined upon installation.</p>									
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;">Deviations: Unit ID</th> <th style="width:55%;">Cause & Description of Deviation or Tracking number</th> <th style="width:15%;">Start Date</th> <th style="width:15%;">End Date</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	End Date					
Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	End Date						
<p><u>A201 Engines</u></p> <p>E. 40 CFR 63, Subpart ZZZZ (Potentially Unit 4)</p> <p>Requirement: The unit will be subject to 40 CFR 63, Subparts A and ZZZZ if they meet the applicability criteria in 40 CFR 63.6590. The permittee shall comply with any applicable notification requirements in Subpart A and any specific requirements of Subpart ZZZZ.</p> <p>Monitoring: The permittee shall comply with all applicable monitoring requirements of 40 CFR 63, Subpart A and Subpart ZZZZ.</p> <p>Recordkeeping: The permittee shall comply with all applicable recordkeeping requirements of 40 CFR 63, Subpart A and Subpart ZZZZ, including but not limited to 63.6655 and 63.10.</p> <p>Reporting: The permittee shall comply with all applicable reporting requirements of 40 CFR 63, Subpart A and ZZZZ, including but not limited to 63.6645, 63.6650, 63.9, and 63.10.</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> N/A</p>								

1. Provide <i>Method(s) or other information or other facts used to determine the compliance status</i> in the “Methods:” row beneath each permit condition. 2. If you answered <i>No</i> to question 3, list <i>all</i> deviations in the <i>Deviations</i> section. For all Deviations that <i>produced</i> excess emissions, provide <i>only a)</i> the AQBCR EER Tracking Number. For all Deviations that <i>did not produce</i> excess emissions, provide <i>a)</i> The Unit ID, <i>b)</i> The Cause of and a Description of the Deviation, and <i>c)</i> the Start & End Dates of the deviation. Please indicate in <i>b)</i> , your <i>Description</i> , whether each deviation has been previously reported to NMED.			3. Was this facility <i>continuously</i> in compliance with <i>all</i> requirements of this condition during the reporting period?
Methods: Unit 4 is not installed. Applicability will be determined upon installation.			
Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	End Date
<u>A202 Glycol Dehydrators</u> A. Extended Gas Analysis and GRI-GLYCalc calculation (Units 11a, 12a, 13a, 14a) Requirement: Compliance with the allowable VOC emission limits in Table 106.A shall be demonstrated by conducting an annual (based on a calendar year) extended gas analysis on the dehydrator inlet gas and by calculating emissions using GRI-GLYCalc. (NSR 1073-M6, Condition 3.c) Monitoring: The permittee shall conduct an annual (based on a calendar year) GRI-GLYCalc analysis using the most recent extended gas analysis, and verify the input data. The permittee may use a method of calculating dehydrator emissions other than the most current version of GRI-GLYCalc if approved by the Department. Changes in the calculated emissions due solely to a change in the calculation methodology shall not be deemed an exceedance of an emission limit. Recordkeeping: The permittee shall identify in a summary table all parameters that were used as inputs in the GRI-GLYCalc model. The permittee shall keep a record of the results, noting the VOC and HAP emission rates for the dehydrator obtained from estimates using GRI-GLYCalc. Reporting: The permittee shall report in accordance with Section B110.			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Methods: The GRI-GLYCalc records, containing the required information and results, are maintained as required. Dehydrator extended gas analyses and GRI-GLYCalc records are included with the applicable semi-annual monitoring reports.			
Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	End Date
<u>A202 Glycol Dehydrators</u> B. Glycol pump circulation rate (Units 11a, 12a, 13a, 14a) Requirement: Compliance with the allowable VOC emission limits in Table 106.A shall be demonstrated by monitoring the glycol pump circulation rate for each unit to ensure the rate shall not exceed 3.5 gallons per minute. Monitoring: The permittee shall monitor the circulation rate quarterly, based on a calendar quarter (January 1st through March 31st, April 1 through June 30th, July 1st through September 30th, and October 1st through December 31st). Monitoring shall include calibration or inspection of the pump rate setting.			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A

<p>1. Provide <i>Method(s) or other information or other facts used to determine the compliance status</i> in the “Methods:” row beneath each permit condition.</p> <p>2. If you answered <i>No</i> to question 3, list <i>all</i> deviations in the <i>Deviations</i> section. For <i>all</i> Deviations that <i>produced</i> excess emissions, provide <i>only a)</i> the AQBCR EER Tracking Number. For <i>all</i> Deviations that <i>did not produce</i> excess emissions, provide a) The Unit ID, b) The Cause of and a Description of the Deviation, and c) the Start & End Dates of the deviation. Please indicate in b), your <i>Description</i>, whether each deviation has been previously reported to NMED.</p>			<p>3. Was this facility <i>continuously</i> in compliance with <i>all</i> requirements of this condition during the reporting period?</p>
<p>Recordkeeping: The permittee shall maintain records that include a description of the monitoring and are in accordance with Section B109.</p>			
<p>Reporting: The permittee shall report in accordance with Section B110.</p>			
<p>Methods: Dehydrator glycol recirculation rate records are maintained as required and are included with the applicable semi-annual monitoring reports.</p>			
Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	End Date
<p>A202 Glycol Dehydrators</p> <p>C. 40 CFR 63, Subpart HH (Units 11a, 12a, 13a, 14a)</p> <p>Requirement: The units are subject to 40 CFR 63, Subpart HH and the permittee shall comply with all applicable requirements, including the general standards of 40 CFR 63.764.</p> <p>Monitoring: The permittee shall monitor as required by 40 CFR 63.772(b)(2) to demonstrate that the units are exempt from General Standards.</p> <p>Recordkeeping: The permittee shall maintain the records required by 40 CFR 63.774(d)(1)(ii) to demonstration compliance with the general standard exemptions found in 40 CFR 63.764(e).</p> <p>Reporting: The permittee shall comply with the applicable reporting requirements of 40 CFR 63.775 and in Section B110.</p> <p>Methods: Records of monitoring are maintained per 63.774(d)(1)(ii) to demonstrate compliance with the general standard exemptions found in 40 CFR 63.764(e).</p>			<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> N/A</p>
Deviations: Unit ID	Cause & Description of Deviation or Tracking number	Start Date	End Date

PART B General Conditions

1. Have these General Conditions been met during this reporting period? <u>Check only one box per subject heading.</u> <u>Explain answers in remarks row under subject heading.</u>	2. Was this facility <i>continuously</i> in compliance with this requirement during the reporting period?
<u>B101 Legal</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A – Explain Below
REMARKS: The facility was in compliance with applicable requirements during the applicable period.	
<u>B102 Authority</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A – Explain Below
REMARKS: Only the permitted owner operated the facility during the applicable period.	
<u>B103 Annual Fee</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A – Explain Below
REMARKS: 2019 operating permit emission fees were submitted on May 27, 2020.	
<u>B104 Appeal Procedures</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A – Explain Below
REMARKS: Department action.	
<u>B105 Submittal of Reports and Certifications</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A – Explain Below
REMARKS: Stack test reports, semi-annual reports and ACCs are submitted to the appropriate regulatory personnel.	
<u>B106 NSPS and/or MACT Startup, Shutdown, and Malfunction Operations</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A – Explain Below
REMARKS: Although NSPS and/or NESHAP standards apply to this facility, no units currently operating are subject to these requirements.	
<u>B107 Startup, Shutdown, and Maintenance Operations</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A – Explain Below
REMARKS: The facility is operated in accordance with the permittee's SSM work practice plan.	
<u>B108 General Monitoring Requirements</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A – Explain Below
REMARKS: Periodic test reports will included in the applicable semi-annual reports.	
<u>B109 General Recordkeeping Requirements</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A – Explain Below
REMARKS: Records are maintained in accordance with recordkeeping requirements.	
<u>B110 General Reporting Requirements</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A – Explain Below
REMARKS: Reports are submitted in accordance with reporting requirements.	
<u>B111 General Testing Requirements</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A – Explain Below
REMARKS: Testing that occurred during the applicable period was completed in accordance with the appropriate procedures.	
<u>B112 Compliance</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A – Explain Below
REMARKS: Records and permits are maintained as required. Representatives have not been denied access to the facility and applicable files during the applicable period.	

PART B General Conditions

<u>B113 Permit Reopening and Revocation</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A – <i>Explain Below</i>
REMARKS: No communication has been received from the regulating agency to indicate that the permit has been reopened, revoked or revised.	
<u>B114 Emergencies</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A – <i>Explain Below</i>
REMARKS: No emergencies occurred during this period.	
<u>B115 Stratospheric Ozone</u>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A – <i>Explain Below</i>
REMARKS: The facility is not subject to 40CFR 82 subpart F.	
<u>B116 Acid Rain Sources</u>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A – <i>Explain Below</i>
REMARKS: The facility is not subject to 40CFR 72.	
<u>B117 Risk Management Plan</u>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A – <i>Explain Below</i>
REMARKS: The facility is not subject to 40CFR 68.	

Section 21

Addendum for Landfill Applications

Do not print this section unless this is a landfill application.

Landfill Applications are not required to complete Sections 1-C Input Capacity and Production Rate, 1-E Operating Schedule, 17 Compliance Test History, and 18 Streamline Applications. Section 12 – PSD Applicability is required only for Landfills with Gas Collection and Control Systems and/or landfills with other non-fugitive stationary sources of air emissions such as engines, turbines, boilers, heaters. All other Sections of the Universal Application Form are required.

EPA Background Information for MSW Landfill Air Quality Regulations:

<https://www3.epa.gov/airtoxics/landfill/landflpg.html>

NM Solid Waste Bureau Website: <https://www.env.nm.gov/swb/>

Not applicable.

Section 22: Certification

Company Name: Harvest Four Corners, LLC

I, Travis Jones, 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 10 day of August, 2021, upon my oath or affirmation, before a notary of the State of

New Mexico

Travis Jones
*Signature

8/10/2021
Date

Travis Jones
Printed Name

EHS Manager
Title

Scribed and sworn before me on this 10 day of August, 2021.

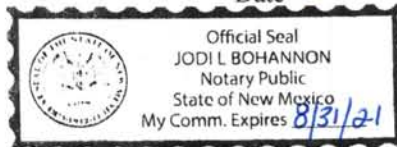
My authorization as a notary of the State of New Mexico expires on the

31st day of August, 2021.

Jodi L. Bohannon
Notary's Signature

8/10/2021
Date

Jodi L. Bohannon
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.