

# *Cirrus Consulting, LLC*

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March 25, 2022

Elizabeth Bisbey-Kuehn  
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 Number P003-R4  
Harvest Four Corners, LLC – Gobernador VV Compressor Station

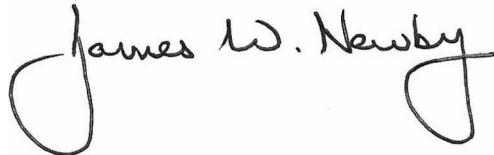
Dear Ms. Bisbey-Kuehn,

On behalf of Harvest Four Corners, LLC (Harvest), Cirrus Consulting, LLC submits the enclosed application to renew the Title V operating permit for the Gobernador VV Compressor Station.

Thank you for your assistance. If you have questions or need any additional information, please contact Jennifer Deal of Harvest at (505) 324-5128.

Sincerely,

**CIRRUS CONSULTING, LLC**

A handwritten signature in black ink that reads "James W. Newby". The signature is written in a cursive style with a large initial "J" and a long horizontal stroke.

James W. Newby

Attachment

Gobernador VV Compressor Station Title V Operating Permit Renewal Application

c: Jennifer Deal, Harvest

**NEW MEXICO 20.2.70 NMAC APPLICATION  
TO RENEW PERMIT NUMBER P003-R4**

**Gobernador VV Compressor Station**

**Submitted By:**



**HARVEST FOUR CORNERS, LLC  
1755 Arroyo Drive  
Bloomfield, New Mexico 87413**

**Prepared By:**

**CIRRUS CONSULTING, LLC  
11139 Crisp Air Drive  
Colorado Springs, Colorado 80908  
(801) 294-3024**

**March 2022**

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## **Introduction**

The Harvest Four Corners, LLC (Harvest) Gobernador VV Compressor Station currently operates under a construction permit, PSD-742-M7, dated August 3, 2016, and a Title V operating permit, P003-R4, dated March 9, 2018 (with a revision -M1 dated July 16, 2021).

A list of the equipment currently approved for use at the facility by the Title V operating permit can be found in Tables 2-A and 2-B of Section 2 of this application. To be consistent with the numbering used in other Harvest permits, the following changes have been made to equipment numbers:

- Malfunction emissions are labeled MAL, rather than MALF.
- Equipment leaks are labeled F1, rather than FUG.
- Rather than T-101, T-102, T-104, T-105, T-106, GM-1, GT-1 & Sump, the storage tanks are labeled T1-T8, respectively.

Equipment leaks (Unit F1) have also been added to the insignificant source list.

This application is being submitted to renew the Title V operating permit.

### ***Process Description***

The Gobernador VV Compressor Station is permitted to receive natural gas via the pipeline and to compress it using three compressors driven by spark ignition natural gas-fired reciprocating engines. This compressed gas is injected back into the pipeline. The facility is also equipped with miscellaneous storage tanks.



b	Plant Operator's New Mexico Corporate ID or Tax ID: <b>76-0451075</b>	
3	Plant Owner(s) name(s): <b>Same as #2 above</b>	Phone/Fax: <b>Same as #2 above</b>
a	Plant Owner(s) Mailing Address(s): <b>Same as #2a above</b>	
4	Bill To (Company): <b>Same as #2 above</b>	Phone/Fax: <b>Same as #2 above</b>
a	Mailing Address: <b>Same as #2a above</b>	E-mail: <b>N/A</b>
5	<input type="checkbox"/> Preparer: <input type="checkbox"/> Consultant: <b>James Newby, Cirrus Consulting, LLC</b>	Phone/Fax: <b>(801) 294-3024</b>
a	Mailing Address: <b>11139 Crisp Air Drive, Colorado Springs, CO 80908</b>	E-mail: <b>jnewby@cirrusllc.com</b>
6	Plant Operator Contact: <b>Jennifer Deal</b>	Phone/Fax: <b>(505) 324-5128 / (505) 632-4782</b>
a	Address: <b>Same as #2a above</b>	E-mail: <b>jdeal@harvestmidstream.com</b>
7	Air Permit Contact: <b>Same as #6 above</b>	Title: <b>Environmental Specialist</b>
a	E-mail: <b>Same as #6a above</b>	Phone/Fax: <b>Same as #6 above</b>
b	Mailing Address: <b>Same as #2a above</b>	
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 type="checkbox"/> Yes <input checked="" 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, give month and year of shut down (MM/YY): <b>05/12/2021</b>
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 <b>It is assumed this question refers to question 4 rather than question 3.</b>	
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: <b>P003-R4-M1</b>
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: <b>N/A</b>
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: <b>N/A</b>
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: <b>PSD-0742-M7</b>
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: <b>N/A</b>

### 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: <b>3.38 MMCF<sup>(a)</sup></b>	Daily: <b>81 MMCF<sup>(a)</sup></b>	Annually: <b>29,565 MMCF<sup>(a)</sup></b>
b	Proposed	Hourly: <b>3.38 MMCF<sup>(a)</sup></b>	Daily: <b>81 MMCF<sup>(a)</sup></b>	Annually: <b>29,565 MMCF<sup>(a)</sup></b>
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: <b>3.38 MMCF<sup>(a)</sup></b>	Daily: <b>81 MMCF<sup>(a)</sup></b>	Annually: <b>29,565 MMCF<sup>(a)</sup></b>

b	Proposed	Hourly: <b>3.38 MMCF<sup>(a)</sup></b>	Daily: <b>81 MMCF<sup>(a)</sup></b>	Annually: <b>29,565 MMCF<sup>(a)</sup></b>
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<sup>(a)</sup> The station capacity is a direct function of available horsepower. The throughput is therefore dependent on atmospheric temperature and pressure, gas temperature and pressure, relative humidity and gas quality, as well as other factors. The “throughput” expressed above is a nominal quantity (with a 15 percent safety factor), neither an absolute maximum, nor an average. Actual throughput will vary from the nominal amount.

### Section 1-D: Facility Location Information

1	Section: <b>31</b>	Range: <b>7W</b>	Township: <b>30N</b>	County: <b>Rio Arriba</b>	Elevation (ft): <b>6,021</b>
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): <b>266,396</b>			UTM N (in meters, to nearest 10 meters): <b>4,073,056</b>	
b	AND Latitude (deg., min., sec.): <b>36° 46' 27"</b>			Longitude (deg., min., sec.): <b>107° 37' 04"</b>	
3	Name and zip code of nearest New Mexico town: <b>Navajo Dam, New Mexico 87419</b>				
4	Detailed Driving Instructions from nearest NM town (attach a road map if necessary): <b>From Navajo Dam, drive southwest on NM-539 toward US-64 for three miles, turn left (east) and drive 0.3 miles, facility is on the left.</b>				
5	The facility is <b>approximately 2 miles south of Navajo Dam, New Mexico.</b>				
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: <b>Rio Arriba County, San Juan County</b>				
8	20.2.72 NMAC applications <b>only</b> : Will the property on which the facility is proposed to be constructed or operated be closer than 50 km (31 miles) to other states, Bernalillo County, or a Class I area (see <a href="http://www.env.nm.gov/aqb/modeling/classIareas.html">www.env.nm.gov/aqb/modeling/classIareas.html</a> )? <input type="checkbox"/> Yes <input type="checkbox"/> No (20.2.72.206.A.7 NMAC) If yes, list all with corresponding distances in kilometers: <b>N/A</b>				
9	Name nearest Class I area: <b>Mesa Verde National Park</b>				
10	Shortest distance (in km) from facility boundary to the boundary of the nearest Class I area (to the nearest 10 meters): <b>52.00</b>				
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: <b>≈2,000</b>				
12	Method(s) used to delineate the Restricted Area: <b>Fence</b> “ <b>Restricted Area</b> ” 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? <b>N/A</b>				

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

1	Facility <b>maximum</b> operating ( $\frac{\text{hours}}{\text{day}}$ ): <b>24</b>	( $\frac{\text{days}}{\text{week}}$ ): <b>7</b>	( $\frac{\text{weeks}}{\text{year}}$ ): <b>52</b>	( $\frac{\text{hours}}{\text{year}}$ ): <b>8,760</b>
2	Facility’s maximum daily operating schedule (if less than 24 $\frac{\text{hours}}{\text{day}}$ )? Start: <b>N/A</b>		<input type="checkbox"/> AM <input type="checkbox"/> PM	End: <b>N/A</b> <input type="checkbox"/> AM <input type="checkbox"/> PM
3	Month and year of anticipated start of construction: <b>N/A</b>			
4	Month and year of anticipated construction completion: <b>N/A</b>			
5	Month and year of anticipated startup of new or modified facility: <b>N/A</b>			
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: <b>N/A</b>		
a	If yes, NOV date or description of issue: <b>N/A</b>	NOV Tracking No: <b>N/A</b>	
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: : <b>N/A</b>	Date: : <b>N/A</b>	Requirement # (or page # and paragraph #):: <b>N/A</b>
d	Provide the required text to be inserted in this permit: : <b>N/A</b>		
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"/> <b>Major</b> ( <input checked="" type="checkbox"/> $\geq 10$ tpy of any single HAP <b>OR</b> <input type="checkbox"/> $\geq 25$ tpy of any combination of HAPS) <b>OR</b> <input type="checkbox"/> <b>Minor</b> ( <input type="checkbox"/> $< 10$ tpy of any single HAP <b>AND</b> <input type="checkbox"/> $< 25$ tpy of any combination of HAPS)		
5	Is any unit exempt under 20.2.72.202.B.3 NMAC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
a	If yes, include the name of company providing commercial electric power to the facility: <b>N/A</b> 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"/> <b>N/A</b> (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): <b>Travis Jones</b>	Phone: <b>(713) 289-2630</b>
a	R.O. Title: <b>EH&amp;S Manager</b>	R.O. e-mail: <b>trjones@harvestmidstream.com</b>
b	R. O. Address: <b>1111 Travis Street, Houston, Texas 77002</b>	
2	Alternate Responsible Official (20.2.70.300.D.2 NMAC): <b>TBD</b>	Phone: <b>TBD</b>
a	A. R.O. Title: <b>TBD</b>	A. R.O. e-mail: <b>TBD</b>
b	A. R. O. Address: <b>TBD</b>	
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): <b>N/A</b>	
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.): <b>Hilcorp Energy Company</b>	
a	Address of Parent Company: <b>Same as #1b above</b>	
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.): <b>N/A</b>	
6	Telephone numbers & names of the owners' agents and site contacts familiar with plant operations: <b>N/A</b>	
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: <b>Yes, Colorado (<math>\approx 25</math> km), Jicarilla Indian Reservation (<math>\approx 52</math> km)</b>	



## Section 1-I – Submittal Requirements

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

### Hard Copy Submittal Requirements:

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

### Electronic files sent by (check one):

CD/DVD attached to paper application

secure electronic transfer. Air Permit Contact Name \_\_\_\_\_

Email \_\_\_\_\_

Phone number \_\_\_\_\_

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

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

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

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

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

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

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

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### 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 <sup>1</sup>	Source Description	Make	Model #	Serial #	Manufacturer's Rated Capacity <sup>3</sup> (Specify Units)	Requested Permitted Capacity <sup>3</sup> (Specify Units)	Date of Manufacture <sup>2</sup>	Controlled by Unit #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB) <sup>4</sup>	Replacing Unit No.
							Date of Construction/Reconstruction <sup>2</sup>	Emissions vented to Stack #				
1	Compressor Engine	Superior	16SGTB	332959	2650 hp	2489 hp	Jan 1989	N/A	31000203	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	4SLB	N/A
							Jan 1989	1				
2	Compressor Engine	Superior	16SGTB	332960	2650 hp	2489 hp	Jan 1989	N/A	31000203	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	4SLB	N/A
							Jan 1989	2				
3	Compressor Engine	Superior	16SGTB	332961	2650 hp	2489 hp	Jan 1989	N/A	31000203	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	4SLB	N/A
							Jan 1989	3				
SSM	Startups, Shutdowns & Maintenance	N/A	N/A	N/A	N/A	N/A	N/A	N/A	31000299	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							N/A	N/A				
MAL	Malfunctions	N/A	N/A	N/A	N/A	N/A	N/A	N/A	31000299	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							N/A	N/A				
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced		
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced		
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced		
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced		
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced		
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced		
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced		
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced		

<sup>1</sup> 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.

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

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

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

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

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

Unit Number	Source Description	Manufacturer	Model No.	Max Capacity	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5)	Date of Manufacture /Reconstruction <sup>2</sup>	For Each Piece of Equipment, Check One
			Serial No.	Capacity Units	Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Installation /Construction <sup>2</sup>	
T1	Produced Water Storage Tank	Permian	Unknown	210	20.2.72.202.B.5	09/01/1989	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			24075	bbl	Items 1.a & 1.b	Unknown	
T2	Used Lubrication Oil Storage Tank	Permian	Unknown	210	20.2.72.202.B.2	09/01/1989	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			24068	bbl	Item 5	Unknown	
T3	Lubrication Oil Storage Tank	Permian	Unknown	210	20.2.72.202.B.2	09/01/1989	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			24072	bbl	Item 5	Unknown	
T4	Antifreeze Storage Tank	Permian	Unknown	210	20.2.72.202.B.2	09/01/1989	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			24084	bbl	Item 5	Unknown	
T5	Fresh Water Storage Tank	Permian	Unknown		No emissions	09/01/1989	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			24069		Listed for informational purposes	Unknown	
T6	Methanol Storage Tank	Unknown	N/A	500	20.2.72.202.B.5	Unknown	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			24076	gal	Items 1.a & 1.b	Unknown	
T7	Triethylene Glycol (TEG) Storage Tank	Unknown	N/A	500	20.2.72.202.B.2	Unknown	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			N/A	gal	Item 5	Unknown	
T8	Waste Water (Sump) Storage Tank	Unknown	N/A	264	20.2.72.202.B.2	Unknown	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			N/A	gal	Item 5	Unknown	
L1	Produced Water Truck Loading	N/A	N/A	N/A	20.2.72.202.B.5	N/A	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			N/A	N/A	Items 1.a & 1.b	N/A	
F1	Equipment Leaks	N/A	N/A	N/A	20.2.72.202.B.5	N/A	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			N/A	N/A	Items 1.a & 1.b	N/A	
INST	Instrument Gas Dryer	Unknown	N/A	2	20.2.72.202.B.5	Unknown	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
			N/A	MMSCF/yr	Items 1.a & 1.b	Unknown	
							<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced
							<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced

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

<sup>2</sup> Specify date(s) required to determine regulatory applicability.





**Table 2-E: Requested Allowable Emissions**

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

Unit No.	NOx		CO		VOC		SOx		PM <sup>1</sup>		PM10 <sup>1</sup>		PM2.5 <sup>1</sup>		H <sub>2</sub> S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
1	8.23	36.06	13.83	60.58	3.29	14.42	1.04E-02	4.55E-02	1.77E-01	7.73E-01	1.77E-01	7.73E-01	1.77E-01	7.73E-01	-	-	-	-
2	8.23	36.06	13.83	60.58	3.29	14.42	1.04E-02	4.55E-02	1.77E-01	7.73E-01	1.77E-01	7.73E-01	1.77E-01	7.73E-01	-	-	-	-
3	8.23	36.06	13.83	60.58	3.29	14.42	1.04E-02	4.55E-02	1.77E-01	7.73E-01	1.77E-01	7.73E-01	1.77E-01	7.73E-01	-	-	-	-
SSM	-	-	-	-	-	3.33	-	-	-	-	-	-	-	-	-	-	-	-
MAL	-	-	-	-	-	2.50	-	-	-	-	-	-	-	-	-	-	-	-
<b>Totals</b>	24.70	108.17	41.49	181.73	9.88	49.10	3.12E-02	1.37E-01	5.30E-01	2.32	5.30E-01	2.32	5.30E-01	2.32	-	-	-	-

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









**Table 2-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 <input checked="" type="checkbox"/> HAP or <input type="checkbox"/> TAP		Provide Pollutant Name Here <input type="checkbox"/> HAP or <input type="checkbox"/> TAP		Provide Pollutant Name Here <input type="checkbox"/> HAP or <input type="checkbox"/> TAP		Provide Pollutant Name Here <input type="checkbox"/> HAP or <input type="checkbox"/> TAP		Provide Pollutant Name Here <input type="checkbox"/> HAP or <input type="checkbox"/> TAP		Provide Pollutant Name Here <input type="checkbox"/> HAP or <input type="checkbox"/> TAP		Provide Pollutant Name Here <input type="checkbox"/> HAP or <input type="checkbox"/> TAP		Provide Pollutant Name Here <input type="checkbox"/> HAP or <input type="checkbox"/> TAP			
		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
1	1	1.0	4.3	0.9	4.0																
2	2	1.0	4.3	0.9	4.0																
3	3	1.0	4.3	0.9	4.0																
SSM	SSM	-	-	-	-																
MAL	MAL	-	-	-	-																
<b>Totals:</b>		2.9	12.8	2.8	12.1																















### Table 2-P: Greenhouse Gas Emissions

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

		CO <sub>2</sub> ton/yr	N <sub>2</sub> O ton/yr	CH <sub>4</sub> ton/yr	SF <sub>6</sub> ton/yr	PFC/HFC ton/yr <sup>2</sup>										Total GHG Mass Basis ton/yr <sup>4</sup>	Total CO <sub>2</sub> e ton/yr <sup>5</sup>
Unit No.	GWPs <sup>1</sup>	1	298	25	22,800	footnote 3											
	mass GHG																
	CO <sub>2</sub> e																
	mass GHG																
	CO <sub>2</sub> e																
	mass GHG																
	CO <sub>2</sub> e																
	mass GHG																
	CO <sub>2</sub> e																
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	CO <sub>2</sub> e																
	mass GHG																
	CO <sub>2</sub> e																
	mass GHG																
	CO <sub>2</sub> e																
<b>Totals</b>	mass GHG																
	CO <sub>2</sub> e																

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

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

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

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

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

# Section 3

## Application Summary

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

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

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

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### *Application Summary*

The Harvest Gobernador VV Compressor Station currently operates under a construction permit, PSD-742-M7, dated August 3, 2016, and a Title V operating permit, P003-R4, dated March 9, 2018 (with a revision -M1 dated July 16, 2021).

A list of the equipment currently approved for use at the facility by the Title V operating permit can be found in Tables 2-A and 2-B of Section 2 of this application. To be consistent with the numbering used in other Harvest permits, the following changes have been made to equipment numbers:

- Malfunction emissions are labeled MAL, rather than MALF.
- Equipment leaks are labeled F1, rather than FUG.
- Rather than T-101, T-102, T-104, T-105, T-106, GM-1, GT-1 & Sump, the storage tanks are labeled T1-T8, respectively.

Equipment leaks (Unit F1) have also been added to the insignificant source list.

This application is being submitted to renew the Title V operating permit.

The applicable regulation is 20.2.70 New Mexico Administrative Code (NMAC). The lowest level regulatory citation is 20.2.70.300.B.(2) NMAC.

There are no modifications in this application to de-bottleneck impacts or change the facility's major/minor status (both prevention of significant deterioration [PSD] & Title V).

### *Process Description*

The Gobernador VV Compressor Station is permitted to receive natural gas via the pipeline and to compress it using three compressors driven by spark ignition natural gas-fired reciprocating engines. This compressed gas is injected back into the pipeline. The facility is also equipped with miscellaneous storage tanks. Produced water is trucked off-site.

***Startup, Shutdown and Maintenance Emissions***

Except for blowdown events (described below), it is concluded there are no SSM emissions in excess of those identified for steady-state operation as seen in Table 2-E of Section 2. Discussions justifying this conclusion are provided in Section 6.

SSM emissions from blowdowns of the compressors and piping associated with the facility were calculated from the quantity of gas vented during each event, the composition of the gas, and the number of events. The number of blowdowns events were estimated based on historical operations. A safety factor was included.

# Section 4

## Process Flow Sheet

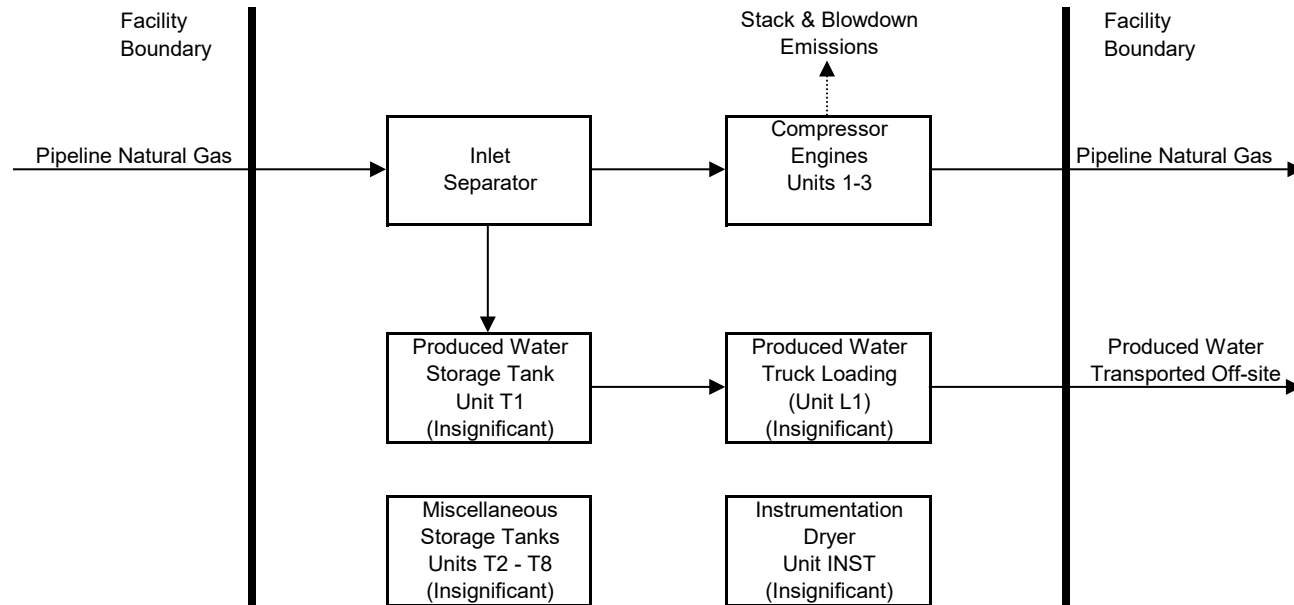
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A **process flow sheet** and/or block diagram indicating the individual equipment, all emission points and types of control applied to those points. The unit numbering system should be consistent throughout this application.

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A process flow diagram is provided in this section. Please see the following page.

# Flow Diagram



# Section 5

## Plot Plan Drawn To Scale

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

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A plot plan is provided in this section. Please see the following page.

GOVERNADOR COMPRESSOR STATION



**AERIAL MAP**  
**ENTERPRISE PRODUCTS OPERATING, LLC**  
**GOVERNADOR COMPRESSOR STATION**  
**SEC 30-T311N-R7W, RIO ARRIBA COUNTY, NM**



	NA	Date	File Path
Designed By	NA		AERIAL MAP*.DWG
Drawn By	CC	10/04/16	Drawing No.
Checked By	VC	10/04/16	2
Approved By	VC	10/04/16	Sheet 2 of 3



# Section 6

## All Calculations

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

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

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

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

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

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

**Significant Figures:**

- A. All emissions standards are deemed to have at least two significant figures, but not more than three significant figures.
- B. At least 5 significant figures shall be retained in all intermediate calculations.
- C. In calculating emissions to determine compliance with an emission standard, the following rounding off procedures shall be used:

- (1) If the first digit to be discarded is less than the number 5, the last digit retained shall not be changed;
- (2) If the first digit discarded is greater than the number 5, or if it is the number 5 followed by at least one digit other than the number zero, the last figure retained shall be increased by one unit; **and**
- (3) If the first digit discarded is exactly the number 5, followed only by zeros, the last digit retained shall be rounded upward if it is an odd number, but no adjustment shall be made if it is an even number.
- (4) The final result of the calculation shall be expressed in the units of the standard.

**Control Devices:** In accordance with 20.2.72.203.A(3) and (8) NMAC, 20.2.70.300.D(5)(b) and (e) NMAC, and 20.2.73.200.B(7) NMAC, the permittee shall report all control devices and list each pollutant controlled by the control device

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

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### ***Engines***

The NO<sub>2</sub>, CO, and VOC emissions from the engines were calculated from manufacturer's data (obtained from the previous Title V application). The SO<sub>2</sub> and particulate emissions were calculated using AP-42 emission factors from Table 3.2-2. HAP emissions were calculated using GRI-HAPCalc 3.0. All emissions were calculated assuming each engine operates at full site capacity for 8,760 hours per year.

The engines startup with no load and a rich fuel mixture. As a result, emissions are minimized. Because the engines take only minutes to reach operating temperature, emissions during startup are not expected to exceed the steady-state allowable limits. Similarly, emissions during shutdown 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 engines are not in operation during maintenance.

No modifications are being made to the engines or their operation. Permitted emissions are carried forward and not revised.

### ***Compressors and Piping (SSM)***

Blowdown emissions from the compressors and piping associated with the facility occur when high pressure gas is used to purge air from the system prior to startups. Also, after shutdowns, high pressure gas is released to atmosphere as a safety precaution.

VOC and HAP emissions from blowdowns of the compressors and piping associated with the station were calculated from the quantity of gas vented during each event, the composition of the gas, and the number of events. The quantity of gas vented during each event was determined by Harvest engineering. The composition of the gas was determined from a recent extended gas analysis. For each unit, the annual number of blowdown events were estimated based on historical operations. A safety factor was added because emissions from each blowdown event are dependent on the composition of the gas in the pipeline and because the number of blowdowns in a year may vary. Use of the safety factor is also designed to ensure an adequate emissions limit, which includes emissions from other miscellaneous startup, shutdown and maintenance activities.

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

No modifications are being made to the SSM emissions. Permitted VOC emissions are carried forward and not revised.

### ***Malfunctions***

Malfunction emissions were set at 2.5 tons of VOC per year to account for emissions that may occur during upsets and malfunctions (including, but not limited to, unscheduled blowdowns and relief valve release). Based on the gas release rate associated with the set annual VOC emission rate, HAP emissions were calculated using a recent extended gas analysis. Note that these malfunction emissions include the venting of gas only, not combustion emissions.

No modifications are being made to the malfunction emissions. Permitted VOC emissions are carried forward and not revised.

***Instrument Air Dryer (Insignificant Source)***

VOC and HAP emissions from the instrument air dryer were calculated from the quantity of gas vented, the composition of the gas, and the operating time. The composition of the gas was determined from a recent extended gas analysis.

The dryer is an exempt source in accordance with 20.2.72.202.B(5) NMAC (VOC emissions are less than 0.5 tons per year) and a Title V insignificant source in accordance with Insignificant Activity Items #1a & #1b.

***Equipment Leak Emissions (Insignificant Source)***

VOC and HAP emissions from equipment leaks were calculated using emission factors from Table 2.4 of the 1995 Protocol for Equipment Leak Emission Estimates published by the Environmental Protection Agency (EPA) and the gas stream composition obtained from a recent extended gas analysis. Emissions were calculated assuming the equipment operates 8,760 hours per year.

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

The equipment leak emissions are an exempt source in accordance with 20.2.72.202.B(5) NMAC (VOC emissions are less than 0.5 tons per year) and a Title V insignificant source in accordance with Insignificant Activity Items #1a & #1b.

***Produced Water Truck Loading (Insignificant Source)***

The VOC emissions from produced water truck loading were calculated using the AP-42 emissions factor identified in Section 5.2-1. The data used to calculate the emission factor was obtained assuming the liquid was pure water.

Due to the nature of the source, it is estimated that SSM emissions from truck loading are accounted for in the calculations.

The produced water truck loading is an exempt source in accordance with 20.2.72.202.B(5) NMAC (VOC emissions are less than 0.5 tons per year) and a Title V insignificant source in accordance with Insignificant Activity Items #1a & #1b.

***Storage Tanks (Insignificant Sources)***

VOC and HAP emissions from the produced water tank were calculated using maximum throughputs and emission factors from the Colorado Department of Public Health and Environment (CDPHE) and the Texas Commission on Environmental Quality (TCEQ). As the VOC emission rate is less than 0.5 tpy, the produced water storage tank is an NSR exempt source in accordance with 20.2.72.202.B(5) NMAC and a Title V insignificant source in accordance with Insignificant Activity Item #1.

Methanol tank emission were calculated using TANKS 4. The VOC emission rate from the methanol storage tank is 49.59 pounds per year. As such, it is an exempt source under 20.2.72.202.B(5) NMAC and a Title V insignificant source in accordance with Insignificant Activity List Item #1.a.

The following assumptions were used to determine the remaining storage tanks are insignificant sources:

- Residual oil #6 was used as an estimate for lubrication oil. As the vapor pressure of residual oil #6 is less than 0.2 psia, the tanks containing lubrication oil are NSR exempt sources under 20.2.72.202.B(2) NMAC and Title V insignificant sources in accordance with Insignificant Activity Item #5. Note that the waste water (sump) tank is assumed to be 99% water and 1% residual oil #6.;

- Anti-freeze is an inhibited ethylene glycol (EG) coolant containing 50 percent EG and 50 percent water. As the vapor pressure of EG is less than 0.2 psia, the tank containing antifreeze is an exempt source under 20.2.72.202.B(2) NMAC and a Title V insignificant source in accordance with Insignificant Activity List Item #5.
- As the vapor pressure of TEG is less than 0.2 psia, the tank containing TEG is an exempt sources under 20.2.72.202.B(2) NMAC and a Title V insignificant source in accordance with Insignificant Activity List Item #5;

## Engine Exhaust Emissions Calculations

Unit Number: **1-3**  
 Description: Superior 16SGTB  
 Type: Four Stroke Lean Burn

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

### Horsepower Calculations

<b>6,021</b> ft above MSL	Elevation	Mfg. data
<b>2,650</b> hp	Nameplate hp	NMAQB Procedure # 02.002-00
2,489 hp	NMAQB Site-rated hp	(loss of 3% for every 1,000 ft over 4,000 ft)

### Fuel Consumption

<b>7100</b> Btu/hp-hr	Brake specific fuel consumption	Previous Title V application
17.67 MMBtu/hr	Hourly fuel consumption	Btu/hp-hr x NMAQB site-rated hp / 1,000,000
<b>950</b> Btu/scf	Field gas heating value	Nominal heat content
18,604 scf/hr	Hourly fuel consumption	MMBtu/hr x 1,000,000 / Btu/scf
<b>8,760</b> hr/yr	Annual operating time	Harvest Four Corners, LLC
154,826 MMBtu/yr	Annual fuel consumption	MMBtu/hr x hr/yr
162.98 MMscf/yr	Annual fuel consumption	scf/hr x hr/yr / 1,000,000

### Steady-State Emission Rates

Pollutants	Emission Factors, g/hp-hr	Uncontrolled Emission Rates,	
		pph	tpy
NOX	<b>1.50</b>	8.23	36.06
CO	<b>2.52</b>	13.83	60.58
VOC	<b>0.60</b>	3.29	14.42

Emission factors taken from previous application

Uncontrolled Emission Rates (pph) = g/hp-hr x Mfg. 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	<b>5.88E-04</b>	1.04E-02	4.55E-02
PM	<b>9.99E-03</b>	1.77E-01	7.73E-01
PM10	<b>9.99E-03</b>	1.77E-01	7.73E-01
PM2.5	<b>9.99E-03</b>	1.77E-01	7.73E-01

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

Particulate factors include both filterable and condensable 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

**GRI-HAPCalc® 3.0**  
**Engines Report**

<b>Facility ID:</b>	<b>GOBERNADOR VV</b>	<b>Notes:</b>
<b>Operation Type:</b>	<b>COMPRESSOR STATION</b>	
<b>Facility Name:</b>	<b>GOBERNADOR VV COMPRESSOR</b>	
<b>User Name:</b>	<b>Harvest Four Corners, LLC</b>	
<b>Units of Measure:</b>	<b>U.S. STANDARD</b>	

*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: 16SGTB

Hours of Operation: 8,760 Yearly  
 Rate Power: 2,489 hp  
 Fuel Type: FIELD GAS  
 Engine Type: 4-Stroke, Lean Burn  
 Emission Factor Set: FIELD > EPA > 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>
<b>HAPs</b>			
Formaldehyde	4.0414	0.16830000 g/bhp-hr	GRI Literature
Benzene	0.1249	0.00520000 g/bhp-hr	GRI Literature
Toluene	0.0504	0.00210000 g/bhp-hr	GRI Literature
Xylenes(m,p,o)	0.0336	0.00140000 g/bhp-hr	GRI Literature
<b>Total</b>	<b>4.2503</b>		

## Compressor Blowdown Emissions Calculations

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

**Throughput**

<b>3</b> # of units	Number of units	Harvest Four Corners, LLC
<b>365</b> events/yr/unit	Blowdowns per year per unit	Harvest Four Corners, LLC
<b>16,276</b> scf/event	Gas loss per blowdown	Harvest Four Corners, LLC
17,822,220 scf/yr	Annual gas loss	# of units x events/yr/unit x scf/event

**Emission Rates**

Pollutants	Emission Factors, lb/scf	Uncontrolled, Emission Rates, tpy
VOC	3.737E-04	3.33
Benzene	2.059E-07	1.83E-03
Ethylbenzene	0.000E+00	0.00E+00
n-Hexane	1.136E-06	1.01E-02
Isooctane	0.000E+00	0.00E+00
Toluene	2.429E-07	2.16E-03
Xylene	2.798E-07	2.49E-03

Emission factors calculated from gas composition (see table below)  
 Uncontrolled Emission Rates (tpy) = scf/yr x lb/scf / 2,000 lb/ton

**Gas Composition**

Components	Mole Percents, %	Molecular Weights, lb/lb-mole	Emission Factors, lb/scf
Carbon dioxide	27.3858	44.01	3.177E-02
Hydrogen sulfide	0.0000	34.07	0.000E+00
Nitrogen	0.0474	28.01	3.499E-05
Methane	71.0216	16.04	3.003E-02
Ethane	1.2496	30.07	9.904E-04
Propane	0.2337	44.09	2.716E-04
Isobutane	0.0271	58.12	4.151E-05
n-Butane	0.0232	58.12	3.554E-05
Isopentane	0.0045	72.15	8.558E-06
n-Pentane	0.0025	72.15	4.754E-06
Cyclopentane	0.0002	70.14	3.697E-07
n-Hexane	0.0005	86.17	1.136E-06
Cyclohexane	0.0003	84.16	6.655E-07
Other hexanes	0.0013	86.18	2.953E-06
Heptanes	0.0004	100.20	1.056E-06
Methylcyclohexane	0.0003	98.19	7.764E-07
Isooctane	0.0000	100.21	0.000E+00
Benzene	0.0001	78.11	2.059E-07
Toluene	0.0001	92.14	2.429E-07
Ethylbenzene	0.0000	106.17	0.000E+00
Xylenes	0.0001	106.17	2.798E-07
C8+ Heavies	0.0014	110.00	4.059E-06
Total	100.0001		
Total VOC			3.737E-04

Gas stream composition obtained from **Gobernador VV** extended gas analysis dated 3/9/2021  
 Emission Factors (lb/scf) = (% / 100) x lb/lb-mole / 379.4 scf/lb-mole

## Malfunction Emissions Data and Calculations

Unit Number: **MAL**  
 Description: **Malfunctions**

### Emission Rates

Pollutants	Weight Percents, %	Uncontrolled Emission Rates, tpy
VOC		2.50
Benzene	5.509E-02	1.38E-03
Ethylbenzene	0.000E+00	0.00E+00
n-Hexane	3.039E-01	7.60E-03
Isooctane	0.000E+00	0.00E+00
Toluene	6.499E-02	1.62E-03
Xylene	7.488E-02	1.87E-03

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	27.3858	44.01		
Hydrogen sulfide	0.0000	34.07		
Nitrogen	0.0474	28.01		
Methane	71.0216	16.04		
Ethane	1.2496	30.07		
Propane	0.2337	44.09	0.1030	7.268E+01
Isobutane	0.0271	58.12	0.0158	1.111E+01
n-Butane	0.0232	58.12	0.0135	9.510E+00
Isopentane	0.0045	72.15	0.0032	2.290E+00
n-Pentane	0.0025	72.15	0.0018	1.272E+00
Cyclopentane	0.0002	70.14	0.0001	9.894E-02
n-Hexane	0.0005	86.17	0.0004	3.039E-01
Cyclohexane	0.0003	84.16	0.0003	1.781E-01
Other hexanes	0.0013	86.18	0.0011	7.902E-01
Heptanes	0.0004	100.20	0.0004	2.827E-01
Methylcyclohexane	0.0003	98.19	0.0003	2.078E-01
Isooctane	0.0000	100.21	0.0000	0.000E+00
Benzene	0.0001	78.11	0.0001	5.509E-02
Toluene	0.0001	92.14	0.0001	6.499E-02
Ethylbenzene	0.0000	106.17	0.0000	0.000E+00
Xylenes	0.0001	106.17	0.0001	7.488E-02
C8+ Heavies	0.0014	110.00	0.0015	1.086E+00
Total	100.0001			
Total VOC			0.1418	

Gas stream composition obtained from **Gobernador VV** extended gas analysis dated **3/9/2021**  
 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)



## Instrument Air Dryer Emissions Calculations

Unit Number: **INST**  
 Description: Instrument Air Dryer (Insignificant Source)

**Throughput**

**20** scf/hr                      Hourly volume  
**8,760** hr/yr                    Operating time  
 175,200 scf/yr                Annual volume

Harvest Four Corners, LLC  
 Harvest Four Corners, LLC  
 scf/hr x hr/yr

**Emission Rates**

Pollutants	Emission Factors, lb/scf	Uncontrolled, Emission Rates, tpy
VOC	3.737E-04	3.27E-02
Benzene	2.059E-07	1.80E-05
Ethylbenzene	0.000E+00	0.00E+00
n-Hexane	1.136E-06	9.95E-05
Isooctane	0.000E+00	0.00E+00
Toluene	2.429E-07	2.13E-05
Xylene	2.798E-07	2.45E-05

Emission factors calculated from gas composition (see table below)  
 Uncontrolled Emission Rates (tpy) = scf/yr x lb/scf / 2,000 lb/ton

**Gas Composition**

Components	Mole Percents, %	Molecular Weights, lb/lb-mole	Emission Factors, lb/scf
Carbon dioxide	27.3858	44.01	3.177E-02
Hydrogen sulfide	0.0000	34.07	0.000E+00
Nitrogen	0.0474	28.01	3.499E-05
Methane	71.0216	16.04	3.003E-02
Ethane	1.2496	30.07	9.904E-04
Propane	0.2337	44.09	2.716E-04
Isobutane	0.0271	58.12	4.151E-05
n-Butane	0.0232	58.12	3.554E-05
Isopentane	0.0045	72.15	8.558E-06
n-Pentane	0.0025	72.15	4.754E-06
Cyclopentane	0.0002	70.14	3.697E-07
n-Hexane	0.0005	86.17	1.136E-06
Cyclohexane	0.0003	84.16	6.655E-07
Other hexanes	0.0013	86.18	2.953E-06
Heptanes	0.0004	100.20	1.056E-06
Methylcyclohexane	0.0003	98.19	7.764E-07
Isooctane	0.0000	100.21	0.000E+00
Benzene	0.0001	78.11	2.059E-07
Toluene	0.0001	92.14	2.429E-07
Ethylbenzene	0.0000	106.17	0.000E+00
Xylenes	0.0001	106.17	2.798E-07
C8+ Heavies	0.0014	110.00	4.059E-06
Total	100.0001		
Total VOC			3.737E-04

Gas stream composition obtained from **Gobernador VV** extended gas analysis dated **3/9/2021**  
 Emission Factors (lb/scf) = (% / 100) x lb/lb-mole / 379.4 scf/lb-mole

### Equipment Leaks Emissions Calculations

Unit Number: **F1**

Description: Valves, Connectors, Seals & Open-Ended Lines (Insignificant Source)

#### Steady-State Emission Rates

Equipment	Number of Components, # of sources	Emission Factors, kg/hr/source	Emission Factors, lb/hr/source	Uncontrolled Emission Rates,	
				pph	tpy
Valves (Gas)	120	4.5E-03	0.0099	1.19	5.20
Valves (Light Oil)	125	2.5E-03	0.0055	0.69	3.01
Connectors (Gas)	175	2.0E-04	0.0004	0.08	0.34
Connectors (Light Oil)	260	2.1E-04	0.0005	0.12	0.53
Pump Seals (Gas)	0	2.4E-03	0.0053	0.00	0.00
Pump Seals (Light Oil)	3	1.3E-02	0.0286	0.09	0.38
Flanges (Gas)	300	3.9E-04	0.0009	0.26	1.13
Flanges (Light Oil)	313	1.1E-04	0.0002	0.08	0.33
Compressor Seals (Gas)	3	8.8E-03	0.0194	0.06	0.25
Pressure Relief Valves (Gas)	9	8.8E-03	0.0194	0.17	0.76
Process Drains (Light Oil)	6	7.5E-03	0.0165	0.10	0.43
Open-Ended Lines (Gas)	14	2.0E-03	0.0044	0.06	0.27
<b>Total</b>				<b>2.88</b>	<b>12.63</b>

Number of components identified from previous application

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 %	Uncontrolled Emission Rates,	
					pph	tpy
Carbon dioxide	27.3858	44.010	12.052	50.266	1.45E+00	6.35E+00
Hydrogen sulfide	0.0000	34.070	0.000	0.000	0.00E+00	0.00E+00
Nitrogen	0.0474	28.013	0.013	0.055	1.60E-03	7.00E-03
Methane	71.0216	16.043	11.394	47.520	1.37E+00	6.00E+00
Ethane	1.2496	30.070	0.376	1.567	4.52E-02	1.98E-01
Propane	0.2337	44.097	0.103	0.430	1.24E-02	5.43E-02
Isobutane	0.0271	58.123	0.016	0.066	1.89E-03	8.30E-03
n-Butane	0.0232	58.123	0.013	0.056	1.62E-03	7.11E-03
Isopentane	0.0045	72.150	0.003	0.014	3.91E-04	1.71E-03
n-Pentane	0.0025	72.150	0.002	0.008	2.17E-04	9.50E-04
Cyclopentane	0.0002	70.134	0.000	0.001	1.69E-05	7.39E-05
n-Hexane	0.0005	86.177	0.000	0.002	5.18E-05	2.27E-04
Cyclohexane	0.0003	84.161	0.000	0.001	3.04E-05	1.33E-04
Other hexanes	0.0013	86.177	0.001	0.005	1.35E-04	5.90E-04
Heptanes	0.0004	100.204	0.000	0.002	4.82E-05	2.11E-04
Methylcyclohexane	0.0003	98.188	0.000	0.001	3.54E-05	1.55E-04
Isooctane	0.0000	114.231	0.000	0.000	0.00E+00	0.00E+00
Benzene	0.0001	78.114	0.000	0.000	9.40E-06	4.12E-05
Toluene	0.0001	92.141	0.000	0.000	1.11E-05	4.86E-05
Ethylbenzene	0.0000	106.167	0.000	0.000	0.00E+00	0.00E+00
Xylenes	0.0001	106.167	0.000	0.000	1.28E-05	5.59E-05
C8+ Heavies	0.0014	114.231	0.002	0.007	1.92E-04	8.43E-04
<b>Total</b>	100.0001		23.977			
<b>Total VOC</b>				0.592	1.71E-02	7.47E-02

Gas stream composition obtained from **Gobernador VV** extended gas analysis dated **3/9/2021**

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

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

Uncontrolled Emission Rates (pph) = Total Uncontrolled Emission Rate (from Table 1 above) (pph) x (% / 100)

Uncontrolled Emission Rates (tpy) = Total Uncontrolled Emission Rate (from Table 1 above) (tpy) x (% / 100)

## Truck Loading (Produced Water) Emissions Calculations

Unit Number: **L1**

Description: Truck Loading (Insignificant Source)

### Emission Factor

<p><b>0.6</b></p> <p>0.4581 psia (maximum)</p> <p>0.3045 psia (average)</p> <p><b>18.02</b> lb/lb-mole</p> <p>77 °F (maximum)</p> <p>65 °F (average)</p> <p>536.67 °R (maximum)</p> <p>524.67 °R (average)</p> <p>0.11 lb/10<sup>3</sup> gal (maximum)</p> <p>0.08 lb/10<sup>3</sup> gal (average)</p>	<p>Saturation factor, S</p> <p>True vapor pressure of liquid, P</p> <p>True vapor pressure of liquid, P</p> <p>Molecular weight of vapors, M</p> <p>Temperature of liquid</p> <p>Temperature of liquid</p> <p>Temperature of liquid, T</p> <p>Temperature of liquid, T</p> <p>Emission factor, L</p> <p>Emission factor, L</p>	<p>AP-42, Table 5.2-1 (submerged loading &amp; dedicated service)</p> <p>Estimated using Antoine's Equation (see calculations below)</p> <p>Estimated using Antoine's Equation (see calculations below)</p> <p>TANKS 4.0 Database</p> <p>Estimated (see calculations below)</p> <p>Estimated (see calculations below)</p> <p>°F + 459.67</p> <p>°F + 459.67</p> <p>AP-42, Section 5.2, Equation 1</p> <p>AP-42, Section 5.2, Equation 1</p> $L = 12.46 \frac{SPM}{T}$
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### Production Rate

<p><b>8.82</b> 10<sup>3</sup> gal/hr</p> <p><b>35.25</b> 10<sup>3</sup> gal/yr</p>	<p>Maximum hourly production rate</p> <p>Maximum annual production rate</p>	<p>Harvest Four Corners, LLC</p> <p>Harvest Four Corners, LLC</p>
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### Steady-State Emission Rates

Pollutant	Uncontrolled Emission Rates,	
	pph	tpy
VOC	1.01	1.38E-03

The short-term emission rates are calculated using the maximum true vapor pressure and maximum temperature of the liquid  
 The annual emission rates are calculated using the average true vapor pressure and average temperature of the liquid  
 Uncontrolled Emission Rate (pph) = lb/10<sup>3</sup> gal x 10<sup>3</sup> gal/hr  
 Uncontrolled Emission Rate (tpy) = lb/10<sup>3</sup> gal x 10<sup>3</sup> gal/yr / 2,000 lb/ton

Pollutants	Mass Fraction	Uncontrolled Emission Rates,	
		pph	tpy
Benzene	<b>0.0267</b>	2.71E-04	3.68E-07
Ethylbenzene	<b>0.0027</b>	2.71E-05	3.68E-08
n-Hexane	<b>0.0840</b>	8.52E-04	1.16E-06
Toluene	<b>0.0344</b>	3.48E-04	4.73E-07
m-Xylene	<b>0.0229</b>	2.32E-04	3.16E-07

HAP mass fractions are estimated from the produced water tank emission factors  
 HAP Mass Fraction = HAP Emission Factor (lb/bbl) / VOC Emission Factor (lb/bbl)  
 Emission Rates (pph) = VOC Emission Rate (pph) x HAP Mass Fraction  
 Emission Rates (tpy) = VOC Emission Rate (tpy) x HAP Mass Fraction

### Truck Loading (Produced Water) Emissions Calculations

Unit Number: L1

Description: Truck Loading (Insignificant Source)

#### Vapor Pressure of Produced Water:

It is estimated that the true vapor pressure of produced water is approximately equal to the true vapor pressure of pure water. An estimate of the true vapor pressure for water is calculated using Antoine's equation (see AP-42, Section 7.1, Equation 1-25).

##### Maximum:

Temperature = 77 °F

$$\log P = A - (B / (C + T))$$

A = 8.07131

B = 1730.63

C = 233.426

T = 25.00 °C

P = mmHg

$$P = 10^{(A - (B / (C + T)))}$$

P = 23.69 mmHg

P = 0.4581 psi

##### Average:

Temperature = 65 °F

$$\log P = A - (B / (C + T))$$

A = 8.07131

B = 1730.63

C = 233.426

T = 18.33 °C

P = mmHg

$$P = 10^{(A - (B / (C + T)))}$$

P = 15.75 mmHg

P = 0.3045 psi

Note: 760 mmHg = 14.7 psia

## Storage Tank Emissions Calculations

Unit Number: **T1**  
 Description: Produced Water Storage Tank

**Throughput**

210 bbl/turnover	Tank capacity	Harvest Four Corners, LLC
4 turnover/yr	Turnovers per year	Harvest Four Corners, LLC
840 bbl/yr	Annual liquid throughput	bbl/turnover x turnover/yr

**Emission Rates**

Pollutant	Emission Factor, lb/bbl	Uncontrolled, Emission Rate, tpy
VOC	0.262	1.10E-01
Benzene	0.007	2.94E-03
Ethylbenzene	0.0007	2.94E-04
n-Hexane	0.022	9.24E-03
Toluene	0.009	3.78E-03
Xylene	0.006	2.52E-03

VOC, Benzene, and n-Hexane emission factors are taken from the CDPHE PS Memo 09-02 (Oil & Gas Produced Water Tank Batteries - Regulatory Definitions & Permitting Guidance)  
 Ethylbenzene, toluene, and xylene emissions factors (Non-Texas) are taken from the TCEQ Project 2010-29 (Emission Factor Determination for Produced Water Storage Tanks) report  
 Uncontrolled Emission Rates (tpy) = lb/bbl x bbl/yr / 2,000 lb/ton

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

**Identification**

User Identification:	Gobernador VV - T6 (Methanol)
City:	Navajo Dam
State:	New Mexico
Company:	Harvest Four Corners, LLC
Type of Tank:	Horizontal Tank
Description:	500 Gallon Methanol Storage Tank

**Tank Dimensions**

Shell Length (ft):	6.00
Diameter (ft):	3.80
Volume (gallons):	500.00
Turnovers:	4.00
Net Throughput(gal/yr):	2,000.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N

**Paint Characteristics**

Shell Color/Shade:	Red/Primer
Shell Condition	Good

**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**

**Gobernador VV - T6 (Methanol) - Horizontal Tank**  
**Navajo Dam, 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.					
Methyl alcohol	All	71.00	54.97	87.02	60.49	2.0219	1.2287	3.2154	32.0400			32.04	Option 2: A=7.897, B=1474.08, C=229.13

**TANKS 4.0.9d**  
**Emissions Report - Detail Format**  
**Detail Calculations (AP-42)**

**Gobernador VV - T6 (Methanol) - Horizontal Tank**  
**Navajo Dam, New Mexico**

<hr/>	
Annual Emission Calculations	
Standing Losses (lb):	46.5015
Vapor Space Volume (cu ft):	43.3420
Vapor Density (lb/cu ft):	0.0114
Vapor Space Expansion Factor:	0.3110
Vented Vapor Saturation Factor:	0.8308
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	43.3420
Tank Diameter (ft):	3.8000
Effective Diameter (ft):	5.3893
Vapor Space Outage (ft):	1.9000
Tank Shell Length (ft):	6.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0114
Vapor Molecular Weight (lb/lb-mole):	32.0400
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	2.0219
Daily Avg. Liquid Surface Temp. (deg. R):	530.6665
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):	520.1642
Tank Paint Solar Absorptance (Shell):	0.8900
Daily Total Solar Insulation Factor (Btu/sqft day):	1,765.3167
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.3110
Daily Vapor Temperature Range (deg. R):	64.0977
Daily Vapor Pressure Range (psia):	1.9867
Breather Vent Press. Setting Range (psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	2.0219
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	1.2287
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	3.2154
Daily Avg. Liquid Surface Temp. (deg R):	530.6665
Daily Min. Liquid Surface Temp. (deg R):	514.8421
Daily Max. Liquid Surface Temp. (deg R):	546.6909
Daily Ambient Temp. Range (deg. R):	27.9250
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.8308
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	2.0219
Vapor Space Outage (ft):	1.9000
Working Losses (lb):	
Working Losses (lb):	3.0848
Vapor Molecular Weight (lb/lb-mole):	32.0400
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	2.0219
Annual Net Throughput (gal/yr.):	2,000.0000
Annual Turnovers:	4.0000
Turnover Factor:	1.0000
Tank Diameter (ft):	3.8000
Working Loss Product Factor:	1.0000
Total Losses (lb):	49.5863



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

**Emissions Report for: Annual**

**Gobernador VV - T6 (Methanol) - Horizontal Tank**  
**Navajo Dam, New Mexico**

Components	Losses(lbs)		
	Working Loss	Breathing Loss	Total Emissions
Methyl alcohol	3.08	46.50	49.59

## Section 6.a

### Green House Gas Emissions

(Submitting under 20.2.70, 20.2.72 20.2.74 NMAC)

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

#### Calculating GHG Emissions:

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

#### Sources for Calculating GHG Emissions:

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

#### Global Warming Potentials (GWP):

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

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

#### Metric to Short Ton Conversion:

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

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

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CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O exhaust emissions were calculated using emission factors from 40 Code of Federal Regulations (CFR), Part C, Tables C-1 & C-2 and the combustion source higher heating value (HHV) design heat rates.

The SSM and malfunction CO<sub>2</sub> and CH<sub>4</sub> emissions from blowdown events were calculated from the annual blowdown volumes and gas composition.

The reciprocating compressor CO<sub>2</sub> and CH<sub>4</sub> emissions were calculated using a combination of equations W-26 & W-36 (from Subpart W).

CO<sub>2</sub> and CH<sub>4</sub> equipment leak emissions were calculated using the TOC emission factors and gas stream composition.

## Green House Gas Emissions Data and Calculations

Sources	Facility Total Emissions				
	CO2, tpy	CH4, tpy	N2O, tpy	GHG, tpy	CO2e, tpy
Engine Exhaust	30,121.99	5.68E-01	5.68E-02	30,122.62	30153.10
SSM Blowdowns	283.08	267.56	--	550.65	6972.21
Reciprocating Compressor Venting	146.34	138.53	--	284.88	3609.66
Equipment Leaks	3.86	3.65	--	7.51	95.16
Malfunctions	212.52	200.87	--	413.40	5234.37
<b>Total</b>	<b>30,767.80</b>	<b>611.19</b>	<b>5.68E-02</b>	<b>31,379.05</b>	<b>46,064.50</b>

### Engine Exhaust Emissions

Unit Numbers	Description	Emission Factors			Emission Rates		
		CO2, kg/MMBtu	CH4, kg/MMBtu	N2O, kg/MMBtu	CO2, tpy	CH4, tpy	N2O, tpy
1	Superior 16SGTB	53.06	1.00E-03	1.00E-04	10,040.66	1.89E-01	1.89E-02
2	Superior 16SGTB	53.06	1.00E-03	1.00E-04	10,040.66	1.89E-01	1.89E-02
3	Superior 16SGTB	53.06	1.00E-03	1.00E-04	10,040.66	1.89E-01	1.89E-02
<b>Total</b>					<b>30,121.99</b>	<b>5.68E-01</b>	<b>5.68E-02</b>

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	Superior 16SGTB	Nat. Gas	8,760	17.67	19.64	172,029
2	Superior 16SGTB	Nat. Gas	8,760	17.67	19.64	172,029
3	Superior 16SGTB	Nat. Gas	8,760	17.67	19.64	172,029

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

### SSM Blowdown Emissions

Unit Numbers	Description	Total Gas Losses, scf/yr	CO2 Emission Factors, lb/scf	CH4 Emission Factors, lb/scf	Emission Rates	
					CO2, tpy	CH4, tpy
SSM	SSM Blowdowns	17,822,220	0.0318	0.0300	283.08	267.56

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

## Green House Gas Emissions Data and Calculations

### Reciprocating Compressor Venting Emissions

Unit Numbers	Description	Emission Rates	
		CO2, tpy	CH4, tpy
NA	Blowdown Valve Leakage	13.98	13.23
NA	Rod Packing Emissions	132.36	125.30
NA	Isolation Valve Leakage	0.00	0.00
	Total	146.34	138.53

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

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

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

Unit Numbers	Description	Number of 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	3	33.5	8,760	27.39	71.02	0.0526	0.0192
NA	Rod Packing Emissions	3	317.2	8,760	27.39	71.02	0.0526	0.0192
NA	Isolation Valve Leakage	3	10.5	0	27.39	71.02	0.0526	0.0192

The number of compressors is 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 Williams Field Services, LLC 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)

### Equipment Leaks Emissions

Unit Numbers	Description	Emission Rates	
		CO2, tpy	CH4, tpy
NA	Valves (Gas)	2.0	1.9
NA	Valves (Light Oil)	0.9	0.8
NA	Connectors (Gas)	0.4	0.4
NA	Connectors (Light Oil)	0.3	0.2
NA	Open-Ended Lines (Gas)	0.1	0.1
NA	Pressure Relief Valves (Gas)	0.2	0.2
	Total	3.9	3.7

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

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

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

### Green House Gas Emissions Data and Calculations

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 (Gas)	120	0.121	27.39	71.02	8,760	0.0526	0.0192
NA	Valves (Light Oil)	125	0.050	27.39	71.02	8,760	0.0526	0.0192
NA	Connectors (Gas)	175	0.017	27.39	71.02	8,760	0.0526	0.0192
NA	Connectors (Light Oil)	260	0.007	27.39	71.02	8,760	0.0526	0.0192
NA	Open-Ended Lines (Gas)	14	0.031	27.39	71.02	8,760	0.0526	0.0192
NA	Pressure Relief Valves (Gas)	9	0.193	27.39	71.02	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)

### Malfunction Emissions

Unit Number	Description	Total Component Weight, lb/lb-mole	VOC Component Weight, lb/lb-mole	CO2 Weight % of Total, %	CH4 Weight % of Total, %	Emission Rates		
						VOC, tpy	CO2, tpy	CH4, tpy
MAL	Malfunctions	23.98	0.14	50.27	47.52	2.50	212.52	200.87

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

The VOC emission rate is estimated (see calculations workbook)

$$\text{CO2 Emission Rate (tpy)} = \text{VOC Emission Rate (tpy)} \times (\text{Total Component Weight (lb/lb-mole)} / \text{VOC Component Weight (lb-lb-mole)}) \times (\text{CO2 Weight \% of Total (\%)} / 100)$$

$$\text{CH4 Emission Rate (tpy)} = \text{VOC Emission Rate (tpy)} \times (\text{Total Component Weight (lb/lb-mole)} / \text{VOC Component Weight (lb-lb-mole)}) \times (\text{CH4 Weight \% of Total (\%)} / 100)$$

### 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	27.3858	44.01	12.05	50.2707	0.0318
Hydrogen Sulfide	0.0000	34.07	0.00	0.0000	0.0000
Nitrogen	0.0474	28.01	0.01	0.0554	0.0000
Methane	71.0216	16.04	11.39	47.5153	0.0300
Ethane	1.2496	30.07	0.38	1.5673	0.0010
Propane	0.2337	44.09	0.10	0.4298	0.0003
IsoButane	0.0271	58.12	0.02	0.0657	0.0000
Normal Butane	0.0232	58.12	0.01	0.0562	0.0000
IsoPentane	0.0045	72.15	0.00	0.0135	0.0000
Normal Pentane	0.0025	72.15	0.00	0.0075	0.0000
Cyclopentane	0.0002	70.14	0.00	0.0006	0.0000
n-Hexane	0.0005	86.17	0.00	0.0018	0.0000
Cyclohexane	0.0003	84.16	0.00	0.0011	0.0000
Other Hexanes	0.0013	86.18	0.00	0.0047	0.0000
Heptanes	0.0004	100.20	0.00	0.0017	0.0000
Methylcyclohexane	0.0003	98.19	0.00	0.0012	0.0000
2,2,4-Trimethylpentane	0.0000	100.21	0.00	0.0000	0.0000
Benzene	0.0001	78.11	0.00	0.0003	0.0000
Toluene	0.0001	92.14	0.00	0.0004	0.0000
Ethylbenzene	0.0000	106.17	0.00	0.0000	0.0000
Xylenes	0.0001	106.17	0.00	0.0004	0.0000
C8+ heavies	0.0014	110.00	0.00	0.0064	0.0000
Total	100.0001		23.98	100.0000	0.0632
VOC			0.14	--	0.0004

Gas stream composition obtained from **Gobernador VV** extended gas analysis dated **3/9/2021**

$$\text{Component Weights (lb/lb-mole)} = [\text{Mole Percents (\%)} / 100] \times \text{Molecular Weights (lb/lb-mole)}$$

$$\text{Weight Percent of Total (\%)} = 100 \times \text{Component Weights (lb/lb-mole)} / \text{Total Component Weight (lb/lb-mole)}$$

$$\text{Emission Factors (lb/scf)} = [\text{Mole Percents (\%)} / 100] \times \text{Molecular Weights (lb/lb-mole)} / 379.4 \text{ scf/lb-mole}$$

# Section 7

## Information Used To Determine Emissions

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

- If manufacturer data are used, include specifications for emissions units and control equipment, including control efficiencies specifications and sufficient engineering data for verification of control equipment operation, including design drawings, test reports, and design parameters that affect normal operation.
  - If test data are used, include a copy of the complete test report. If the test data are for an emissions unit other than the one being permitted, the emission units must be identical. Test data may not be used if any difference in operating conditions of the unit being permitted and the unit represented in the test report significantly effect emission rates.
  - If the most current copy of AP-42 is used, reference the section and date located at the bottom of the page. Include a copy of the page containing the emissions factors, and clearly mark the factors used in the calculations.
  - If an older version of AP-42 is used, include a complete copy of the section.
  - If an EPA document or other material is referenced, include a complete copy.
  - Fuel specifications sheet.
  - If computer models are used to estimate emissions, include an input summary (if available) and a detailed report, and a disk containing the input file(s) used to run the model. For tank-flashing emissions, include a discussion of the method used to estimate tank-flashing emissions, relative thresholds (i.e., permit or major source (NSPS, PSD or Title V)), accuracy of the model, the input and output from simulation models and software, all calculations, documentation of any assumptions used, descriptions of sampling methods and conditions, copies of any lab sample analysis.
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Table 3.2-2. UNCONTROLLED EMISSION FACTORS FOR 4-STROKE LEAN-BURN ENGINES<sup>a</sup>  
(SCC 2-02-002-54)

Pollutant	Emission Factor (lb/MMBtu) <sup>b</sup> (fuel input)	Emission Factor Rating
Criteria Pollutants and Greenhouse Gases		
NO <sub>x</sub> <sup>c</sup> 90 - 105% Load	4.08 E+00	B
NO <sub>x</sub> <sup>c</sup> <90% Load	8.47 E-01	B
CO <sup>c</sup> 90 - 105% Load	3.17 E-01	C
CO <sup>c</sup> <90% Load	5.57 E-01	B
CO <sub>2</sub> <sup>d</sup>	1.10 E+02	A
SO <sub>2</sub> <sup>e</sup>	5.88 E-04	A
TOC <sup>f</sup>	1.47 E+00	A
Methane <sup>g</sup>	1.25 E+00	C
VOC <sup>h</sup>	1.18 E-01	C
PM10 (filterable) <sup>i</sup>	7.71 E-05	D
PM2.5 (filterable) <sup>i</sup>	7.71 E-05	D
PM Condensable <sup>j</sup>	9.91 E-03	D
Trace Organic Compounds		
1,1,2,2-Tetrachloroethane <sup>k</sup>	<4.00 E-05	E
1,1,2-Trichloroethane <sup>k</sup>	<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 <sup>k</sup>	2.67E-04	D
1,3-Dichloropropene <sup>k</sup>	<2.64 E-05	E
2-Methylnaphthalene <sup>k</sup>	3.32 E-05	C
2,2,4-Trimethylpentane <sup>k</sup>	2.50 E-04	C
Acenaphthene <sup>k</sup>	1.25 E-06	C



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  $\pm 30$  percent)<sup>4</sup> 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,  $^{\circ}\text{R}$  ( $^{\circ}\text{F} + 460$ )

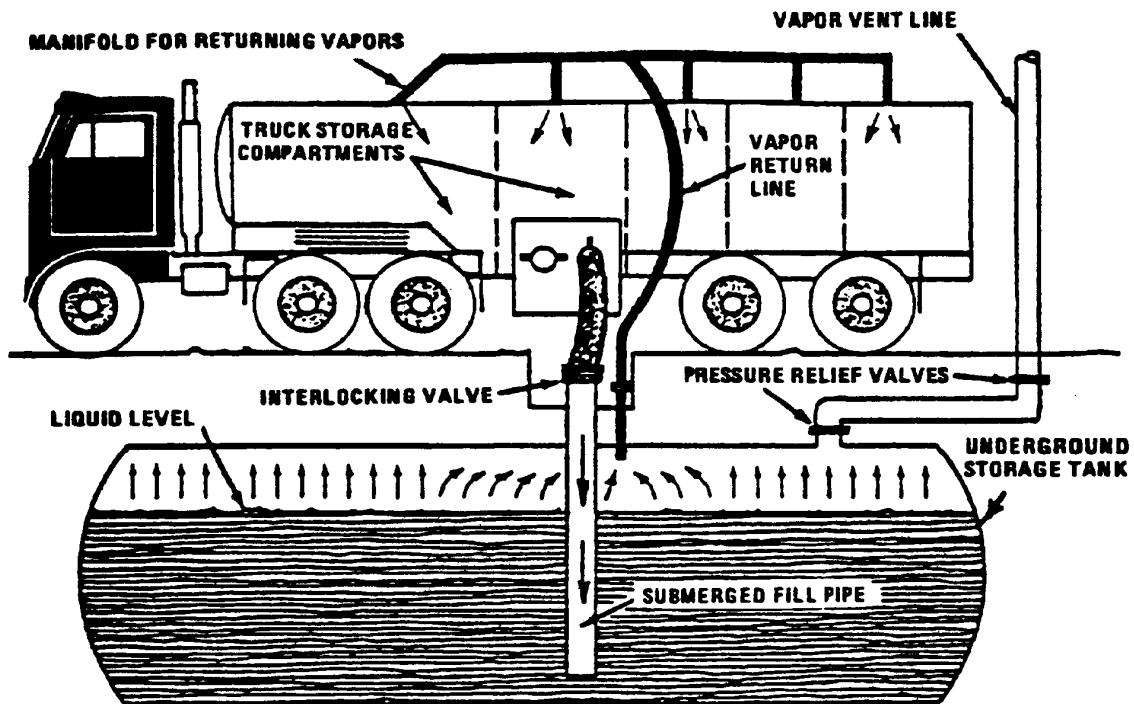


Figure 5.2-5. Tank truck unloading into a service station underground storage tank and practicing "vapor balance" form of emission control.

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 <sup>a</sup>	Submerged loading: ships	0.2
	Submerged loading: barges	0.5

<sup>a</sup> 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.

The saturation factor, S, represents the expelled vapor's fractional approach to saturation, and it accounts for the variations observed in emission rates from the different unloading and loading methods. Table 5.2-1 lists suggested saturation factors.

Emissions from controlled loading operations can be calculated by multiplying the uncontrolled emission rate calculated in Equation 1 by an overall reduction efficiency term:

$$\left( 1 - \frac{\text{eff}}{100} \right)$$

The overall reduction efficiency should account for the capture efficiency of the collection system as well as both the control efficiency and any downtime of the control device. Measures to reduce loading emissions include selection of alternate loading methods and application of vapor recovery equipment. The latter captures organic vapors displaced during loading operations and recovers the vapors by the use of refrigeration, absorption, adsorption, and/or compression. The recovered product is piped back to storage. Vapors can also be controlled through combustion in a thermal oxidation unit, with no product recovery. Figure 5.2-6 demonstrates the recovery of gasoline vapors from tank trucks during loading operations at bulk terminals. Control efficiencies for the recovery units range from 90 to over 99 percent, depending on both the nature of the vapors and the type of control equipment used.<sup>5-6</sup> However, not all of the displaced vapors reach the control device, because of leakage from both the tank truck and collection system. The collection efficiency should be assumed to be 99.2 percent for tanker trucks passing the MACT-level annual leak test (not more than 1 inch water column pressure change in 5 minutes after pressurizing to 18 inches water followed by pulling a vacuum of 6 inches water).<sup>7</sup> A collection efficiency of 98.7 percent (a 1.3 percent leakage rate) should be assumed for trucks passing the NSPS-level annual test (3 inches pressure change). A collection efficiency of 70 percent should be assumed for trucks not passing one of these annual leak tests.<sup>6</sup>

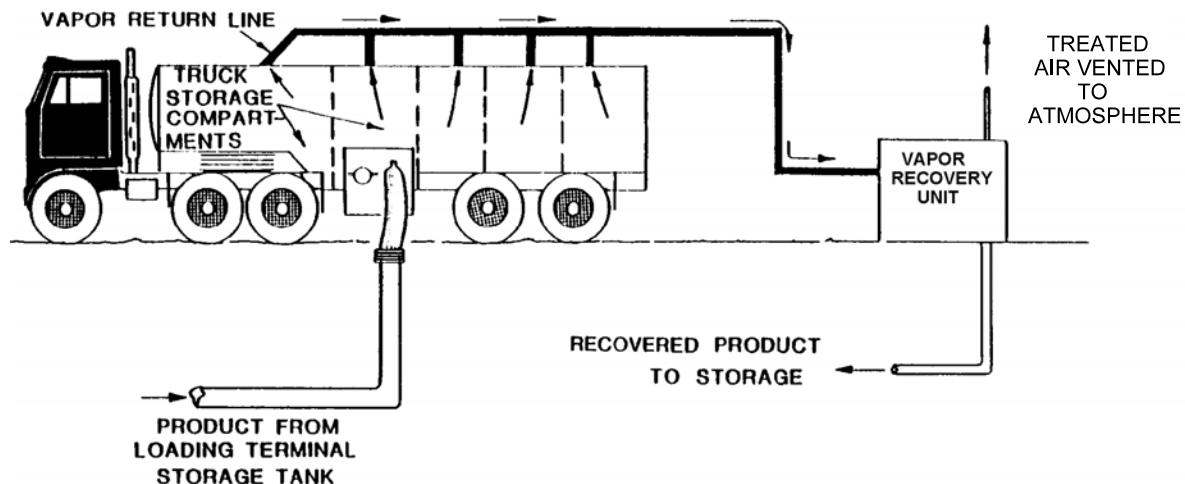


Figure 5.2-6. Tank truck loading with vapor recovery.

## GRI GlyCalc Information

**Meter Number:** 130501  
**Meter Name:** VV Gobernador CS 3-9-2021  
**Location:** VV Gobernador CS  
**Sample Date:** 3/9/2021  
**File name:** VV Gobernador CS 3-9-2021\_1.D

**Flow Pressure:** 210  
**Flow Temp:** 79  
**H2O, Lb/MMCF:** --  
**H2S, ppmol:** --  
**Type:** Spot  
**Pulled by:** Rick Martinez

Component	Mol%	Wt%	LV%
Carbon Dioxide	27.3858	50.2661	27.2695
Hydrogen Sulfide	0.0000	0.0000	0.0000
Nitrogen	0.0474	0.0554	0.0305
Oxygen	0.0000	0.0000	0.0000
Methane	71.0216	47.5197	70.2536
Ethane	1.2496	1.5671	1.9499
Propane	0.2337	0.4297	0.3756
Isobutane	0.0271	0.0656	0.0517
n-Butane	0.0232	0.0562	0.0426
Isopentane	0.0045	0.0135	0.0096
n-Pentane	0.0025	0.0075	0.0053
Cyclopentane	0.0002	0.0005	0.0003
n-Hexane	0.0005 % VOCs	0.0018	0.0012
Cyclohexane	0.0003 0.2956	0.0010	0.0006
Other Hexanes	0.0013	0.0047	0.0030
Heptanes	0.0004	0.0018	0.0012
Methylcyclohexane	0.0003	0.0014	0.0008
2,2,4 Trimethylpentane	0.0000	0.0000	0.0000
Benzene	0.0001	0.0003	0.0001
Toluene	0.0001	0.0005	0.0003
Ethylbenzene	0.0000	0.0000	0.0000
Xylenes	0.0001	0.0004	0.0002
C8+ Heavies	0.0014	0.0071	0.0042
<b>Total</b>	<b>100.0000</b>	<b>100.0000</b>	<b>100.0000</b>

**Constants Used:** GPA Standard 2145-16 (FPS)

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

Equipment Type	Service <sup>a</sup>	Emission Factor (kg/hr/source) <sup>b</sup>
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 <sup>c</sup>	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

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

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

<sup>c</sup>The "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.

## PS Memo 09-02

**To:** Stationary Sources Program, Local Agencies, and Regulated Community  
**From:** Chris Laplante and Roland C. Hea, Colorado Air Pollution Control Division  
**Date:** February 8, 2010  
**Subject:** Oil & Gas Produced Water Tank Batteries  
Regulatory Definitions and Permitting Guidance

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This guidance document is intended to answer frequently asked questions concerning oil and gas industry produced water tank batteries. This document does not address any other equipment types that may be part of a common facility with a tank battery. Nothing in this guidance should be construed regarding Air Pollution Control Division (Division) permitting of evaporation ponds or water treatment facilities. Please consult with the Division for information regarding the permitting of evaporation ponds or water treatment facilities.

### Revision History

October 1, 2009	Initial issuance.
February 8, 2010	First revision. This guidance document replaces the October 1, 2009 version. Revised language to clarify APEN fee structure, definition of modification, APEN submittals, and produced water exemption.

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[https://www.colorado.gov/pacific/sites/default/files/AP\\_Memo-09-02-Oil-\\_-Gas-Produced-Water-Tank-Batteries-Regulatory-Definitions-and-Permitting-Guidance.pdf](https://www.colorado.gov/pacific/sites/default/files/AP_Memo-09-02-Oil-_-Gas-Produced-Water-Tank-Batteries-Regulatory-Definitions-and-Permitting-Guidance.pdf)

### 3. EMISSION FACTORS AND SITE SPECIFIC SAMPLING Q&A

#### 3.1. *What are the State approved default emission factors for produced water tanks?*

County	Produced Water Tank Default Emission Factors <sup>1</sup> (lb/bbl) <sup>2</sup>		
	VOC	Benzene	n-Hexane
Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, Jefferson, Larimer, & Weld	0.262	0.007	0.022
Garfield, Mesa, Rio Blanco, & Moffat	0.178	0.004	0.010
Remainder of Colorado <sup>3</sup>	0.262	0.007	0.022

<sup>1</sup> Testing may be performed at any site to determine site-specific emissions factors. These default emission factors may be revised by the Division in the future, pending approved data and testing results.

<sup>2</sup> Units of lb/bbl means pounds of emissions per barrel of produced water throughput

<sup>3</sup> For counties not listed in this table, use the emissions factors listed as a conservative measure or perform testing to determine a site-specific emission factor

#### 3.2. *What type of emissions are included in the produced water tank state default emission factors?*

State default emission factors for produced water tanks include flash, working, and breathing losses.

#### 3.3. *Are there limits as to when produced water tank state default emission factors may be used?*

State default emission factors may be used at all oil and gas industry tank batteries. The Division intends to work with industry to refine emission factors and may develop separate emission factors for E&P and non-E&P sites.

#### 3.4. *When are site-specific emission factors required for tank batteries?*

Site-specific emission factors may be developed and used on a voluntary basis for any tank battery. The Division reserves the authority to require site-specific emission factors at any time. Site-specific emission factors may only be applied at the tank battery for which they were developed, unless otherwise approved by the Division.

#### 3.5. *How is a site-specific emission factor developed?*

A site-specific emission factor for tank batteries is developed by performing a Division approved stack test. A test protocol must be submitted and approved by the Division prior to performing the test. Once a test protocol has been approved by the Division, subsequent testing may be performed following the approved protocol without submittal to the Division.

The Division must be notified of the site specific testing at least 30-days prior to the actual test date.



Emission Factor  
Determination for Produced  
Water Storage Tanks

TCEQ Project 2010-29

Prepared for:  
**Texas Commission on Environmental Quality**  
Austin, Texas

Prepared by:  
**ENVIRON International Corporation**  
Novato, California

Date:  
**August 2010**

ENVIRON Project Number:  
**06-17477T**

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<https://www.tceq.texas.gov/assets/public/implementation/air/am/contracts/reports/ei/5820784005FY1024-20100830-environ-%20EmissionFactorDeterminationForProducedWaterStorageTanks.pdf>



## Executive Summary

The overall purpose of this Study is to evaluate volatile organic compounds (VOC), speciated VOC and hazardous air pollutant (HAP) emissions from produced water and/or saltwater storage tanks servicing oil and gas wells and to develop appropriate VOC and HAP emission factors. The emission factors are to be used for emission inventory development purposes.

The primary source of information for this study was testing conducted by the Texas Commission on Environmental Quality (TCEQ) under Work Order 522-7-84005-FY10-25, *Upstream Oil & Gas Tank Measurements*, TCEQ Project 2010-39. As part of this referenced testing project, pressurized produced water samples were taken at seven different tank batteries located in Johnson, Wise and Tarrant Counties, Texas (all part of the Eastern Barnett Shale region) and analyzed for flash gas volume and composition. The sample collection and analysis conducted as part of TCEQ Project 2010-39 was done according to strict sampling and quality assurance procedures. In addition to TCEQ Project 2010-39 data, a thorough review of publically-available information sources identified a limited amount of data on produced water emissions. This was supplemented by data provided by two natural gas producers and one petroleum engineering services company. Other than TCEQ Project 2010-39 data, however, it could not be confirmed that any of the data had undergone a rigorous quality assurance process and therefore is considered secondary data, used to support conclusions drawn using the primary data but not used directly in deriving the produced water emission factors.

Emissions from produced water storage tanks consist of flash emissions, working losses and breathing losses. Flash emissions are determined using flash gas analysis. Working and breathing losses are estimated using EPA TANKS 4.09d software. Using this approach and the assumptions detailed within this report, it is determined that working and breathing losses associated with primary data source sites are very small compared to flash emissions and can be ignored without affecting the overall emission factor determination.

Table ES-1 presents the recommended emission factors for VOC and four HAPs – benzene, toluene, ethylbenzene and xylenes – derived from the primary data source sites. For comparative purposes, average emissions from Texas and non-Texas secondary sites are also presented in Table ES-1.

**Table ES-1. Recommended Emission Factors and Comparative Data**

Pollutant	Average Produced Water Emission Factor by Data Set (lb/bbl)		
	Recommended Emission Factor	Secondary Data – Texas	Secondary Data – Non-Texas
VOC	0.01	0.012	0.18
Benzene	0.0001	0.0012	0.004
Toluene	0.0003	0.0012	0.009
Ethylbenzene	0.000006	0.0001	0.0007
Xylenes	0.00006	0.0003	0.006

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

GLOBAL WARMING POTENTIALS

[100-Year Time Horizon]

Name	CAS No.	Chemical formula	Global warming potential (100 yr.)
Carbon dioxide	124-38-9	CO <sub>2</sub>	1
Methane	74-82-8	CH <sub>4</sub>	<sup>a</sup> 25
Nitrous oxide	10024-97-2	N <sub>2</sub> O	<sup>a</sup> 298
HFC-23	75-46-7	CHF <sub>3</sub>	<sup>a</sup> 14,800
HFC-32	75-10-5	CH <sub>2</sub> F <sub>2</sub>	<sup>a</sup> 675
HFC-41	593-53-3	CH <sub>3</sub> F	<sup>a</sup> 92
HFC-125	354-33-6	C <sub>2</sub> HF <sub>5</sub>	<sup>a</sup> 3,500
HFC-134	359-35-3	C <sub>2</sub> H <sub>2</sub> F <sub>4</sub>	<sup>a</sup> 1,100
HFC-134a	811-97-2	CH <sub>2</sub> FCF <sub>3</sub>	<sup>a</sup> 1,430
HFC-143	430-66-0	C <sub>2</sub> H <sub>3</sub> F <sub>3</sub>	<sup>a</sup> 353
HFC-143a	420-46-2	C <sub>2</sub> H <sub>3</sub> F <sub>3</sub>	<sup>a</sup> 4,470
HFC-152	624-72-6	CH <sub>2</sub> FCH <sub>2</sub> F	53
HFC-152a	75-37-6	CH <sub>3</sub> CHF <sub>2</sub>	<sup>a</sup> 124
HFC-161	353-36-6	CH <sub>3</sub> CH <sub>2</sub> F	12
HFC-227ea	431-89-0	C <sub>3</sub> HF <sub>7</sub>	<sup>a</sup> 3,220
HFC-236cb	677-56-5	CH <sub>2</sub> FCF <sub>2</sub> CF <sub>3</sub>	1,340
HFC-236ea	431-63-0	CHF <sub>2</sub> CHFCF <sub>3</sub>	1,370
HFC-236fa	690-39-1	C <sub>3</sub> H <sub>2</sub> F <sub>6</sub>	<sup>a</sup> 9,810
HFC-245ca	679-86-7	C <sub>3</sub> H <sub>3</sub> F <sub>5</sub>	<sup>a</sup> 693
HFC-245fa	460-73-1	CHF <sub>2</sub> CH <sub>2</sub> CF <sub>3</sub>	1,030
HFC-365mfc	406-58-6	CH <sub>3</sub> CF <sub>2</sub> CH <sub>2</sub> CF <sub>3</sub>	794
HFC-43-10mee	138495-42-8	CF <sub>3</sub> CFHCFHCF <sub>2</sub> CF <sub>3</sub>	<sup>a</sup> 1,640
Sulfur hexafluoride	2551-62-4	SF <sub>6</sub>	<sup>a</sup> 22,800
Trifluoromethyl sulphur pentafluoride	373-80-8	SF <sub>5</sub> CF <sub>3</sub>	17,700
Nitrogen trifluoride	7783-54-2	NF <sub>3</sub>	17,200
PFC-14 (Perfluoromethane)	75-73-0	CF <sub>4</sub>	<sup>a</sup> 7,390
PFC-116 (Perfluoroethane)	76-16-4	C <sub>2</sub> F <sub>6</sub>	<sup>a</sup> 12,200
PFC-218 (Perfluoropropane)	76-19-7	C <sub>3</sub> F <sub>8</sub>	<sup>a</sup> 8,830
Perfluorocyclopropane	931-91-9	C-C <sub>3</sub> F <sub>6</sub>	17,340
PFC-3-1-10 (Perfluorobutane)	355-25-9	C <sub>4</sub> F <sub>10</sub>	<sup>a</sup> 8,860
PFC-318 (Perfluorocyclobutane)	115-25-3	C-C <sub>4</sub> F <sub>8</sub>	<sup>a</sup> 10,300
PFC-4-1-12 (Perfluoropentane)	678-26-2	C <sub>5</sub> F <sub>12</sub>	<sup>a</sup> 9,160
PFC-5-1-14 (Perfluorohexane, FC-72)	355-42-0	C <sub>6</sub> F <sub>14</sub>	<sup>a</sup> 9,300
PFC-9-1-18	306-94-5	C <sub>10</sub> F <sub>18</sub>	7,500
HCFE-235da2 (Isoflurane)	26675-46-7	CHF <sub>2</sub> OCHClCF <sub>3</sub>	350
HFE-43-10pccc (H-Galden 1040x, HG-11)	E1730133	CHF <sub>2</sub> OCF <sub>2</sub> OC <sub>2</sub> F <sub>4</sub> OCHF <sub>2</sub>	1,870

HFE-125	3822-68-2	CHF <sub>2</sub> OCF <sub>3</sub>	14,900
HFE-134 (HG-00)	1691-17-4	CHF <sub>2</sub> OCHF <sub>2</sub>	6,320
HFE-143a	421-14-7	CH <sub>3</sub> OCF <sub>3</sub>	756
HFE-227ea	2356-62-9	CF <sub>3</sub> CHFOCF <sub>3</sub>	1,540
HFE-236ca12 (HG-10)	78522-47-1	CHF <sub>2</sub> OCF <sub>2</sub> OCHF <sub>2</sub>	2,800
HFE-236ea2 (Desflurane)	57041-67-5	CHF <sub>2</sub> OCHF <sub>2</sub> CF <sub>3</sub>	989
HFE-236fa	20193-67-3	CF <sub>3</sub> CH <sub>2</sub> OCF <sub>3</sub>	487
HFE-245cb2	22410-44-2	CH <sub>3</sub> OCF <sub>2</sub> CF <sub>3</sub>	708
HFE-245fa1	84011-15-4	CHF <sub>2</sub> CH <sub>2</sub> OCF <sub>3</sub>	286
HFE-245fa2	1885-48-9	CHF <sub>2</sub> OCH <sub>2</sub> CF <sub>3</sub>	659
HFE-254cb2	425-88-7	CH <sub>3</sub> OCF <sub>2</sub> CHF <sub>2</sub>	359
HFE-263fb2	460-43-5	CF <sub>3</sub> CH <sub>2</sub> OCH <sub>3</sub>	11
HFE-329mcc2	134769-21-4	CF <sub>3</sub> CF <sub>2</sub> OCF <sub>2</sub> CHF <sub>2</sub>	919
HFE-338mcf2	156053-88-2	CF <sub>3</sub> CF <sub>2</sub> OCH <sub>2</sub> CF <sub>3</sub>	552
HFE-338pcc13 (HG-01)	188690-78-0	CHF <sub>2</sub> OCF <sub>2</sub> CF <sub>2</sub> OCHF <sub>2</sub>	1,500
HFE-347mcc3 (HFE-7000)	375-03-1	CH <sub>3</sub> OCF <sub>2</sub> CF <sub>2</sub> CF <sub>3</sub>	575
HFE-347mcf2	171182-95-9	CF <sub>3</sub> CF <sub>2</sub> OCH <sub>2</sub> CHF <sub>2</sub>	374
HFE-347pcf2	406-78-0	CHF <sub>2</sub> CF <sub>2</sub> OCH <sub>2</sub> CF <sub>3</sub>	580
HFE-356mec3	382-34-3	CH <sub>3</sub> OCF <sub>2</sub> CHF <sub>2</sub> CF <sub>3</sub>	101
HFE-356pcc3	160620-20-2	CH <sub>3</sub> OCF <sub>2</sub> CF <sub>2</sub> CHF <sub>2</sub>	110
HFE-356pcf2	50807-77-7	CHF <sub>2</sub> CH <sub>2</sub> OCF <sub>2</sub> CHF <sub>2</sub>	265
HFE-356pcf3	35042-99-0	CHF <sub>2</sub> OCH <sub>2</sub> CF <sub>2</sub> CHF <sub>2</sub>	502
HFE-365mcf3	378-16-5	CF <sub>3</sub> CF <sub>2</sub> CH <sub>2</sub> OCH <sub>3</sub>	11
HFE-374pc2	512-51-6	CH <sub>3</sub> CH <sub>2</sub> OCF <sub>2</sub> CHF <sub>2</sub>	557
HFE-449s1 (HFE-7100)	163702-07-6	C <sub>4</sub> F <sub>9</sub> OCH <sub>3</sub>	297
Chemical blend	163702-08-7	(CF <sub>3</sub> ) <sub>2</sub> CF <sub>2</sub> OCF <sub>2</sub> CH <sub>3</sub>	
HFE-569sf2 (HFE-7200)	163702-05-4	C <sub>4</sub> F <sub>9</sub> OC <sub>2</sub> H <sub>5</sub>	59
Chemical blend	163702-06-5	(CF <sub>3</sub> ) <sub>2</sub> CF <sub>2</sub> OCF <sub>2</sub> OC <sub>2</sub> H <sub>5</sub>	
Sevoflurane (HFE-347mmz1)	28523-86-6	CH <sub>2</sub> FOCH(CF <sub>3</sub> ) <sub>2</sub>	345
HFE-356mm1	13171-18-1	(CF <sub>3</sub> ) <sub>2</sub> CHOCH <sub>3</sub>	27
HFE-338mmz1	26103-08-2	CHF <sub>2</sub> OCH(CF <sub>3</sub> ) <sub>2</sub>	380
(Octafluorotetramethyl-ene) hydroxymethyl group	NA	X-(CF <sub>2</sub> ) <sub>4</sub> CH(OH)-X	73
HFE-347mmy1	22052-84-2	CH <sub>3</sub> OCF(CF <sub>3</sub> ) <sub>2</sub>	343
Bis(trifluoromethyl)-methanol	920-66-1	(CF <sub>3</sub> ) <sub>2</sub> CHOH	195
2,2,3,3,3-pentafluoropropanol	422-05-9	CF <sub>3</sub> CF <sub>2</sub> CH <sub>2</sub> OH	42
PFPME (HT-70)	NA	CF <sub>3</sub> OCF(CF <sub>3</sub> )CF <sub>2</sub> OCF <sub>2</sub> OCF <sub>3</sub>	10,300

<sup>a</sup>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 CO<sub>2</sub> Emission Factors and High Heat Values for Various Types of Fuel**

**DEFAULT CO<sub>2</sub> EMISSION FACTORS AND HIGH HEAT VALUES FOR VARIOUS TYPES OF FUEL**

<b>Fuel type</b>	<b>Default high heat value</b>	<b>Default CO<sub>2</sub> emission factor</b>
Coal and coke	mmBtu/short ton	kg CO <sub>2</sub> /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 CO <sub>2</sub> /mmBtu
(Weighted U.S. Average)	$1.026 \times 10^{-3}$	53.06
Petroleum products	mmBtu/gallon	kg CO <sub>2</sub> /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) <sup>1</sup>	0.092	61.71
Propane <sup>1</sup>	0.091	62.87
Propylene <sup>2</sup>	0.091	67.77
Ethane <sup>1</sup>	0.068	59.60
Ethanol	0.084	68.44
Ethylene <sup>2</sup>	0.058	65.96
Isobutane <sup>1</sup>	0.099	64.94
Isobutylene <sup>1</sup>	0.103	68.86
Butane <sup>1</sup>	0.103	64.77
Butylene <sup>1</sup>	0.105	68.72
Naphtha (<401 deg F)	0.125	68.02
Natural Gasoline	0.110	66.88
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 CO <sub>2</sub> /mmBtu
Municipal Solid Waste	9.95 <sup>3</sup>	90.7
Tires	28.00	85.97
Plastics	38.00	75.00
Petroleum Coke	30.00	102.41
Other fuels—gaseous	mmBtu/scf	kg CO <sub>2</sub> /mmBtu
Blast Furnace Gas	0.092 × 10 <sup>-3</sup>	274.32
Coke Oven Gas	0.599 × 10 <sup>-3</sup>	46.85
Propane Gas	2.516 × 10 <sup>-3</sup>	61.46
Fuel Gas <sup>4</sup>	1.388 × 10 <sup>-3</sup>	59.00
Biomass fuels—solid	mmBtu/short ton	kg CO <sub>2</sub> /mmBtu
Wood and Wood Residuals (dry basis) <sup>5</sup>	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 CO <sub>2</sub> /mmBtu
Landfill Gas	0.485 × 10 <sup>-3</sup>	52.07
Other Biomass Gases	0.655 × 10 <sup>-3</sup>	52.07
Biomass Fuels—Liquid	mmBtu/gallon	kg CO <sub>2</sub> /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

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

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

<sup>3</sup>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.

<sup>4</sup>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 CO<sub>2</sub> 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.

<sup>5</sup>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.

[78 FR 71950, Nov. 29, 2013]

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**Table C-2 to Subpart C of Part 98—Default CH<sub>4</sub> and N<sub>2</sub>O Emission Factors for Various Types of Fuel**

Fuel type	Default CH <sub>4</sub> emission factor (kg CH <sub>4</sub> /mmBtu)	Default N <sub>2</sub> O emission factor (kg N <sub>2</sub> O/mmBtu)
Coal and Coke (All fuel types in Table C-1)	$1.1 \times 10^{-02}$	$1.6 \times 10^{-03}$
Natural Gas	$1.0 \times 10^{-03}$	$1.0 \times 10^{-04}$
Petroleum (All fuel types in Table C-1)	$3.0 \times 10^{-03}$	$6.0 \times 10^{-04}$
Fuel Gas	$3.0 \times 10^{-03}$	$6.0 \times 10^{-04}$
Municipal Solid Waste	$3.2 \times 10^{-02}$	$4.2 \times 10^{-03}$
Tires	$3.2 \times 10^{-02}$	$4.2 \times 10^{-03}$
Blast Furnace Gas	$2.2 \times 10^{-05}$	$1.0 \times 10^{-04}$
Coke Oven Gas	$4.8 \times 10^{-04}$	$1.0 \times 10^{-04}$
Biomass Fuels—Solid (All fuel types in Table C-1, except wood and wood residuals)	$3.2 \times 10^{-02}$	$4.2 \times 10^{-03}$
Wood and wood residuals	$7.2 \times 10^{-03}$	$3.6 \times 10^{-03}$
Biomass Fuels—Gaseous (All fuel types in Table C-1)	$3.2 \times 10^{-03}$	$6.3 \times 10^{-04}$
Biomass Fuels—Liquid (All fuel types in Table C-1)	$1.1 \times 10^{-03}$	$1.1 \times 10^{-04}$

Note: Those employing this table are assumed to fall under the IPCC definitions of the “Energy Industry” or “Manufacturing Industries and Construction”. In all fuels except for coal the values for these two categories are identical. For coal combustion, those who fall within the IPCC “Energy Industry” category may employ a value of 1g of CH<sub>4</sub>/mmBtu.

**Table W-1A of Subpart W of Part 98—Default Whole Gas Emission Factors for Onshore Petroleum and Natural Gas Production**

Onshore petroleum and natural gas production	Emission factor (scf/hour/component)
<b>Eastern U.S.</b>	
<b>Population Emission Factors—All Components, Gas Service<sup>1</sup></b>	
Valve	0.027
Connector	0.003
Open-ended Line	0.061
Pressure Relief Valve	0.040
Low Continuous Bleed Pneumatic Device Vents <sup>2</sup>	1.39
High Continuous Bleed Pneumatic Device Vents <sup>2</sup>	37.3
Intermittent Bleed Pneumatic Device Vents <sup>2</sup>	13.5
Pneumatic Pumps <sup>3</sup>	13.3
<b>Population Emission Factors—All Components, Light Crude Service<sup>4</sup></b>	
Valve	0.05
Flange	0.003
Connector	0.007
Open-ended Line	0.05
Pump	0.01
Other <sup>5</sup>	0.30
<b>Population Emission Factors—All Components, Heavy Crude Service<sup>6</sup></b>	
Valve	0.0005
Flange	0.0009
Connector (other)	0.0003
Open-ended Line	0.006
Other <sup>5</sup>	0.003
<b>Western U.S.</b>	
<b>Population Emission Factors—All Components, Gas Service<sup>1</sup></b>	
Valve	0.121
Connector	0.017
Open-ended Line	0.031
Pressure Relief Valve	0.193
Low Continuous Bleed Pneumatic Device Vents <sup>2</sup>	1.39
High Continuous Bleed Pneumatic Device Vents <sup>2</sup>	37.3
Intermittent Bleed Pneumatic Device Vents <sup>2</sup>	13.5
Pneumatic Pumps <sup>3</sup>	13.3
<b>Population Emission Factors—All Components, Light Crude Service<sup>4</sup></b>	
Valve	0.05
Flange	0.003

Connector (other)	0.007
Open-ended Line	0.05
Pump	0.01
Other <sup>5</sup>	0.30
<b>Population Emission Factors—All Components, Heavy Crude Service<sup>6</sup></b>	
Valve	0.0005
Flange	0.0009
Connector (other)	0.0003
Open-ended Line	0.006
Other <sup>5</sup>	0.003

<sup>1</sup>For multi-phase flow that includes gas, use the gas service emissions factors.

<sup>2</sup>Emission Factor is in units of “scf/hour/device.”

<sup>3</sup>Emission Factor is in units of “scf/hour/pump.”

<sup>4</sup>Hydrocarbon liquids greater than or equal to 20°API are considered “light crude.”

<sup>5</sup>“Others” category includes instruments, loading arms, pressure relief valves, stuffing boxes, compressor seals, dump lever arms, and vents.

<sup>6</sup>Hydrocarbon liquids less than 20°API are considered “heavy crude.”



# Section 8

## Map(s)

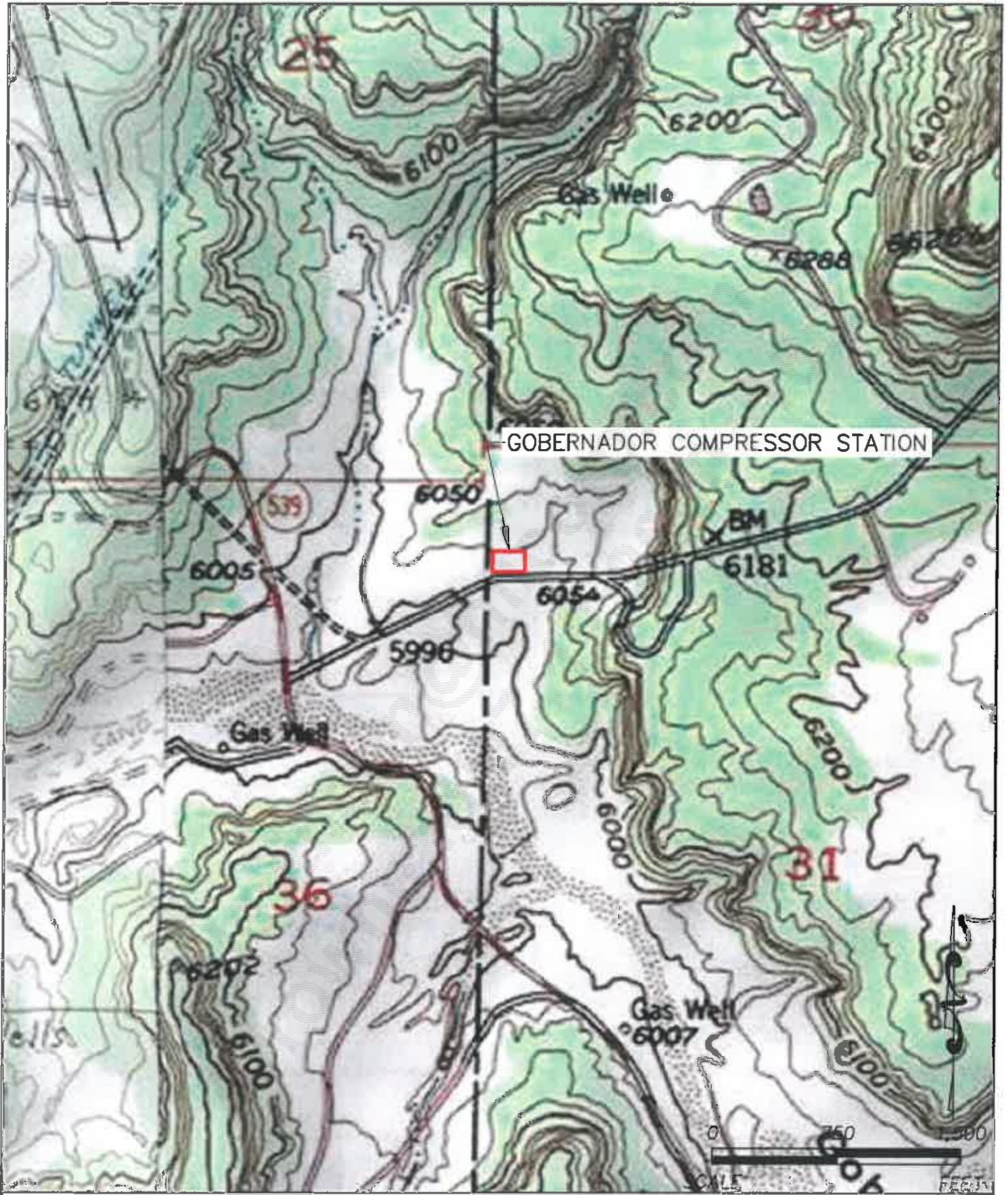
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**A map** such as a 7.5 minute topographic quadrangle showing the exact location of the source. The map shall also include the following:

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

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A topographic map of the area around the facility is provided in this section. Please see the following page.



TOPOGRAPHICAL MAP  
 ENTERPRISE PRODUCTS OPERATING, LLC  
 GOBERNADOR COMPRESSOR STATION  
 SEC 31-T30N-R7W, RIO ARRIBA COUNTY, NM

		Date	File Path
Designed By	NA		TOPO MAP*.DWG
Drawn By	CC	10/4/2016	Drawing No.
Checked By	VC	10/4/2016	1
Approved By	VC	10/4/2016	Sheet 1 of 3

# 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”)

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**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.

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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, since this is a Title V application.

# Section 10

## Written Description of the Routine Operations of the Facility

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

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The Gobernador VV Compressor Station is a production field facility that receives natural gas collected in production gathering fields via pipeline. The facility compresses the gas using three compressors driven by spark ignition natural gas-fired reciprocating engines. This compressed gas is injected back into the pipeline. The facility is also equipped with miscellaneous storage tanks. Produced water is trucked off-site.

The facility will operate up to 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):**

Gobernador VV Compressor Station – natural gas compression facility

**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.A

## PSD Applicability Determination for All Sources

(Submitting under 20.2.72, 20.2.74 NMAC)

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

A. This facility is:

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

B. This facility [is or is not] one of the listed 20.2.74.501 Table I – PSD Source Categories. The “project” emissions for this modification are [significant or not significant]. [Discuss why.] The “project” emissions listed below [do or do not] only result from changes described in this permit application, thus no emissions from other [revisions or modifications, past or future] to this facility. Also, specifically discuss whether this project results in “de-bottlenecking”, or other associated emissions resulting in higher emissions. The project emissions (before netting) for this project are as follows [see Table 2 in 20.2.74.502 NMAC for a complete list of significance levels]:

- a. NO<sub>x</sub>: XX.X TPY
- b. CO: XX.X TPY
- c. VOC: XX.X TPY
- d. SO<sub>x</sub>: XX.X TPY
- e. PM: XX.X TPY
- f. PM<sub>10</sub>: XX.X TPY
- g. PM<sub>2.5</sub>: XX.X TPY
- h. Fluorides: XX.X TPY
- i. Lead: XX.X TPY
- j. Sulfur compounds (listed in Table 2): XX.X TPY
- k. GHG: XX.X TPY

C. Netting [is required, and analysis is attached to this document.] OR [is not required (project is not significant)] OR [Applicant is submitting a PSD Major Modification and chooses not to net.]

D. BACT is [not required for this modification, as this application is a minor modification.] OR [required, as this application is a major modification. List pollutants subject to BACT review and provide a full top down BACT determination.]

E. If this is an existing PSD major source, or any facility with emissions greater than 250 TPY (or 100 TPY for 20.2.74.501 Table I – PSD Source Categories), determine whether any permit modifications are related, or could be considered a single project with this action, and provide an explanation for your determination whether a PSD modification is triggered.

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Not applicable, since this is a Title V application.

## Section 12.B

### Special Requirements for a PSD Application

(Submitting under 20.2.74 NMAC)

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**Prior to Submitting a PSD application, the permittee shall:**

- Submit the BACT analysis for review prior to submittal of the application. No application will be ruled complete until the final determination regarding BACT is made, as this determination can ultimately affect information to be provided in the application. A pre-application meeting is recommended to discuss the requirements of the BACT analysis.
- Submit a modeling protocol prior to submitting the permit application. **[Except for GHG]**
- Submit the monitoring exemption analysis protocol prior to submitting the application. **[Except for GHG]**

**For PSD applications, the permittee shall also include the following:**

- Documentation containing an analysis on the impact on visibility. **[Except for GHG]**
  - Documentation containing an analysis on the impact on soil. **[Except for GHG]**
  - Documentation containing an analysis on the impact on vegetation, including state and federal threatened and endangered species. **[Except for GHG]**
  - Documentation containing an analysis on the impact on water consumption and quality. **[Except for GHG]**
  - Documentation that the federal land manager of a Class I area within 100 km of the site has been notified and provided a copy of the application, including the BACT and modeling results. The name of any Class I Federal area located within one hundred (100) kilometers of the facility.
- 

Not applicable, since this is a Title V application.

# Section 13

## Determination of State & Federal Air Quality Regulations

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**This section lists each state and federal air quality regulation that may apply to your facility and/or equipment that are stationary sources of regulated air pollutants.** Not all state and federal air quality regulations are included in this list. Go to the Code of Federal Regulations (CFR) or to the Air Quality Bureau's regulation page to see the full set of air quality regulations.

### Required Information for Specific Equipment:

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

### Required Information for Regulations that Apply to the Entire Facility:

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

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

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

### Regulatory Citations for Emission Standards:

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

### Federally Enforceable Conditions:

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

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

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

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**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.

**Table for STATE REGULATIONS:**

<u>STATE REGULATIONS</u> CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
20.2.1 NMAC	General Provisions	Yes	Facility	This regulation is applicable because it establishes procedures for protecting confidential information, procedures for seeking a variance, NMAQB's authority to require sampling equipment, severability, and the effective date for conformance with the NMACs, and prohibits the violation of other requirements in attempting to comply with the NMACs.  Although this regulation is applicable, it does not impose any specific requirements.
20.2.3 NMAC	Ambient Air Quality Standards NMAAQS	Yes	Facility	This is a State Implementation Plan (SIP) approved regulation that limits the maximum allowable concentrations of Total Suspended Particulates, Sulfur Compounds, Carbon Monoxide and Nitrogen Dioxide.
20.2.7 NMAC	Excess Emissions	Yes	Facility	This regulation is applicable because it prohibits excess emissions unless proper notification procedures are followed.
20.2.8 NMAC	Emissions Leaving New Mexico	Yes	Facility	This regulation is applicable because it establishes prohibitions on the release of pollutants that cross New Mexico State boundaries.
20.2.14 NMAC	Particulate Emissions from Coal Burning Equipment	No	N/A	This regulation is not applicable because the facility does not burn coal (see 20.2.14.5 NMAC).
20.2.18 NMAC	Oil Burning Equipment - Particulate Matter	No	N/A	This regulation is not applicable because the facility does not burn oil (see 20.2.18.5 NMAC).
20.2.31 NMAC	Coal Burning Equipment – Sulfur Dioxide	No	N/A	This regulation is not applicable because the facility does not burn coal (see 20.2.31.6 NMAC).
20.2.32 NMAC	Coal Burning Equipment – Nitrogen Dioxide,	No	N/A	This regulation is not applicable because the facility does not burn coal (see 20.2.32.6 NMAC).
20.2.33 NMAC	Gas Burning Equipment - Nitrogen Dioxide	No	N/A	This regulation is not applicable because the facility is not equipped with external gas burning equipment which have heat input rates exceeding the trigger level (one million MMBtu/year) established by the regulation (see 20.2.33.108 NMAC).
20.2.34 NMAC	Oil Burning Equipment: NO <sub>2</sub>	No	N/A	This regulation is not applicable because the facility does not burn oil (see 20.2.34.6 NMAC).
20.2.35 NMAC	Natural Gas Processing Plant – Sulfur	No	N/A	This regulation is not applicable because the facility is not a natural gas processing plant (see 20.2.35.6 NMAC).
20.2.38 NMAC	Hydrocarbon Storage Facility	No	N/A	This regulation is not applicable because the facility does not store hydrocarbons containing hydrogen sulfide, nor is there a tank battery storing hydrocarbon liquids with a capacity greater than or equal to 65,000 gallons (see 20.2.38.112 NMAC).
20.2.39 NMAC	Sulfur Recovery Plant - Sulfur	No	N/A	This regulation is not applicable because the facility is not equipped with a sulfur recovery plant (see 20.2.39.6 NMAC).

<u>STATE REGULATIONS CITATION</u>	<b>Title</b>	<b>Applies? Enter Yes or No</b>	<b>Unit(s) or Facility</b>	<b>JUSTIFICATION:</b>
20.2.61.109 NMAC	Smoke & Visible Emissions	Yes	1-3	This regulation is applicable because the facility is equipped with stationary combustion sources. Emissions from these combustion sources are limited to less than 20% opacity (see 20.2.61.109 NMAC). The regulation is not applicable to Title V insignificant heaters (see 20.2.61.111.D NMAC).
20.2.70 NMAC	Operating Permits	Yes	Facility	This regulation is applicable because the facility is a major source of NO <sub>2</sub> , CO and HAP emissions (see 20.2.70.200 NMAC).
20.2.71 NMAC	Operating Permit Fees	Yes	Facility	This regulation is applicable because the facility is subject to 20.2.70 NMAC (see 20.2.71.6 NMAC).
20.2.72 NMAC	Construction Permits	Yes	Facility	This regulation is applicable because the facility has potential emission rates (PER) greater than 10 pph or 25 tpy for pollutants subject to a state or federal ambient air quality standards (does not include VOCs or HAPs).
20.2.73 NMAC	NOI & Emissions Inventory Requirements	Yes	Facility	The Notice of Intent portion of this regulation is not applicable because the facility is subject to 20.2.72 NMAC. The emissions inventory portion of this regulation is applicable since the facility is a Title V major source (see 20.2.73.300.B(1) & (2)).
20.2.74 NMAC	Permits – Prevention of Significant Deterioration (PSD)	No	N/A	This regulation is not applicable because the facility is not a PSD major source.
20.2.75 NMAC	Construction Permit Fees	Yes	Facility	This regulation is applicable because the facility is subject to 20.2.72 NMAC and it establishes the fee schedule associated with the filing of construction permits (see 20.2.75.6 NMAC).
20.2.77 NMAC	New Source Performance	No	N/A	This regulation is not applicable because it adopts by reference the federal NSPS codified in 40 CFR 60 (see 20.2.77.6 NMAC). The facility is not subject to 40 CFR 60.
20.2.78 NMAC	Emission Standards for HAPS	No	N/A	This regulation is not applicable because it incorporates by reference the NESHAPs codified under 40 CFR 61 (see 20.2.78.6 NMAC). The facility is not subject to 40 CFR 61.
20.2.79 NMAC	Permits – Nonattainment Areas	No	N/A	This regulation is not applicable because the facility is neither located in nor has a significant impact on a nonattainment area (see 20.2.79.6 NMAC).
20.2.80 NMAC	Stack Heights	No	N/A	This regulation is not applicable because it establishes guidelines for the selection of an appropriate stack height for the purpose of atmospheric dispersion modeling (see 20.2.80.6 NMAC); however, it only imposes those requirements when modeling is required as a part of the application. This application does not require modeling.
20.2.82 NMAC	MACT Standards for Source Categories of HAPS	Yes	1-3	This regulation is applicable because it adopts by reference the federal MACT Standards for source categories codified in 40 CFR 63 (see 20.2.82.6 NMAC). The facility is subject to 40 CFR 63, Subparts A and ZZZZ.

## 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.

### FEDERAL REGULATIONS APPLICABILITY CHECKLIST

<u>FEDERAL REGULATIONS CITATION</u>	<b>Title</b>	<b>Applies? Enter Yes or No</b>	<b>Unit(s) or Facility</b>	<b>JUSTIFICATION:</b>
40 CFR 50	NAAQS	Yes	Facility	This regulation is applicable because it applies to all sources in the state of New Mexico.
40 CFR 52	Approval and Promulgation of Implementation Plans	No	N/A	40 CFR 52.21 <i>Prevention of Significant Deterioration of Air Quality</i> is not applicable because the facility is not a major Prevention of Significant Deterioration source. The remainder of 40 CFR 52 is not applicable because it addresses approval and promulgation of implementation plans.
NSPS 40 CFR 60, Subpart A	General Provisions	No	N/A	This regulation is not applicable because no other 40 CFR Part 60 subparts apply.
NSPS 40 CFR 60, Subpart K	Standards of Performance for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978	No	N/A	This regulation is not applicable because the petroleum liquids storage tanks at the facility have capacities less than the minimum applicability threshold capacity of 40,000 gallons (see §60.110(a)).
NSPS 40 CFR 60, Subpart Ka	Standards of Performance for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984	No	N/A	This regulation is not applicable because the storage tanks at the facility have capacities less than the minimum applicability threshold capacity of 40,000 gallons (see §60.110a(a)).
NSPS 40 CFR 60, Subpart Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction, or Modification Commenced After July 23, 1984	No	N/A	This regulation is not applicable because all storage tanks at the facility have capacities less than the minimum applicability threshold capacity of 75 cubic meters (19,812 gallons) or they have a capacity between 75 and 151 cubic meters (40,000 gallons) and store a liquid with a maximum true vapor pressure less than 15.0 kPa (2.2 psi) (see §60.110b(a) & §60.110b(b)).

<u>FEDERAL REGU- LATIONS CITATION</u>	<b>Title</b>	<b>Applies? Enter Yes or No</b>	<b>Unit(s) or Facility</b>	<b>JUSTIFICATION:</b>
NSPS 40 CFR 60, Subpart KKK	Standards of Performance for Equipment Leaks of VOC from Onshore Gas Plants	No	N/A	This regulation is not applicable because the facility is not an onshore natural gas processing plant as defined by the subpart (see §60.630(a)(1)). Natural gas processing plant (gas plant) means any processing site engaged in the extraction of natural gas liquids from field gas, fractionation of mixed natural gas liquids to natural gas products, or both (see §60.631).
NSPS 40 CFR 60, Subpart LLL	Standards of Performance for Onshore Natural Gas Processing: SO <sub>2</sub> Emissions	No	N/A	This regulation is not applicable because the facility is not a natural gas processing plant as defined by the subpart. It is not equipped with a sweetening unit (see §60.640(a)).
NSPS 40 CFR 60, Subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	No	N/A	This regulation is not applicable because the facility is not equipped with stationary compression ignition (CI) internal combustion engines (ICE) that commenced construction after July 11, 2005 and were manufactured after April 1, 2006 (see §60.4200(a)(2)(i)).  For the purpose of this subpart, construction commences on the date the engine is ordered by the owner or operator (see §60.4200(a)).
NSPS 40 CFR 60, Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	No	N/A	This regulation is not applicable because the facility is not equipped with spark ignition (SI) internal combustion engines (ICE) constructed, modified, or reconstructed after June 12, 2006.  Units 1-3 were constructed prior to the applicability date and have not been modified or reconstructed.  See the definitions of construction, modification, and reconstruction referenced in Subpart OOOO below.
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	N/A	This regulation is not applicable because the facility is not equipped with "affected" sources that commenced construction, modification or reconstruction after August 23, 2011 and on or before September 18, 2015: gas wells, centrifugal or reciprocating compressors, pneumatic controllers, and storage vessels (see §60.5365).  Note that the facility is not a natural gas processing plant as defined by the subpart (see §60.5430).  Commenced construction means a continuous program of fabrication, erection or installation (see §60.2).  Modification means any physical change in or change in the method of operation of an existing facility which increases emissions or results in new emissions (see §60.2). The following, by themselves, are not modifications: routine maintenance, repair or replacement, production increase without capital expenditure, increase in hours of operation, addition of emission controls, or the relocation or change in ownership of an existing facility (see §60.14).  Reconstruction means the replacement of components of an existing facility such that the fixed capital cost of the new components exceeds 50 % of the fixed capital cost required to construct a comparable entirely new facility. Fixed capital cost means the capital needed to provide all the depreciable components (see §60.15).

<u>FEDERAL REGU- LATIONS CITATION</u>	<b>Title</b>	<b>Applies? Enter Yes or No</b>	<b>Unit(s) or Facility</b>	<b>JUSTIFICATION:</b>
NSPS 40 CFR 60, Subpart OOOOa	Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015	No	N/A	<p>This regulation is not applicable because the facility is not equipped with “affected” sources that commenced construction, modification or reconstruction after September 18, 2015: gas wells, centrifugal or reciprocating compressors, pneumatic controllers, storage vessels, sweetening units, pneumatic pumps, and equipment leaks (see §60.5365a).</p> <p>In general, this regulation may apply if existing affected equipment is replaced or new affected equipment is installed.</p> <p>Note that the facility is not a natural gas processing plant as defined by the subpart (see §60.5430a).</p> <p>See the definitions of construction, modification, and reconstruction referenced in Subpart OOOO above.</p>
NESHAP 40 CFR 61, Subpart A	General Provisions	No	N/A	This regulation is not applicable because no other 40 CFR Part 61 subparts apply (see §61.01(c)).
NESHAP 40 CFR 61, Subpart V	National Emission Standards for Equipment Leaks (Fugitive Emission Sources)	No	N/A	<p>This regulation is not applicable because none of the listed equipment at the facility is in VHAP service.</p> <p>The provisions of this subpart apply to each of the following sources that are intended to operate in volatile hazardous air pollutant (VHAP) service: pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, and control devices or systems required by this subpart (see §61.240(a)). VHAP service means a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 10 percent by weight of VHAP. VHAP means a substance regulated under this subpart for which a standard for equipment leaks of the substance has been promulgated (see §61.241).</p>
MACT 40 CFR 63, Subpart A	General Provisions	Yes	1-3	This regulation is applicable because 40 CFR 63, Subpart ZZZZ is applicable (see §63.1(b)). Although this regulation is applicable, it does not impose any specific requirements (see §63.6590(b)(3)(ii)).
MACT 40 CFR 63, Subpart HH	National Emission Standards for Hazardous Air Pollutants For Oil and Natural Gas Production Facilities	No	N/A	<p>This regulation is not applicable because the facility is not equipped with affected equipment.</p> <p>The facility is an area HAP source. Note that since it is a production field facility (located prior to the point of custody transfer), only HAP emissions from glycol dehydration units and storage vessels are aggregated for a major source determination. Storage vessels include crude oil tanks, condensate tanks, intermediate hydrocarbon liquid tanks, and produced water tanks (see §63.761).</p> <p>At area HAP facilities, the regulation is only applicable to dehydrators (see §63.760(b)(2)).</p>
MACT 40 CFR 63, Subpart HHH	National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities	No	N/A	<p>This regulation is not applicable because the facility is not a natural gas transmission and storage facility as defined by the subpart.</p> <p>A compressor station that transports natural gas prior to the point of custody transfer or to a natural gas processing plant (if present) are not considered a part of the natural gas transmission and storage source category (see §63.1270(a)).</p>

<u>FEDERAL REGU- LATIONS CITATION</u>	<b>Title</b>	<b>Applies? Enter Yes or No</b>	<b>Unit(s) or Facility</b>	<b>JUSTIFICATION:</b>
MACT 40 CFR 63, Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE MACT)	Yes	1-3	<p>This regulation is applicable because the facility is equipped with affected sources.</p> <p>The station is a major HAP source as defined by the subpart. For production field facilities, only HAP emissions from engines, turbines, dehydrators, and storage vessels with the potential for flash emissions are aggregated for the HAP major source determination (see §63.6675).</p> <p>Units 1-3 are 4-stroke, lean burn (4SLB) spark ignition (SI) RICE with a site rating of more than 500 hp, and were constructed prior to December 19, 2002. Under §63.6590(b)(3)(ii), existing 4SLB stationary RICE with site ratings of more than 500 hp located at major HAP sources do not have to meet the requirements of Subparts A &amp; ZZZZ, including initial notification requirements.</p>
MACT 40 CFR 63, Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for Major Industrial, Commercial, and Institutional Boilers & Process Heaters	No	N/A	<p>This regulation is not applicable both because the facility is an area HAP source as defined by the subpart (see §63.7480) and is not equipped with boilers and process heaters.</p> <p>Since the facility is a natural gas production facility, only HAP emissions from dehydrators and storage vessels with the potential for flash emissions are aggregated for a major source determination (see §63.7575).</p>
MACT 40 CFR 63, Subpart JJJJJ	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers at Area Sources	No	N/A	<p>This regulation is not applicable because the facility is not equipped with industrial, commercial, or institutional boilers.</p>
40 CFR 64	Compliance Assurance Monitoring	No	N/A	<p>This regulation is not applicable because no equipment at the facility requires a control device to achieve compliance with emission limits or standards where pre control emissions equal or exceed the major source threshold (100 tons per year). (see §64.2(a)).</p>
40 CFR 68	Chemical Accident Prevention	No	N/A	<p>This regulation is not applicable because the facility does not store any of the identified toxic and flammable substances in quantities exceeding the applicability thresholds (see §68.10(a), §68.115(a), and §68.130 Tables 1-4).</p>
40 CFR 70	State Operating Permit Programs	No	N/A	<p>This regulation is not applicable, as the requirements associated with Title V are delegated to the State of New Mexico and implemented under 20 NMAC 2.70.</p>
40 CFR 82	Protection of Stratospheric Ozone	No	N/A	<p>This regulation is not applicable because the facility does not produce, transform, destroy, import, or export ozone-depleting substances (see §82.1(b).); does not service motor vehicle air conditioning units (see §82.30(b)); and does not sell, distribute, or offer for sale or distribution any product that contains ozone-depleting substances (see §82.64).</p>

# Section 14

## Operational Plan to Mitigate Emissions

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

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- Title V Sources** (20.2.70 NMAC): By checking this box and certifying this application the permittee certifies that it has developed an **Operational Plan to Mitigate Emissions During Startups, Shutdowns, and Emergencies** defining the measures to be taken to mitigate source emissions during startups, shutdowns, and emergencies as required by 20.2.70.300.D.5(f) and (g) NMAC. This plan shall be kept on site to be made available to the Department upon request. This plan should not be submitted with this application.
- NSR** (20.2.72 NMAC), **PSD** (20.2.74 NMAC) & **Nonattainment** (20.2.79 NMAC) **Sources:** By checking this box and certifying this application the permittee certifies that it has developed an **Operational Plan to Mitigate Source Emissions During Malfunction, Startup, or Shutdown** defining the measures to be taken to mitigate source emissions during malfunction, startup, or shutdown as required by 20.2.72.203.A.5 NMAC. This plan shall be kept on site to be made available to the Department upon request. This plan should not be submitted with this application.
- Title V** (20.2.70 NMAC), **NSR** (20.2.72 NMAC), **PSD** (20.2.74 NMAC) & **Nonattainment** (20.2.79 NMAC) **Sources:** By checking this box and certifying this application the permittee certifies that it has established and implemented a Plan to Minimize Emissions During Routine or Predictable Startup, Shutdown, and Scheduled Maintenance through work practice standards and good air pollution control practices as required by 20.2.7.14.A and B NMAC. This plan shall be kept on site or at the nearest field office to be made available to the Department upon request. This plan should not be submitted with this application.
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# Section 15

## Alternative Operating Scenarios (Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

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

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

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

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Not applicable, as there are no alternative operating scenarios at this facility.



# Section 16

## Air Dispersion Modeling

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

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

**Check each box that applies:**

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

Modeling was last conducted for NSR permit Number 0742-M4.

# Section 17

## Compliance Test History

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

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

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**Compliance Test History Table**

Unit No.	Test Description	Test Date
1	Annual NO2 and CO testing as required by the permit.	7/14/2020
2	Annual NO2 and CO testing as required by the permit.	7/14/2020
3	Annual NO2 and CO testing as required by the permit.	7/14/2020

# Section 18

## Addendum for Streamline Applications

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

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Not applicable, as this is not a streamline application.

# Section 19

## Requirements for Title V Program

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### 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.
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### **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.

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The facility is not subject to 40 CFR, Part 64, Compliance Assurance Monitoring (CAM); consequently, a monitoring protocol is not required with this application.

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### **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.

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The facility is in compliance with all applicable requirements, as has been demonstrated by the most recent semi-annual monitoring reports and annual compliance certification. It is assumed that compliance with the Title V operating permit ensures compliance with the construction permit and New Mexico regulations.

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### **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 facility will continue to be in compliance with applicable requirements for which it is in compliance at the time of this permit application. In addition, Harvest 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). **None**

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**.

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The facility 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 facility 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.

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**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.

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The facility is not subject to 40 CFR 68, Chemical Accident Prevention Provisions; consequently, a Risk Management Plan is not required.

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

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

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

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The facility is located within 80 kilometers of the following states, local pollution control programs, Indian tribes and pueblos:

Colorado ( $\approx 25$  km)  
Jicarilla Apache Indian Reservation ( $\approx 52$  km)

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**19.9 - Responsible Official**

Provide the Responsible Official as defined in 20.2.70.7.AD NMAC:

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The responsible official is Travis Jones.

# Section 20

## Other Relevant Information

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

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

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Not applicable, as no other relevant information is being provided.



# Section 21

## Addendum for Landfill Applications

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

EPA Background Information for MSW Landfill Air Quality Regulations:

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

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

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Not applicable, as the facility is not a landfill.

# Section 22 Certification

Company Name: Harvest Four Corners, LLC

I, TRAVIS S. 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 22 day of MARCH, 2022, upon my oath or affirmation, before a notary of the State of New Mexico.

[Handwritten Signature]  
\*Signature

3/22/2022  
Date

TRAVIS JONES  
Printed Name

HR MANAGER  
Title

Scribed and sworn before me on this 22 day of March, 2022.

My authorization as a notary of the State of New Mexico expires on the 23 day of November, 2025.

[Handwritten Signature]  
Notary's Signature

3/22/2022  
Date

Jennifer Deal  
Notary's Printed Name



\*For Title V applications, the signature must be of the Responsible Official as defined in 20.2.70.7.AD NMAC.