



United States Environmental Protection Agency
<https://www.epa.gov/tribal-air/tribal-minor-new-source-review>
 January 4, 2017

**Part 2: Submit Within 60 Days After Startup
 of Production -- Emission and Production
 Information**

**FEDERAL IMPLEMENTATION PLAN FOR TRUE MINOR SOURCES IN INDIAN
 COUNTRY IN THE OIL AND NATURAL GAS PRODUCTION AND NATURAL
 GAS PROCESSING SEGMENTS OF THE OIL AND NATURAL GAS SECTOR
 Registration for New True Minor Oil and Natural Gas Sources and Minor
 Modifications at Existing True Minor Oil and Natural Gas Sources**

Please submit information to:

[Reviewing Authority
 Address
 Phone]

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A. GENERAL SOURCE INFORMATION (See Instructions Below)

1. Company Name		2. Source Name	
3. Type of Oil and Natural Gas Operation		4. New Minor Source? <input type="checkbox"/> Yes <input type="checkbox"/> No	
		5. True Source Modification? <input type="checkbox"/> Yes <input type="checkbox"/> No	
6. NAICS Code		7. SIC Code	
8. U.S. Well ID(s) or API Number(s) [if applicable]			
9. Area of Indian Country	10. County	11a. Latitude	11b. Longitude

B. CONTACT INFORMATION (See Instructions Below)

1. Owner Name	Title
Mailing Address	
Email Address	
Telephone Number	Facsimile Number
2. Operator Name (if different from owner)	Title
Mailing Address	
Email Address	
Telephone Number	Facsimile Number
3. Source Contact	Title
Mailing Address	
Email Address	
Telephone Number	Facsimile Number

4. Compliance Contact		Title	
Mailing Address			
Email Address			
Telephone Number		Facsimile Number	

C. EMISSIONS AND OTHER SOURCE INFORMATION

Include all of the following information in the table below and as attachments to this form:

Note: The emission estimates can be based upon actual test data or, in the absence of such data, upon procedures acceptable to the Reviewing Authority. The following procedures are generally acceptable for estimating emissions from air pollution sources: (1) unit-specific emission tests; (2) mass balance calculations; (3) published, verifiable emission factors that are applicable to the unit (i.e., manufacturer specifications); (4) other engineering calculations; or (5) other procedures to estimate emissions specifically approved by the Reviewing Authority. Guidance for estimating emissions can be found at <https://www.epa.gov/chief>.

- Narrative description of the operations.
- Identification and description of any air pollution control equipment and compliance monitoring devices or activities.
- Type and actual amount (annually) of each fuel that will be used.
- Type of raw materials used (e.g., water for hydraulic fracturing).
- Actual, annual production rates.
- Actual operating schedules.
- Any existing limitations on source operations affecting emissions or any work practice standards, where applicable, for all regulated New Source Review (NSR) pollutants at your source. Indicate all requirements referenced in the Federal Implementation Plan (FIP) for True Minor Sources in Indian Country in the Oil and Natural Gas Production and Natural Gas Processing Segments of the Oil and Natural Gas Sector that apply to emissions units and air pollution generating activities at the source or proposed. Include statements indicating each emissions unit that is an emissions unit potentially subject to the requirements referenced in the FIP, but does not meet the definition of an affected facility under the referenced requirement, and therefore, is not subject to those requirements.
- For each emissions unit comprising the new source or modification, estimates of the total allowable (potential to emit) annual emissions at startup of production from the air pollution source for the following air pollutants: particulate matter, PM₁₀, PM_{2.5}, sulfur oxides (), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H₂SO₄), hydrogen sulfide (H₂S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates. Allowable annual emissions are defined as: emissions rate of an emissions unit calculated using the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical

or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation, or the effect it would have on emissions, is legally and practically enforceable. You must determine the potential for emissions within 30 days from the startup of production.

- For each emissions unit comprising the new source or modification, estimates of the total actual annual emissions during the upcoming, consecutive 12 months from the air pollution source for the following air pollutants: particulate matter (PM, PM₁₀, PM_{2.5}), sulfur oxides (SO_x), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, ammonia (NH₃), fluorides (gaseous and particulate), sulfuric acid mist (H₂SO₄), hydrogen sulfide (H₂S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates. Estimates of actual emissions must take into account equipment, operating conditions, and air pollution control measures. You should calculate an estimate of the actual annual emissions using estimated operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted.

D. TABLE OF ESTIMATED EMISSIONS

Provide in the table below estimates of the total allowable annual emissions in tons per year (tpy) and total actual annual emissions (tpy) for the following pollutants for all emissions units comprising the new source or modification.

POLLUTANT	TOTAL ALLOWABLE ANNUAL EMISSIONS (TPY)	TOTAL ACTUAL ANNUAL EMISSIONS (TPY)
PM		
PM₁₀		
PM_{2.5}		
SO_x		
NO_x		
CO		
VOC		
Pb		

POLLUTANT	TOTAL ALLOWABLE ANNUAL EMISSIONS (TPY)	TOTAL ACTUAL ANNUAL EMISSIONS (TPY)
NH3		
Fluorides		
H₂SO₄		
H₂S		
TRS		

Instructions for Part 2

Please answer all questions. If the item does not apply to the source and its operations write "n/a". If the answer is not known write "unknown".

A. General Source Information

1. Company Name: Provide the complete company name. For corporations, include divisions or subsidiary name, if any.
2. Source Name: Provide the source name. Please note that a source is a site, place, or location that may contain one or more air pollution emitting units.
3. Type of Operation: Indicate the generally accepted name for the oil and natural gas production or natural gas processing segment operation (e.g., oil and gas well site, tank battery, compressor station, natural gas processing plant).
4. New True Minor Source: [Per Federal Indian Country Minor New Source Review Rule, 40 CFR 49.153].
5. True Minor Source Modification: [Per Federal Indian Country Minor New Source Review Rule, 40 CFR 49.153].
6. North American Industry Classification System (NAICS): The NAICS Code for your oil and natural gas source can be found at the following link for North American Industry Classification System:
<http://www.census.gov/eos/www/naics/>.
7. Standard Industrial Classification Code (SIC Code): Although the new NAICS code has replaced the SIC codes, much of the Clean Air Act permitting processes continue to use these codes. The SIC Code for your oil and natural gas source can be found at the following link for Standard Industrial Classification Codes:
http://www.osha.gov/pls/imis/sic_manual.html.
8. U.S. Well ID or API Number: Unique well identifier as assigned by the Federal or State oil and gas regulatory agency with primacy, using the American Petroleum Institute (API) Standard for number format (pre-2014) or the Professional Petroleum Data Management (PPDM) Association US Well Number Standard (2014-present). Provide IDs for all oil and natural gas production wells associated with the facility, if applicable. May not be applicable for downstream production sources, such as compressor stations.
9. Area of Indian Country: Provide the name of the Indian reservation within which the source is operating.
10. County: Provide the County within which the source is operating.
11. Latitude & Longitude (11a. and 11b.): Provide latitude and longitude location(s) in decimal degrees, indicating the datum used in parentheses. These are GPS (global positioning system) coordinates. This information should be provided in decimal degrees with 6 digits to the right of the decimal point, indicating the datum used in parentheses (i.e., NAD 27, NAD 83, WGS 84 – WGS 84 is preferred over NAD 27).

B. Contact Information

Please provide the information requested in full.

1. Owners: List the full name (last, middle initial, first) of all owners of the source.
2. Operator: Provide the name of the operator of the source if it is different from the owner(s).
3. Source Contact: The source contact must be the local contact authorized to receive requests for data and information.
4. Compliance Contact: The compliance contact must be the local contact responsible for the source's compliance with this rule. If this is the same as the Source Contact please note this on the form.

C. Attachments

The information requested in the attachments will enable the U.S. Environmental Protection Agency (EPA) to understand the type of oil and natural gas source being registered and the nature and extent of the air pollutants to be emitted.

Disclaimers:

The public reporting and recordkeeping burden for this collection of information is estimated to average 6 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

Information in these forms submitted in compliance with the final Federal Indian Country Minor NSR rule may be claimed as confidential. A company may assert a claim of confidentiality for information submitted by clearly marking that information as confidential. Such information shall be treated in accordance with EPA's procedures for information claimed as confidential at 40 CFR part 2, subpart B, and will only be disclosed by the means set forth in the subpart. If no claim of confidentiality accompanies the report when it is received by EPA, it may be made public without further notice to the company (40 CFR 2.203).

Attachment A

Process Description and Process Flow Diagram

The Bonanza 14, 15 & Chacon Amigos 17, 18 Site will be a natural gas compressor station owned and operated by DJR Operating, LLC (DJR). The Site will operate under SIC code 1311 and is proposed to be located on Jicarilla Apache Tribal Land in Sandoval County, New Mexico.

Natural gas will enter the facility through the inlet separator. Liquids will be separated from the gas, which will be stored in storage tanks. The condensate/produced water will occasionally be removed from the tanks via truck and hauled offsite. The natural gas will be compressed by a natural gas-fired compressor engine and sent offsite via pipeline.

This New Source Review (NSR) permit application is being submitted under the Environmental Protection Agency's (EPA) Federal Implementation Plan for Managing Air Emissions from True Minor Sources in Indian Country in the Oil and Natural Gas Production and Natural Gas Processing Segments of the Oil and Natural Gas Sector (40 CFR Part 49, Subpart C). The following equipment is being proposed to be operated under the NSR permit:

- One (1) Caterpillar G 3306B TA natural gas-fired, 4-stroke rich-burn (4SRB) reciprocating engine (Unit: 1) equipped with an Non-Selective Catalytic Reduction (NSCR) catalyst;
- Ten (10) condensate and produced water storage tanks (Units: TK-1 through TK-10);
- Truck loading emissions (Unit: LOAD);
- Facility-wide fugitive emissions (Unit: FUG);
- Startup, shutdown, maintenance, and malfunction emissions (Unit: SSM/M); and
- Haul road emissions (Unit: HAULRD).

The site will operate continuously, 8,760 hours per year and is expected to emit below Title V and PSD major source thresholds.

A process flow diagram is included on the following page.

Attachment B

Emission Calculations and Supporting Documentation

Project Emission Summary

Unit No.	Description	NO _x		CO		VOC		SO ₂		PM ₁₀ /PM _{2.5}		Formaldehyde (HAP)		Total HAPs	
		(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
1	Caterpillar G 3306B TA	0.19	0.83	0.76	3.32	0.27	1.16	0.02	0.09	0.03	0.12	0.03	0.13	0.05	0.21
TK-1	Condensate Tank 1	--	--	--	--	0.12	0.50	--	--	--	--	--	--	0.01	0.03
TK-2	Condensate Tank 2	--	--	--	--	0.12	0.50	--	--	--	--	--	--	0.01	0.03
TK-3	Condensate Tank 3	--	--	--	--	0.10	0.44	--	--	--	--	--	--	0.01	0.03
TK-4	Condensate Tank 4	--	--	--	--	0.10	0.44	--	--	--	--	--	--	0.01	0.03
TK-5	Condensate Tank 5	--	--	--	--	0.09	0.37	--	--	--	--	--	--	0.01	0.02
TK-6	Condensate Tank 6	--	--	--	--	0.09	0.37	--	--	--	--	--	--	0.01	0.02
TK-7	Condensate Tank 7	--	--	--	--	0.22	0.95	--	--	--	--	--	--	0.01	0.06
TK-8	Condensate Tank 8	--	--	--	--	0.22	0.95	--	--	--	--	--	--	0.01	0.06
TK-9	Produced Water Tank 1	--	--	--	--	0.00	0.02	--	--	--	--	--	--	0.00	0.00
TK-10	Produced Water Tank 2	--	--	--	--	0.00	0.02	--	--	--	--	--	--	0.00	0.00
LOAD	Truck Loading	--	--	--	--	68.42	0.21	--	--	--	--	--	--	--	--
FUG	Fugitive Emissions	--	--	--	--	1.82	7.97	--	--	--	--	--	--	0.03	0.11
SSM/M	Startup, Shutdown, Maintenance and Malfunction	--	--	--	--	--	10.00	--	--	--	--	--	--	--	--
HAULRD	Haul Road	--	--	--	--	--	--	--	--	0.04	0.01	--	--	--	--
Total Project Emissions		0.19	0.83	0.76	3.32	71.54	23.91	0.02	0.09	0.06	0.13	0.03	0.13	0.13	0.59
Title V Threshold Limit			100		100		100		100		100		10		25
Below Title V Threshold Limit?			YES		YES		YES		YES		YES		YES		YES

Notes:

All PM assumed to be PM_{2.5}

SSM/M Emissions: Instead of permitting SSM and upset/malfunction emissions separately, the applicant requests that emissions from both SSM and upset/malfunction be consolidated in the permit with a total limit of 10 tons per year per facility for the combined category to reduce concerns about the appropriateness of activities listed as SSM.

Compressor Engine Emission Calculations

Unit Nos. 1
 Source Description: Natural gas engine
 Manufacturer: Caterpillar
 Model: G 3306B TA
 Type burn 4-Stroke Rich-burn (4SRB)
 Manufacture Date: 4/6/2015 Serial No.: R6S04794

Control:

Method: Oxidation Catalyst
 Control Efficiency NOx 97%
 CO 87%
 NMHC 0%

Specifications

RPM 1800 rpm
 Site horsepower (hp) 172 hp

Fuel Consumption

BSFC: 8419 Btu/hp-hr
 Fuel Heat Value 1020 Btu/scf
 Heat input 1.45 MMBtu/hr
 Fuel consumption 1.42 Mscf/hr

Emission Calculations Controlled

NO _x	CO	VOC	SO ₂	PM ₁₀ ¹	PM _{2.5} ²	Formaldehyde	Units	Comments
0.50	2.00	0.70					g/bhp-hr	Manufacturer's Data (Subpart JJJJ limits)
			50				gr total sulfur	Mscf pipeline specification
				0.01941	0.01941	0.0205	lb/MMBtu	From AP-42 Table 3.2-3 (7/00)
0.19	0.76	0.27	0.02	0.03	0.03	0.03	lb/hr	Calculated hourly emission rate
0.83	3.32	1.16	0.09	0.12	0.12	0.13	tpy	Annual emission rate (hrs/yr) = 8760

Note: Controlled NO_x, CO, VOC, and formaldehyde emission factors are estimated using the catalyst manufacturer's claimed factors including a 25% safety factor.

Emission Calculations Uncontrolled

NO _x	CO	VOC	SO ₂	PM ₁₀ ¹	PM _{2.5} ²	Formaldehyde	Units	Comments
15.77	15.77	0.32					g/bhp-hr	Manufacturer's Data
			50				gr total sulfur	Mscf pipeline specification
				0.01941	0.01941	0.0205	lb/MMBtu	From AP-42 Table 3.2-3 (7/00)
5.98	5.98	0.12	0.02	0.03	0.03	0.03	lb/hr	Calculated hourly emission rate
26.19	26.19	0.53	0.09	0.12	0.12	0.13	tpy	Annual emission rate (hrs/yr) = 8760

Notes:

1. PM₁₀ = AP-42 PM₁₀ (filterable) + PM (condensable).
2. PM_{2.5} = AP-42 PM_{2.5} (filterable) + PM (condensable).

GHG Emission Calculations (Uncontrolled)

CO ₂	N ₂ O	CH ₄	Units	Comments
53.06	0.0001	0.001	kg/MMBtu	From 40 CFR Part 98, Subpart C
169.38	0.0003	0.003	lb/hr	Calculated hourly emission rate
741.89	0.001	0.01	tpy	Annual emission rate (hrs/yr) = 8760

Compressor Engine HAP Emission Calculations

Unit No. 1

AP-42 Factors for Emission Rates from Table 3.2-3 (7/00)

HAP	lb/MMBtu	Emission rate	
		(lb/hr)	(tpy)
1,1,2,2-Tetrachloroethane	2.53E-05	3.66E-05	1.60E-04
1,1,2-Trichloroethane	1.53E-05	2.22E-05	9.70E-05
1,3-Butadiene	6.63E-04	9.60E-04	4.21E-03
1,3-Dichloropropene	1.27E-05	1.84E-05	8.06E-05
Acetaldehyde	2.79E-03	4.04E-03	1.77E-02
Acrolein	2.63E-03	3.81E-03	1.67E-02
Benzene	1.58E-03	2.29E-03	1.00E-02
Carbon tetrachloride	1.77E-05	2.56E-05	1.12E-04
Chlorobenzene	1.29E-05	1.87E-05	8.18E-05
Chloroform	1.37E-05	1.98E-05	8.69E-05
Ethyl benzene	2.48E-05	3.59E-05	1.57E-04
Ethylene dibromide	2.13E-05	3.08E-05	1.35E-04
Formaldehyde	2.05E-02	2.97E-02	1.30E-01
Methanol	3.06E-03	4.43E-03	1.94E-02
Methylene chloride	4.12E-05	5.97E-05	2.61E-04
Naphthalene	9.71E-05	1.41E-04	6.16E-04
PAH	1.41E-04	2.04E-04	8.94E-04
Styrene	1.19E-05	1.72E-05	7.55E-05
Toluene	5.58E-04	8.08E-04	3.54E-03
Vinyl chloride	7.18E-06	1.04E-05	4.55E-05
Xylene	1.94E-04	2.81E-04	1.23E-03
TOTAL		0.05	0.21

Note:

¹ Emission factor for formaldehyde from vendor specification (g/hp-hr)

Tank Emission Calculations

Unit No.	Tank ID	Capacity (gal)	Annual Throughput (gal/yr)	Uncontrolled Hourly VOC Emissions (lb/hr)	Uncontrolled Annual VOC Emissions (tpy)	Uncontrolled Hourly HAP Emissions (lb/hr)	Uncontrolled Annual HAP Emissions (tpy)
TK-1	Condensate Tank 1	16,800	5,816	0.12	0.50	0.01	0.03
TK-2	Condensate Tank 2	16,800	5,816	0.12	0.50	0.01	0.03
TK-3	Condensate Tank 3	16,800	5,292	0.10	0.44	0.01	0.03
TK-4	Condensate Tank 4	16,800	5,292	0.10	0.44	0.01	0.03
TK-5	Condensate Tank 5	16,800	4,494	0.09	0.37	0.01	0.02
TK-6	Condensate Tank 6	16,800	4,494	0.09	0.37	0.01	0.02
TK-7	Condensate Tank 7	16,800	11,592	0.22	0.95	0.01	0.06
TK-8	Condensate Tank 8	16,800	11,592	0.22	0.95	0.01	0.06
TK-9	Produced Water Tank 1	16,800	11,592	0.004	0.02	0.0001	0.001
TK-10	Produced Water Tank 2	16,800	11,592	0.004	0.02	0.0001	0.001
Total			77,572	1.04	4.56	0.06	0.27

Notes:

Emissions include standing losses, working losses, and flash emissions. Calculated with E & P TANKS 3.0
 Produced Water Tanks estimated 2% VOC (conservative).

Tank emissions over 6 tpy require controls (VRU) under NSPS Subpart OOOOa if manufactured after September 18, 2015.

Truck Loading Emissions

Unit Nos.: LOAD-COND and LOAD-WATER

Truck Loading Emissions

Unit No.	Product	Mol wt. (lb/lb-mol)	Max Temp. (°F)	Max Vapor Pressure (psia)	Sat. Factor	Annual Throughput (gal/yr)	Maximum loading rate (gal/hr)	Loading VOC Emissions (lb/hr)	Loading VOC Emissions (tpy)
LOAD-COND	Condensate	66.00	86.25	8.42	0.60	54,388	8,820	67.08	0.21
LOAD-WATER	Produced Water	66.00	86.25	8.42	0.60	23,184	8,820	1.34	0.004
TOTAL						77,572	Total	68.42	0.21

Notes:

Emission calculations based on AP-42 Section 5.2, 6/08

$$L = 12.46 \times \frac{(SPM)}{T}$$

Where:

L = loading loss (lb/1,000 gal)

S = Saturation Factor for submerged loading (Table 5.2-1)

P = Vapor Pressure (psia), from EPA's TANKS 4.09d program using Gasoline (RVP 10)

M = Molecular weight (vapor MW from Tank Flash Part #1 Mixture MW)

T = Temperature (°R = °F + 460)

Loading VOC Emissions (tpy) = L (lb/1,000 gal) x Annual Throughput (1,000gal/yr) / 2,000 (lb/ton)

Fugitive Emissions Estimate

Unit No.: FUG

Component Source Counts for Gas Plant/Compressor Station Units

Equipment Type	Compressor	Separator	Tank	TEG Unit	DEA Unit	C3 Refrig Skid	Expan Demeth	Mole Sieve System	Flare
For this facility, Number of Units	1	4	8	0	0	0	0	0	0
Valves - Inlet Gas	40	6	4	75	15	40	40	25	8
Valves - Liquid	5	4	6	20	60	35	35	0	2
Relief Valves	2	2	2	4	4	6	6	4	2
Pump Seals - Liquid	0	0	2	4	4	0	0	0	0
Flanges/Connectors - Inlet Gas	150	150	20	250	250	250	250	100	75
Flanges/Connectors - Liquid	10	10	40	20	20	20	20	20	10
Compressor Seals	4	0	0	0	0	6	0	0	0

Emissions from Fugitive Sources

Equipment Type	Emission Factor (lb/hr/ source)	Source Count *	VOC		VOC Emission Rate (tpy)
			% VOC	C3+	
Valves - Inlet Gas	0.00992	96	38.57%	0.37	1.61
Valves - Liquid	0.00550	69	100.00%	0.38	1.66
Relief Valves	0.01940	26	38.57%	0.19	0.85
Pump Seals - Liquid	0.02866	16	100.00%	0.46	2.01
Flanges/Connectors - Inlet Gas	0.00086	910	38.57%	0.30	1.32
Flanges/Connectors - Liquid	0.00024	370	100.00%	0.09	0.39
Compressor Seals	0.01940	4	38.57%	0.03	0.13
Total				1.82	7.97

H ₂ S Emission Rate (lb/hr)	H ₂ S Emission Rate (tpy)
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

HAP Emission Rate (lb/hr)	HAP Emission Rate (tpy)
0.01	0.03
0.00	0.01
0.00	0.02
0.00	0.02
0.01	0.03
0.00	0.00
0.00	0.00
0.03	0.11

* Source counts estimated from similar facilities. These counts are not actuals.

Source: EPA Protocol for Equipment Leak Emission Estimates, November, 1995, EPA-453/R-95-017

Gas Composition for Fugitive Emissions Estimate (Chacon Amigos 17)

	Molecular Wt (lb/lb-mole)	% Mol (%)	(Mol %) x (MW)	Wt % (%)
Methane	16.0	51.42	822.88	31.72%
Ethane	30.0	23.62	708.74	27.32%
Total HC (non-VOC)			0.00	59.05%
Propane	44.0	12.37	544.39	20.99%
i-Butane	58.0	1.35	78.32	3.02%
n-Butane	58.0	2.36	136.91	5.28%
i-Pentane	72.0	0.47	33.85	1.30%
n-Pentane	72.0	0.32	23.04	0.89%
Hexane Plus	86.0	0.00	0.00	0.00%
n-Hexane	86.0	0.20	17.20	0.66%
Total VOC			0.00	32.14%
Carbon Dioxide	44.0	0.51	22.44	0.87%
Hydrogen Sulfide	34.1	0.00	0.00	0.00%
Helium	4.0	0.00	0.00	0.00%
Nitrogen	28.0	7.36	206.12	7.95%
Totals		100	2593.90	191%
Total VOC Wt % plus 20% **				38.57%
Total HAP Wt % plus 20% **				0.80%

** 20% added to Gas/Vapor Weight % to account for variability in the gas.

GHG Emissions

	CO ₂ Emission Rate (lb/hr)	CO ₂ Emission Rate (tpy)	CH ₄ Emission Rate (lb/hr)	CH ₄ Emission Rate (tpy)
Valves - Inlet Gas	0.008	0.036	0.302	1.32
Valves - Liquid	0.003	0.014	0.120	0.53
Relief Valves	0.004	0.019	0.160	0.70
Pump Seals - Liquid	0.004	0.017	0.145	0.64
Flanges/Connectors - Inlet Gas	0.007	0.030	0.248	1.09
Flanges/Connectors - Liquid	0.001	0.003	0.028	0.12
Compressor Seals	0.001	0.003	0.025	0.11
Totals	0.03	0.12	1.03	4.51

PER Calculation For Truck Traffic On Haul Roads

Paved roads (p): AP-42 Chapter 13.2.1 (1/11)

Unpaved roads (u): AP-42 Chapter 13.2.2 (11/06)

$$\text{Equation (2): } E = k \times (sL)^{0.91} \times (W)^{1.02} \times \left(1 - \frac{P}{4 \times 365}\right)$$

$$\text{Equation (1a): } E = k \times \left(\frac{sC}{12}\right)^a \times \left(\frac{W}{3}\right)^b \times \left(\frac{365-P}{365}\right) \times \left(\frac{S}{30}\right)^d \times (1-CE)$$

	k
PM	0.011
PM ₁₀	0.0022
PM _{2.5}	0.00054

	k	a	b	d
PM	4.9	0.7	0.45	0.3
PM ₁₀	1.5	0.9	0.45	0.5
PM _{2.5}	0.15	0.9	0.45	0.5

Haul Road / Traffic Parameters

Activity / Road Description	Road Type / Silt Value		Roundtrip Length (feet)		Truck Weight (tons)			Ave. Speed (mph)	Unrestricted Maximum Throughput (gallons/yr)	Ave. Truck Capacity (units/truck)	Annual VMT
			empty	full	empty	full	Ave.				
Haul Trucks	u	4.80	850	850	17	52	34.5	10	77,572	8,400 gallons	3.0

Controlled Emissions Unpaved Haul Road

	Emission Factors (lb/VMT)			Haul Road Emissions (tons/yr)		
	PM	PM ₁₀	PM _{2.5}	PM	PM ₁₀	PM _{2.5}
Haul Trucks	5.57	1.14	0.11	0.01	0.002	0.0002
Total Annual Emissions:				0.01	0.002	0.0002

Description of Constants/Variables

- E: haul road emissions (lb/VMT)
- k, d: dimensionless constants from Draft AP-42 Chapter 13.IV (paved)
- k, a, b, c, d: dimensionless constants from AP-42 Tables 13.2.1-1 & 13.2.2-2 (unpaved)
- sL: silt loading (g/m²) of paved road surface
- sC: silt content (%) of unpaved road surface
- W: average vehicle weight (tons)
- P: days/yr with at least 0.01" of precipitation
P = default = 90
- S: mean vehicle speed on road (mph)
- CE: unpaved road, dust control efficiency
CE = default = 0%
- VMT: vehicle miles traveled

Note:

Haul Road emissions for the Huerfano Mountain Compressor Station are exempt since the PER is less than 0.5 tpy.

EICS Emissions Performance Specification Summary

Engine Data

Engine Manufacturer: Caterpillar
 Model Number: G3306B TA, 4-stroke-cycle
 Power Output: 172 bhp
 Load: 100%
 Rated Speed: 1800 RPM
 Type of Fuel: Natural Gas @ 8419 BTU/bhp-hr (LHV)
 Exhaust Flow Rate (Wet): 870 ft³/min
 Exhaust Temperature: 1136°F
 Engine Data Source Information: Caterpillar, Gas Engine Rating Pro Software
 Version 6.08.00
 3306B, Gas Compression
 Ref. Data Set EM0844-04-001

NSCR Catalytic Converter Details

Murphy Part Number: E2379055
 Material: Stainless Steel
 Diameter: 13"
 Overall Length: 24"
 Inlet Pipe Size & Connection: 5" FF Flange, 125/150# ANSI standard bolt pattern
 Outlet Pipe Size & Connection: 5" FF Flange, 125/150# ANSI standard bolt pattern
 Weight: (± 2 lbs.) 59 lbs +/- 2 lbs
 System Pressure Loss (estimated): 6.0 inches of WC (Fresh)
 Exhaust Temperature Limits:
 Inlet Min: 750°F
 Inlet Max: 1250°F
 Lubrication Oil Requirements: 0.5 wt% sulfated ash or less

EICS Catalyst Emissions Calculations		
	Raw Engine Emissions^{1,2}	Targeted Outlet Emissions³
	g/bhp-hr	g/bhp-hr
NOx	15.77	0.5
CO	15.77	2
NMNEHC	0.32	0.7
Oxygen %	0.5	---

¹ As provided by the Engine Data Source Information above: Calculated with LHV fuel quality of 1294 BTU/scf.

² Raw engine out emissions may vary with different fuel quality.

³ The Murphy EICS product line is an Engine Integrated Control System offered for specific engine models. When operated with the optional emission package (which includes a Murphy catalyst), the system is designed to keep the engine at or below the above targeted outlet emissions. Components and equipment must be in proper operating condition in accordance with accepted standards.

* Project Setup Information *

Project File : C:\Users\Martin Schlupe\Alliant Client and Work Files\Animas
 Environmental Services\New Compressor Station\TANKS.ept3
 Flowsheet Selection : Oil Tank with Separator
 Calculation Method : RVP Distillation
 Control Efficiency : 0.00%
 Known Separator Stream : Low Pressure Oil
 Entering Air Composition : No
 Component Group : C10+

Filed Name : Compressor Station
 Well Name : TK-1 and 2 (Bonanza 14)
 Date : 2018.06.24

* Data Input *

Separator Pressure (psia) : 23.00
 Separator Temperature (F) : 85.0
 C10+ SG : 0.89
 C10+ MW(lb/lbmol) : 260.00

-- Low Pressure Oil -----

No.	Component	Mol e%	Wt%
1	H2S	0.0000	0.0000
2	O2	0.0000	0.0000
3	CO2	0.0011	0.0005
4	N2	0.0070	0.0022
5	C1	0.0395	0.0070
6	C2	0.0966	0.0320
7	C3	1.1075	0.5384
8	i-C4	0.5223	0.3346
9	n-C4	5.0592	3.2411
10	i-C5	6.5168	5.1827
11	n-C5	11.9947	9.5393
12	C6	19.2792	18.3098
13	C7	30.0114	33.1469
14	C8	9.5168	11.9828
15	C9	1.9363	2.7379
16	C10+	0.9027	2.5871
17	Benzene	0.0000	0.0000
18	Toluene	0.0000	0.0000
19	E-Benzene	0.0000	0.0000
20	Xylenes	0.0000	0.0000
21	n-C6	13.0090	12.3577
22	224Tri methyl p	0.0000	0.0000

-- Sales Oil -----

Production Rate (bbl/day) : 0.40
 Days of Annual Operation : 365
 API Gravity : 45.55

Reid Vapor Pressure (psia) : 7.70
 Ambient Pressure (psia) : 14.70
 Ambient Temperature (F) : 70.0

 * Calculation Results *

-- Emission Summary -----

Page 1----- E&P TANK

Total HAPs	0.0300
Total HC	0.5120
VOCs, C2+	0.5110
VOCs, C3+	0.5040
C02	0.0000
CH4	0.0010

Uncontrolled Recovery Information:
 Vapor (mscfd): 0.0176
 HC Vapor (mscfd): 0.0176
 C02 (mscfd): 0.0000
 CH4 (mscfd): 0.0000
 GOR (SCF/STB): 44.0750

-- Emission Composition -----
 Uncontrolled

NoComponent	0.0000
1 H2S	0.0000
2 O2	0.0000
3 C02	0.0010
4 N2	0.0060
5 C1	0.0970
6 C2	0.0260
7 C3	0.1440
8 i-C4	0.0600
9 n-C4	0.0790
10 n-C5	0.0440
11 n-C6	0.0000
12 C6	0.0000
13 Benzene	0.0000
14 Toluene	0.0000
15 E-Benzene	0.0000
16 Xylenes	0.0300
17 n-C6	0.0000
18 224Trimethyl p	0.0210
19 Pseudo Comp1	0.0030
20 Pseudo Comp2	0.0000
21 Pseudo Comp3	0.0000
22 Pseudo Comp4	0.0000
23 Pseudo Comp5	0.5110
24 Total	

-- Stream Data -----							
Component	MW	LP Oil	Flash Oil	Sales Oil	Flash Gas	W&S Gas	Total
		mole %	mole %	mole %	mole %	mole %	mole %
	34.80	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1 H2S	32.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2 O2	44.01	0.0011	0.0011	0.0000	0.0000	0.0289	0.0289
3 CO2	28.01	0.0070	0.0070	0.0000	0.0000	0.1841	0.1841
4 N2	16.04	0.0395	0.0395	0.0000	0.0000	1.0389	1.0389
5 H ₂ O	30.07	0.0966	0.0966	0.0002	0.0000	2.5365	2.5365
6 C2	44.10	1.1075	1.1075	0.1261	0.0000	25.9407	25.9407
7 C3	58.12	0.5223	0.5223	0.3382	0.0000	5.1806	5.1806
8 i-C4	58.12	5.0592	5.0592	4.1066	0.0000	29.1647	29.1647
9 n-C4	72.15	6.5168	6.5168	6.3883	0.0000	9.7678	9.7678
10 i-C5	72.15	11.9947	11.9947	11.9562	0.0000	12.9689	12.9689
11 n-C5	84.00	19.2792	19.2792	19.7959	0.0000	6.2049	6.2049
12 C6	78.11	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13 Benzene	92.13	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14 Toluene	106.17	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15 E-Benzene	106.17	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16 Xylenes	86.18	13.0090	13.0090	13.3626	0.0000	4.0604	4.0604
17 n-C6		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18 2,2,4-Trimethyl p	114.24	30.0114	30.0114	31.0969	0.0000	2.5410	2.5410
19 Pseudo Comp1	96.00	9.5168	9.5168	9.8788	0.0000	0.3550	0.3550
20 Pseudo Comp2	121.00	1.9363	1.9363	2.0117	0.0000	0.0272	0.0272
21 Pseudo Comp3	134.00	0.0908	0.0908	0.0944	0.0000	0.0005	0.0005
22 Pseudo Comp4							
----- E&P TANK -----							
23 Pseudo Comp5	274.10	0.8119	0.8119	0.8440	0.0000	0.0000	0.0000

Flash Oil Sales Oil Flash Gas W&S Gas Total

Bonanza 14

Emission MW (lb/lbmol):	88.22	88.22	89.32	0.00	60.36	60.36
Stream Mole Ratio:	1.0000	1.0000	0.9620		0.0380	0.0380
Stream Weight Ratio:	88.22	88.22	85.92		2.29	2.29
Total Emission (ton):					0.513	0.513
Heating Value (BTU/scf):					3373.40	3373.40
Gas Gravity (Gas/Air):					2.08	2.08
Bubble Pt. @100F (psia):	12.71	12.71	7.91			
RVP @100F (psia):	10.45	10.45	7.69			
Spec. Gravity @100F:	0.68	0.68	0.68			

* Project Setup Information *

Project File : C:\Users\Martin Schlupep\Alliant Client and Work Files\Animas
 Environmental Services\077-008 AES - DJR Energy New Compressor Station NOI\Bonanza 15.ept3
 Flowsheet Selection : Oil Tank with Separator
 Calculation Method : RVP Distillation
 Control Efficiency : 0.00%
 Known Separator Stream : Low Pressure Oil
 Entering Air Composition : No
 Component Group : C10+

Filed Name : Compressor Station
 Well Name : TK-3 and 4 (Bonanza 15)
 Date : 2018.06.24

* Data Input *

Separator Pressure (psia) : 23.00
 Separator Temperature (F) : 85.0
 C10+ SG : 0.89
 C10+ MW(lb/lbmol) : 260.00

-- Low Pressure Oil -----

No.	Component	Mol e%	Wt%
1	H2S	0.0000	0.0000
2	O2	0.0000	0.0000
3	CO2	0.0011	0.0005
4	N2	0.0070	0.0022
5	C1	0.0395	0.0070
6	C2	0.0966	0.0320
7	C3	1.1075	0.5384
8	i-C4	0.5223	0.3346
9	n-C4	5.0592	3.2411
10	i-C5	6.5168	5.1827
11	n-C5	11.9947	9.5393
12	C6	19.2792	18.3098
13	C7	30.0114	33.1469
14	C8	9.5168	11.9828
15	C9	1.9363	2.7379
16	C10+	0.9027	2.5871
17	Benzene	0.0000	0.0000
18	Toluene	0.0000	0.0000
19	E-Benzene	0.0000	0.0000
20	Xylenes	0.0000	0.0000
21	n-C6	13.0090	12.3577
22	2,2,4-Tri methyl p	0.0000	0.0000

-- Sales Oil -----

Production Rate (bbl/day) : 0.34
 Days of Annual Operation : 365
 API Gravity : 45.55

Reid Vapor Pressure (psia) : 7.70
 Ambient Pressure (psia) : 14.70
 Ambient Temperature (F) : 70.0

 * Calculation Results *

-- Emission Summary -----

Page 1----- E&P TANK

Total HAPs	0.0260
Total HC	0.4420
VOCs, C2+	0.4400
VOCs, C3+	0.4350
C02	0.0000
CH4	0.0010

Uncontrolled Recovery Information:

Vapor(mscfd):	0.0152
HC Vapor(mscfd):	0.0152
C02(mscfd):	0.0000
CH4(mscfd):	0.0000
GOR(SCF/STB):	44.0870

-- Emission Composition -----

Uncontrolled

NoComponent	0.0000
1 H2S	0.0000
2 O2	0.0000
3 C02	0.0010
4 N2	0.0060
5 C1	0.0840
6 C2	0.0220
7 C3	0.1240
8 i-C4	0.0520
9 n-C4	0.0690
10 n-C5	0.0380
11 n-C6	0.0000
12 C6	0.0000
13 Benzene	0.0000
14 Tol uene	0.0000
15 E-Benzene	0.0000
16 Xyl enes	0.0260
17 n-C6	0.0000
18 224Trimethyl p	0.0180
19 Pseudo Comp1	0.0030
20 Pseudo Comp2	0.0000
21 Pseudo Comp3	0.0000
22 Pseudo Comp4	0.0000
23 Pseudo Comp5	0.4430
24 Total	

-- Stream Data -----							
Component	MW	LP Oil	Flash Oil	Sales Oil	Flash Gas	W&S Gas	Total
		mole %	mole %	mole %	mole %	mole %	mole %
	34.80	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1 H2S	32.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2 O2	44.01	0.0011	0.0011	0.0000	0.0000	0.0289	0.0289
3 CO2	28.01	0.0070	0.0070	0.0000	0.0000	0.1841	0.1841
4 N2	16.04	0.0395	0.0395	0.0000	0.0000	1.0389	1.0389
5 H ₂ O	30.07	0.0966	0.0966	0.0002	0.0000	2.5365	2.5365
6 C2	44.10	1.1075	1.1075	0.1261	0.0000	25.9407	25.9407
7 C3	58.12	0.5223	0.5223	0.3382	0.0000	5.1806	5.1806
8 i-C4	58.12	5.0592	5.0592	4.1066	0.0000	29.1647	29.1647
9 n-C4	72.15	6.5168	6.5168	6.3883	0.0000	9.7678	9.7678
10 i-C5	72.15	11.9947	11.9947	11.9562	0.0000	12.9689	12.9689
11 n-C5	84.00	19.2792	19.2792	19.7959	0.0000	6.2049	6.2049
12 C6	78.11	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13 Benzene	92.13	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14 Toluene	106.17	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15 E-Benzene	106.17	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16 Xylenes	86.18	13.0090	13.0090	13.3626	0.0000	4.0604	4.0604
17 n-C6		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18 2,2,4-Trimethyl p	114.24	30.0114	30.0114	31.0969	0.0000	2.5410	2.5410
19 Pseudo Comp1	96.00	9.5168	9.5168	9.8788	0.0000	0.3550	0.3550
20 Pseudo Comp2	121.00	1.9363	1.9363	2.0117	0.0000	0.0272	0.0272
21 Pseudo Comp3	134.00	0.0908	0.0908	0.0944	0.0000	0.0005	0.0005
22 Pseudo Comp4							
----- E&P TANK -----							
23 Pseudo Comp5	274.10	0.8119	0.8119	0.8440	0.0000	0.0000	0.0000

Flash Oil Sales Oil Flash Gas W&S Gas Total

Bonanza 15

Emission MW (lb/lbmol):	88.22	88.22	89.32	0.00	60.36	60.36
Stream Mole Ratio:	1.0000	1.0000	0.9620		0.0380	0.0380
Stream Weight Ratio:	88.22	88.22	85.92		2.29	2.29
Total Emission (ton):					0.442	0.442
Heating Value (BTU/scf):					3373.40	3373.40
Gas Gravity (Gas/Air):					2.08	2.08
Bubble Pt. @100F (psia):	12.71	12.71	7.91			
RVP @100F (psia):	10.45	10.45	7.69			
Spec. Gravity @100F:	0.68	0.68	0.68			

* Project Setup Information *

Project File : C:\Users\Martin Schluep\Alliant Client and Work Files\Animas
 Environmental Services\New Compressor Station\Bonanza 15.ept3
 Flowsheet Selection : Oil Tank with Separator
 Calculation Method : RVP Distillation
 Control Efficiency : 0.00%
 Known Separator Stream : Low Pressure Oil
 Entering Air Composition : No
 Component Group : C10+

Filed Name : Compressor Station
 Well Name : TK-5 and 6 (Chacon Amigos 17)
 Date : 2018.06.24

* Data Input *

Separator Pressure (psia) : 23.00
 Separator Temperature (F) : 85.0
 C10+ SG : 0.89
 C10+ MW(lb/lbmol) : 260.00

-- Low Pressure Oil -----

No.	Component	Mol e%	Wt%
1	H2S	0.0000	0.0000
2	O2	0.0000	0.0000
3	CO2	0.0011	0.0005
4	N2	0.0070	0.0022
5	C1	0.0395	0.0070
6	C2	0.0966	0.0320
7	C3	1.1075	0.5384
8	i-C4	0.5223	0.3346
9	n-C4	5.0592	3.2411
10	i-C5	6.5168	5.1827
11	n-C5	11.9947	9.5393
12	C6	19.2792	18.3098
13	C7	30.0114	33.1469
14	C8	9.5168	11.9828
15	C9	1.9363	2.7379
16	C10+	0.9027	2.5871
17	Benzene	0.0000	0.0000
18	Toluene	0.0000	0.0000
19	E-Benzene	0.0000	0.0000
20	Xylenes	0.0000	0.0000
21	n-C6	13.0090	12.3577
22	2,2,4-Tri methyl p	0.0000	0.0000

-- Sales Oil -----

Production Rate (bbl/day) : 0.29
 Days of Annual Operation : 365
 API Gravity : 43.88

Reid Vapor Pressure (psia) : 7.70
 Ambient Pressure (psia) : 14.70
 Ambient Temperature (F) : 70.0

 * Calculation Results *

-- Emission Summary -----

Page 1----- E&P TANK

Total HAPs	0.0220
Total HC	0.3780
VOCs, C2+	0.3770
VOCs, C3+	0.3730
CO2	0.0000
CH4	0.0010

Uncontrolled Recovery Information:

Vapor (mscfd)	0.0130
HC Vapor (mscfd)	0.0130
CO2 (mscfd)	0.0000
CH4 (mscfd)	0.0000
GOR (SCF/STB)	44.4710

-- Emission Composition -----

Uncontrolled

NoComponent	0.0000
1 H2S	0.0000
2 O2	0.0000
3 CO2	0.0010
4 N2	0.0050
5 C1	0.0720
6 C2	0.0190
7 C3	0.1060
8 i-C4	0.0440
9 n-C4	0.0590
10 n-C5	0.0330
12 C6	0.0000
13 Benzene	0.0000
14 Toluene	0.0000
15 E-Benzene	0.0000
16 Xylenes	0.0220
17 n-C6	0.0000
18 2,2,4-Trimethyl p	0.0150
19 Pseudo Comp1	0.0020
20 Pseudo Comp2	0.0000
21 Pseudo Comp3	0.0000
22 Pseudo Comp4	0.0000
23 Pseudo Comp5	0.3780
24 Total	

Chacon Amigos 17

-- Stream Data

Component	MW	LP Oil mole %	Flash Oil mole %	Sales Oil mole %	Flash Gas mole %	W&S Gas mole %	Total mole %
	34.80	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1 H2S	32.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2 O2	44.01	0.0011	0.0011	0.0000	0.0000	0.0289	0.0289
3 CO2	28.01	0.0070	0.0070	0.0000	0.0000	0.1841	0.1841
4 N2	16.04	0.0395	0.0395	0.0000	0.0000	1.0389	1.0389
5 H2O	30.07	0.0966	0.0966	0.0002	0.0000	2.5365	2.5365
6 C2	44.10	1.1075	1.1075	0.1261	0.0000	25.9407	25.9407
7 C3	58.12	0.5223	0.5223	0.3382	0.0000	5.1806	5.1806
8 i-C4	58.12	5.0592	5.0592	4.1066	0.0000	29.1647	29.1647
9 n-C4	72.15	6.5168	6.5168	6.3883	0.0000	9.7678	9.7678
10 i-C5	72.15	11.9947	11.9947	11.9562	0.0000	12.9689	12.9689
11 n-C5	84.00	19.2792	19.2792	19.7959	0.0000	6.2049	6.2049
12 C6	78.11	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13 Benzene	92.13	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14 Toluene	106.17	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15 E-Benzene	106.17	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16 Xylenes	86.18	13.0090	13.0090	13.3626	0.0000	4.0604	4.0604
17 n-C6		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18 2,2,4-Trimethyl p	114.24	30.0114	30.0114	31.0969	0.0000	2.5410	2.5410
19 Pseudo Comp1	96.00	9.5168	9.5168	9.8788	0.0000	0.3550	0.3550
20 Pseudo Comp2	121.00	1.9363	1.9363	2.0117	0.0000	0.0272	0.0272
21 Pseudo Comp3	134.00	0.0908	0.0908	0.0944	0.0000	0.0005	0.0005
22 Pseudo Comp4							
E&P TANK							
23 Pseudo Comp5	274.10	0.8119	0.8119	0.8440	0.0000	0.0000	0.0000

Flash Oil Sales Oil Flash Gas W&S Gas Total

	Chacon Amigos 17					
Emission MW (lb/lbmol):	88.22	88.22	89.32	0.00	60.36	60.36
Stream Mole Ratio:	1.0000	1.0000	0.9620		0.0380	0.0380
Stream Weight Ratio:	88.22	88.22	85.92		2.29	2.29
Total Emission (ton):					0.379	0.379
Heating Value (BTU/scf):					3373.40	3373.40
Gas Gravity (Gas/Air):					2.08	2.08
Bubble Pt. @100F (psia):	12.71	12.71	7.91			
RVP @100F (psia):	10.45	10.45	7.69			
Spec. Gravity @100F:	0.68	0.68	0.68			

* Project Setup Information *

Project File : C:\Users\Martin Schluep\Alliant Client and Work Files\Animas
 Environmental Services\New Compressor Station\Chacon Amigos 17.ept3
 Flowsheet Selection : Oil Tank with Separator
 Calculation Method : RVP Distillation
 Control Efficiency : 0.00%
 Known Separator Stream : Low Pressure Oil
 Entering Air Composition : No
 Component Group : C10+

Filed Name : Compressor Station
 Well Name : TK-7 and 8 (Chacon Amigos 18)
 Date : 2018.06.24

* Data Input *

Separator Pressure (psia) : 23.00
 Separator Temperature (F) : 85.0
 C10+ SG : 0.89
 C10+ MW(lb/lbmol) : 260.00

-- Low Pressure Oil -----

No.	Component	Mol e%	Wt%
1	H2S	0.0000	0.0000
2	O2	0.0000	0.0000
3	CO2	0.0011	0.0005
4	N2	0.0070	0.0022
5	C1	0.0395	0.0070
6	C2	0.0966	0.0320
7	C3	1.1075	0.5384
8	i-C4	0.5223	0.3346
9	n-C4	5.0592	3.2411
10	i-C5	6.5168	5.1827
11	n-C5	11.9947	9.5393
12	C6	19.2792	18.3098
13	C7	30.0114	33.1469
14	C8	9.5168	11.9828
15	C9	1.9363	2.7379
16	C10+	0.9027	2.5871
17	Benzene	0.0000	0.0000
18	Toluene	0.0000	0.0000
19	E-Benzene	0.0000	0.0000
20	Xylenes	0.0000	0.0000
21	n-C6	13.0090	12.3577
22	224Tri methyl p	0.0000	0.0000

-- Sales Oil -----

Production Rate (bbl/day) : 0.76
 Days of Annual Operation : 365
 API Gravity : 46.16

Reid Vapor Pressure (psia) : 7.70
 Ambient Pressure (psia) : 14.70
 Ambient Temperature (F) : 70.0

 * Calculation Results *

-- Emission Summary -----

Page 1----- E&P TANK

Total HAPs	0.0560
Total HC	0.9640
VOCs, C2+	0.9610
VOCs, C3+	0.9490
CO2	0.0000
CH4	0.0030

Uncontrolled Recovery Information:

Vapor (mscfd)	0.0332
HC Vapor (mscfd)	0.0331
CO2 (mscfd)	0.0000
CH4 (mscfd)	0.0000
GOR (SCF/STB)	43.9153

-- Emission Composition -----

Uncontrolled

NoComponent	0.0000
1 H2S	0.0000
2 O2	0.0010
3 CO2	0.0030
4 N2	0.0120
5 C1	0.1830
6 C2	0.0480
7 C3	0.2710
8 i-C4	0.1130
9 n-C4	0.1500
10 n-C5	0.0830
12 C6	0.0000
13 Benzene	0.0000
14 Tol uene	0.0000
15 E-Benzene	0.0000
16 Xyl enes	0.0560
17 n-C6	0.0000
18 224Trimethyl p	0.0390
19 Pseudo Comp1	0.0060
20 Pseudo Comp2	0.0010
21 Pseudo Comp3	0.0000
22 Pseudo Comp4	0.0000
23 Pseudo Comp5	0.9660
24 Total	

Chacon Amigos 18

-- Stream Data

Component	MW	LP Oil mole %	Flash Oil mole %	Sales Oil mole %	Flash Gas mole %	W&S Gas mole %	Total mole %
	34.80	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1 H2S	32.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2 O2	44.01	0.0011	0.0011	0.0000	0.0000	0.0289	0.0289
3 CO2	28.01	0.0070	0.0070	0.0000	0.0000	0.1841	0.1841
4 N2	16.04	0.0395	0.0395	0.0000	0.0000	1.0389	1.0389
5 H2O	30.07	0.0966	0.0966	0.0002	0.0000	2.5365	2.5365
6 C2	44.10	1.1075	1.1075	0.1261	0.0000	25.9407	25.9407
7 C3	58.12	0.5223	0.5223	0.3382	0.0000	5.1806	5.1806
8 i-C4	58.12	5.0592	5.0592	4.1066	0.0000	29.1647	29.1647
9 n-C4	72.15	6.5168	6.5168	6.3883	0.0000	9.7678	9.7678
10 i-C5	72.15	11.9947	11.9947	11.9562	0.0000	12.9689	12.9689
11 n-C5	84.00	19.2792	19.2792	19.7959	0.0000	6.2049	6.2049
12 C6	78.11	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13 Benzene	92.13	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14 Toluene	106.17	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15 E-Benzene	106.17	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16 Xylenes	86.18	13.0090	13.0090	13.3626	0.0000	4.0604	4.0604
17 n-C6		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18 2,2,4-Trimethyl p	114.24	30.0114	30.0114	31.0969	0.0000	2.5410	2.5410
19 Pseudo Comp1	96.00	9.5168	9.5168	9.8788	0.0000	0.3550	0.3550
20 Pseudo Comp2	121.00	1.9363	1.9363	2.0117	0.0000	0.0272	0.0272
21 Pseudo Comp3	134.00	0.0908	0.0908	0.0944	0.0000	0.0005	0.0005
22 Pseudo Comp4							
E&P TANK							
23 Pseudo Comp5	274.10	0.8119	0.8119	0.8440	0.0000	0.0000	0.0000

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Flash Oil Sales Oil Flash Gas W&S Gas Total

	Chacon Amigos 18					
Emission MW (lb/lbmol):	88.22	88.22	89.32	0.00	60.36	60.36
Stream Mole Ratio:	1.0000	1.0000	0.9620		0.0380	0.0380
Stream Weight Ratio:	88.22	88.22	85.92		2.29	2.29
Total Emission (ton):					0.965	0.965
Heating Value (BTU/scf):					3373.40	3373.40
Gas Gravity (Gas/Air):					2.08	2.08
Bubble Pt. @100F (psia):	12.71	12.71	7.91			
RVP @100F (psia):	10.45	10.45	7.69			
Spec. Gravity @100F:	0.68	0.68	0.68			

BTU Report

	Sample Information		
Sample Name	Chacon Amigos 18	Flowing Temp	
Station Number		Flowing Pressure	
FMP/Lease Number		Flow Rate	
Taken By/Lab Name	Justin Barker/DJR Lab	Heat Trace used	No
Operator	Justin Barker	Type of Sample	Spot
Method Name		Sample Method	Purge and fill
Injection Date	7/11/2018 9:50AM		
Reporte Date	7/11/2018 9:50AM		
Data Source-Make & Model			
Date of Calibration			

Component Results

Component Name	Mole %	Weight Percent	GPM (Gal./1000 scf)	Gross HV (dry) (BTU/Ideal cu. Ft)	Relative Gas Density
Propane	12.37%	20.96%	3.408	312.05	0.1884
i-Butane	1.35%	3.02%	0.442	44.04	0.0271
n-Butane	2.36%	5.27%	0.7438	77.17	0.0474
i-Pentane	0.47%	1.31%	0.1732	19	0.0118
n-Pentane	0.32%	0.89%	0.1164	12.9	0.008
Nitrogen	7.36%	7.92%	0	0	0.0712
Methane	51.42%	31.69%	0	520.53	0.2848
Carbon Dioxide	0.51%	0.87%	0	0	0.0078
Ethane	23.62%	27.29%	6.3161	419.03	0.2453
C9+	0.01%	0.07%	0.0076	0.94	0.0006
Hexanes	0.08%	0.26%	0.0317	3.68	0.0023
Heptanes	0.07%	0.27%	0.0325	3.89	0.0024
Octanes	0.04%	0.19%	0.0219	2.68	0.0017
TOTAL	100.00%	100.00%	11.2933	1415.9	0.8987

Results Summary

Results

Total Raw Mole % (Dry)	
Total Unnormalized Mole Percent	100.461
Pressure Base (psie)	14.73000 PSIA
Temperature Base	60.0 Deg.F
Water Mole %	
Gross Heating Value (BTU/ Ideal scf)	1423.33
Gross Heating Value (BTU/ Real scf)	1398.565
Relative Density Real	0.9031
Compressibility (Z) Factor	0.99478
Total GPM	11.2933

Attachment C

Federal Implementation Plan Requirements

The following is a review of the Federal Rules referenced in the FIP for True Minor Sources in Indian Country in the Oil and Natural Gas Production and Natural Gas Processing Segments of the Oil and Natural Gas Sector that apply, or potentially apply, to the equipment at the Bonanza 14, 15 & Chacon Amigos 17, 18 Site:

40 CFR Part 60, Subpart Kb – The tanks included in this application (Units: TK-1 through TK-10) all have a capacity of 400-bbl (16,800 gallons) each, which is below the applicability threshold of 75 m³ (19,813 gallons) under Subpart Kb; therefore, this requirement is not applicable to the storage tanks.

40 CFR Part 60, Subpart JJJJ – The engine included in this application (Unit: 1) must comply with the requirements of Subpart JJJJ as construction was commenced after June 12, 2006 and the engine was manufactured after January 1, 2011. The engine must meet emission standards for NO_x, CO, and VOCs included in Table 1 of Subpart JJJJ for non-emergency spark ignition natural gas engines with a maximum engine power between 100-hp and 500-hp.

40 CFR Part 60, Subpart OOOOa –

Subpart OOOOa will be applicable to:

- The fugitive emission sources (Unit: FUG) at this site as construction of this unit commenced after September 18, 2015 and will be located at a compressor station and will comply with Subpart OOOOa as stated under 40 CFR §60.5365a(j).

Subpart OOOOa will not be applicable to the following sources:

- The storage tanks (Units: TK-1 through TK-10) as construction of these units commenced after September 18, 2015 but the tanks will have a potential for VOC emissions less than 6 tpy; therefore, Subpart OOOOa will not apply to the tanks onsite.
- The compressor associated with the engine (Unit: 1), as construction of this unit commenced after September 18, 2015, but the engine will be located adjacent to a well site and will be servicing more than one well site, is therefore not considered an affected facility as stated under 40 CFR §60.5365a(c).

40 CFR Part 63, Subpart ZZZZ – The engine will meet the requirements of Subpart ZZZZ but meeting the requirements of 40 CFR Part 60, Subpart JJJJ for a new RICE located at an area source of HAP emissions as stated under 40 CFR §63.6590(c)(1).