ADEQ PERMIT RENEWAL APPLICATION

ADEQ Class I Permit No. 77319

Transwestern Pipeline Company, LLC.
Compressor Station (Kingman)

TRINITY CONSULTANTS
702 East Osborn Road, Ste 160
Phoenix, AZ 85014
(602) 274-2900

April 2024

Project 240301.0039

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1. EXECUTIVE SUMMARY

Transwestern Pipeline Company, LLC (Transwestern) operates the Kingman Compressor Station (the Facility) which is a natural gas pipeline compressor station (Standard Industrial Classification code 4922) located in Mohave County approximately 40 miles east of Kingman, Arizona. The Kingman Compressor Station provides additional compression to the Transwestern Pipeline, a natural gas transmission system that connects supplies throughout Texas, New Mexico, Colorado, and Arizona. Mohave County is designated as an attainment area for all criteria pollutants. The facility is currently operating under Arizona Department of Environmental Quality (ADEQ) Class I Permit No. 77319.

Permit No. 77319 expires on October 29th, 2024 for Facility. Pursuant to Arizona Administrative Code (A.A.C.), R18-2-304.D.2, a timely application is one that is submitted at least six months, but not more than 18 months, prior to the date of the permit expiration. As such, Transwestern must submit a permit renewal application by April 29th, 2024. Transwestern is submitting this permit renewal application to meet the required timeline. Application forms, including the standard permit application form, emissions sources and equipment list forms, and an application administrative completeness checklist, are included in Section 2 of this application.

The natural gas compressor station consists of the following significant emission sources[1]:

- One (1) 385.8 MMBtu/hr (40,916 hp) natural gas-fired GE LM2500 turbine compressor (Unit ID No. 104);
- One (1) 4.35 MMBtu/hr (529 hp) natural gas-fired Caterpillar G3508 emergency generator engine (Unit ID No. 123)

Transwestern is not proposing to make any physical changes or changes in the method of operation at the Facility as part of this renewal application. However, Transwestern is proposing to update the historical representation of Hazardous Air Pollutants (HAP) emissions generated at the Facility as part of this renewal application. Previously, only formaldehyde emissions were quantified as part of the site HAP emissions at the Facility. Transwestern has quantified all other HAPs associated with fuel combustion in addition to formaldehyde.

Historically, the Facility has not quantified emissions from startup, shutdown, and maintenance (SSM). Transwestern is proposing to quantify emissions from SSM. Additionally, Transwestern is proposing to classify emission related to the mist extractor and condensate tank, as insignificant pursuant to R18-2-101.68.a.iii. Note that Transwestern is not proposing any physical change or change to the method of operation as part of this application.

Transwestern submitted a 7-day notification on November 22nd, 2011 for the replacement of Unit 104 with a unit of the same make and model (i.e., like-kind replacement). As such, Transwestern proposes to revise the equipment list to reflect the serial number below associated with the replacement engine represented by Unit 104. The previous renewal in 2019 did not address this change and it is being incorporated as a part of this renewal. A copy of the letter of notice for each like-kind replacement is contained in Appendix B. No changes in emissions or operations occurred as a result of this action.

Following this renewal, the Facility is still considered a Title V (e.g., Class I) source because the site-wide potential to emit (PTE) of NO_x is greater than major source threshold per A.A.C. R18-2-101.75. This is depicted

[1] Refers to those emission sources which are not considered "insignificant" pursuant to A.A.C. §R18-2-201.

in Table 7-1. The Facility also remains a minor source for Prevention of Significant Deterioration (PSD) purposes following this renewal.

2. ADEQ PERMIT APPLICATION REQUIREMENTS

In accordance with A.A.C. R18-2-304.F, the enclosed application provides the "Standard Class I Permit Application Form" and the information requested in the "Application Packet for Class I Permit" prepared by the ADEQ Air Quality Division. This section includes **Table 2-1** which provides a list of all applicable application components and where they are located in this application.

Table 2-1 Transwestern – ADEQ Permit Application Requirements Checklist

Filing Instructions Number	Information Required	Included in Application			Comments
		Yes	No	N/A	
1	Has the standard application form been completed?	X			Section 3
2	Has the responsible official signed the standard application form?	X			Section 3
3	Has a process description been provided?	X			Section 4
4	Are the facility's emissions documented with all appropriate supporting information?	X			Section 7, Appendix A
5	Is the facility subject to Minor NSR requirements? If the answer is "YES", answer 6a, 6b and 6c as applicable. If the answer is "NO", skip to 7	X			The Facility is subject to minor NSR for NO_X .
6.a	If the facility chooses to implement RACT, is the RACT determination included for the affected pollutants for all affected emission units?			X	No changes are being proposed as a part of this application.
6.b	If the facility chooses to demonstrate compliance with NAAQS by screen modeling, is the modeling analysis included?			X	No changes are being proposed as a part of this application.
6.c	If refined modeling has been conducted, is a comprehensive modeling report along with all modeling files included?			X	
7	Does the application include an equipment list with the type, name, make, model, serial number, maximum rated capacity, and date of manufacture?	X			
8	Does the application include an identification and description of Pollution Controls? (if applicable)			X	The site does not have any pollution controls.

Filing Instructions Number	Information Required	Included in Application			Comments
		Yes	No	N/A	
9	For any application component claimed as confidential, are the requirements of A.R.S. 49-432 and A.A.C. R18-2-305 addressed?			X	The application does not include any confidential information.
10	For any current non-compliance issue, is a compliance schedule attached?			X	The Facility is in compliance with all applicable regulations.
11	For minor permit revision that will make a modification upon submittal of application, has a suggested draft permit been attached?			X	This permit application is for the renewal of Class I permit No. 77319.
12	For major sources, have all applicable requirements been identified?	X			Section 8
13	For major sources, has a CAM applicability analysis been provided? For CAM applicable units, have CAM plans been provided?			X	The Facility is not subject to 40 CFR 64 requirements.
14	For major sources subject to requirements under Article 4 of the A.A.C., have all necessary New Source Review analyses identified in the application been presented?			X	Transwestern is not proposing any physical changes nor changes in the method of operation at the Facility as part of this application.

3. ADEQ STANDARD APPLICATION FORMS

This section presents the forms submitted for the application to renew Title V Permit No. 77319. The Kingman Compressor Station is in compliance with all federal and state applicable requirements and as such no compliance plan submittal is required. Also, there is no proposed change to any compliance method. These forms include the following sections of the ADEQ "Application Packet for a Class I Permit" and a compliance certification signed by a responsible official:

- Section 2.1 – Standard Class I Permit Application Form
- Section 2.2 – Emission Sources
- Section 2.3 – Equipment List

SECTION 2.0

CLASS I PERMIT APPLICATION PACKAGE

SECTION 2.1

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

Air Quality Division

1110 West Washington • Phoenix, AZ 85007 • Phone: (602) 771-2338

STANDARD CLASS I PERMIT APPLICATION FORM

(As required by A.R.S. § 49-426, and Chapter 2, Article 3, Arizona Administrative Code)

1. Permit to be issued to (Business license name of organization that is to receive permit):
   Transwestern Pipeline Company, LLC

2. Mailing Address: 8501 Jefferson St, NE
   City: Albuquerque State: NM ZIP: 87112

3. Name (or names) of Owners/ Principals: David Roybal
   Phone: (618) 638-2701 Fax: Email: David.Roybal@energytransfer.com

4. Name of Owner's Agent: Kerry Egan
   Phone: 505-260-4023 Fax: Email: kerry.egan@energytransfer.com

5. Plant/Site Manager/ Contact Person and Title: Alex Bustos - Operations Manager
   Phone: 505-426-5883 Fax: Email: Alex.Bustos@energytransfer.com

6. Plant Site Name: Kingman Compressor Station

7. Plant Site Location Address: 40 miles east of the city of Kingman on Interstate 40
   City: Kingman County: Mohave Zip Code: 86401
   Indian Reservation (if applicable, which one):
   Latitude/ Longitude, Elevation: 35°12'01"N, 113°21'47"W; 5,063ft
   Section/ Township/ Range: S17 T21N R10W

8. General Nature of Business: Natural Gas Transmission

9. Type of Organization:
   ☒ Corporation ☐ Individual Owner ☐ Partnership ☐ Government Entity (Government Facility Code----------)
   ☐ Other

8. Permit Application Basis: ☐ New Source ☐ Revision ☒ Renewal of Existing Permit
   (Check all that apply.)
   For renewal or modification, include existing permit number (and exp. date): Permit No. 77319, 10/29/2024
   Date of Commencement of Construction or Modification: Existing Source
   Primary Standard Industrial Classification Code: 4922

9. I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by ADEQ as public record. I also attest that I am in compliance with the applicable requirements of the Permit and will continue to comply with such requirements and any future requirements that become effective during the life of the Permit. I will present a certification of compliance to ADEQ no less than annually and more frequently if specified by ADEQ. I further state that I will assume responsibility for the construction, modification,

or operation of the source in accordance with Arizona Administrative Code, Title 18, Chapter 2 and any permit issued thereof.

Signature of Responsible Official: David Roybal

Official Title of Signer: Director of Operations

Typed or Printed Name of Signer: David Roybal

Date: 4-19-24 Telephone Number: (618) 638-2701

SECTION 2.2 - EMISSION SOURCES

PAGE_____OF _____
DATE _____

Estimated "Potential to Emit" per A.A.C. R18-2-101.
Review of applications and issuance of permits will be expedited by supplying all necessary information on this Table.

REGULATED AIR POLLUTANT DATA					EMISSION POINT DISCHARGE PARAMETERS										
EMISSION POINT [1]		CHEMICAL COMPOSITION OF TOTAL STREAM	AIR POLLUTANT EMISSION RATE		UTM COORDINATES OF EMISSION POINT [5]			STACK SOURCES [6]					NONPOINT	
NUMBER	NAME	REGULATED AIR POLLUTANT NAME [2]	#/ HR. [3]	TONS/ YEAR [4]	ZONE	EAST (Mtrs)	NORTH (Mtrs)	HEIGHT ABOVE GROUND (feet)	HEIGHT ABOVE STRUC. (feet)	EXIT DATA			SOURCES [7]		
										DIA (ft.)	VEL. (fps)	TEMP. (°F)	LENGTH (ft.)	WIDTH (ft.)	
See attached emission calculations in Appendix A of the application															

GROUND ELEVATION OF FACILITY ABOVE MEAN SEA LEVEL_____feet
ADEQ STANDARD CONDITIONS ARE 293K AND 101.3 KILOPASCALS (A.A.C. R18-2-101)

****Submit emission calculations spreadsheet with your application****

General Instructions:

1. Identify each emission point with a unique number for this plant site, consistent with emission point identification used on plot plan, previous permits, and Emissions Inventory Questionnaire. Include fugitive emissions. Limit emission point number to eight (8) character spaces. For each emission point use as many lines as necessary to list regulated air pollutant data. Typical emission point names are: heater, vent, boiler, tank, reactor, separator, baghouse, fugitive, etc. Abbreviations are O.K.

2. Components to be listed include regulated air pollutants as defined in A.A.C. R18-2-101. Examples of typical component names are: Carbon Monoxide (CO), Nitrogen Oxides (NO_x), Sulfur Dioxide (SO_2), Volatile Organic Compounds (VOC), particulate matter (PM), particulate less than 10 microns (PM_{10}), etc. Abbreviations are O.K.

3. Pounds per hour (#/HR) is maximum potential emission rate expected by applicant.

4. Tons per year is annual maximum potential emission expected by applicant, which takes into account process operating schedule.

5. As a minimum applicant shall furnish a facility plot plan as described in the filing instructions. UTM coordinates are required only if the source is a major source or is required to perform refined modeling for the purposes of demonstrating compliance with ambient air quality guidelines.

6. Supply additional information as follows if appropriate:
   (a) Stack exit configuration other than a round vertical stack. Show length and width for a rectangular stack. Indicate if horizontal discharge with a note.
   (b) Stack's height above supporting or adjacent structures if structure is within 3 "stack height above the ground" of stack.

7. Dimensions of nonpoint sources as defined in A.A.C. R18-2-101.

SECTION 2.3 - EQUIPMENT LIST

The following table should include all equipment utilized at the facility, and should be completed with all the requested information. Be sure to notate the units (tons/hour, horsepower, etc.) when recording the Maximum Rated Capacity information, the Serial Number and/or the Equipment ID Number. The date of manufacture must be included in order to determine if portions of the facility are NSPS applicable. Make additional copies of this form if necessary.

Submit photographs of the faceplates for all engines listed below. If an engine is certified, please also include a copy of the engine certification with the application. For any newly added equipment, include a copy of the specification sheet. These documents will be used to verify equipment information and determine applicable regulations.

Type of Equipment	Maximum Rated Capacity [1]	Make	Model	Serial Number	Date of Manufacture	Equipment ID Number
See attached equipment list in Section 10 of the application						

[1] For generator sets, enter the maximum rated capacity of the engine rather than the maximum rated capacity of the generator.

SECTION 4.0 - APPLICATION ADMINISTRATIVE COMPLETENESS CHECKLIST

	REQUIREMENT	MEETS REQUIREMENTS			COMMENT
		YES	NO	N/A	
1	Has the standard application form been completed?	X			Section 3
2	Has the responsible official signed the standard application form?	X			Section 3
3	Has a process description been provided?	X			Section 4
4	Are the facility's emissions documented with all appropriate supporting information?	X			Section 7, Appendix A
5	Is the facility subject to Minor NSR requirements? If the answer is "YES", answer 6a, 6b and 6c as applicable. If the answer is "NO", skip to 7.	X			The Facility is subject to mNSR for NOx.
6.a	If the facility chooses to implement RACT, is the RACT determination included for the affected pollutants for all affected emission units?			X	No changes are being proposed as a part of this application.
6.b	If the facility chooses to demonstrate compliance with NAAQS by screen modeling, is the modeling analysis included?			X	No changes are being proposed as a part of this application.
6.c	If refined modeling has been conducted, is a comprehensive modeling report along with all modeling files included?			X	
7	Does the application include an equipment list with the type, name, make, model, serial number, maximum rated capacity, and date of manufacture?	X			Section 10
8	Does the application include an identification and description of Pollution Controls? (if applicable)			X	The site does not have any emission controls.
9	For any application component claimed as confidential, are the requirements of AR.S. 49-432 and A.A.C. R18-2-305 addressed?			X	This application does not contain any confidential information.
10	For any current non-compliance issue, is a compliance schedule attached?			X	The Facility is in compliance with all applicable regulations.
11	For minor permit revision that will make a modification upon submittal of application, has a suggested draft permit been attached?			X	
12	For major sources, have all applicable requirements been identified?	X			Section 8
13	For major sources, has a CAM applicability analysis been provided? For CAM applicable units, have CAM plans been provided?			X	
14	For major sources subject to requirements under Article 4 of the A.A.C., have all necessary New Source Review analyses identified in the application been presented?			X	Transwestern is not proposing any physical or method of operation changes as a part of this renewal.

4. FACILITY DESCRIPTION

4.1 Process Description

The Facility provides additional compression to the Transwestern Pipeline, a natural gas transmission system that connects supplies throughout Texas, New Mexico, Colorado, and Arizona. Natural gas compression is needed to maintain enough pressure in the pipeline to keep the natural gas flowing. This section describes the emission sources associated with operations at the Kingman Compressor Station. A process flow diagram is presented in Section 6.

4.1.1 Natural Gas Compression

Natural gas enters the station via the inlet (suction) line. The inlet gas then passes through an inlet separator where small amounts of entrained liquids are removed by gravitational separation. Any liquid collected is manually dumped, periodically, under pressure to the mist extractor (Unit T6), which results in flashing emissions from the vessel since it is at a lower pressure (atmospheric) than the pressure from the inlet separator. Unit T6 generates minimal emissions and qualifies as an insignificant activity pursuant to R18-2-101.68.a.iii. Any remaining liquids from Unit T6 are transferred periodically into trucks for off-site removal. Alternatively, the liquid can be transferred to a condensate tank (Unit T1) for storage prior to subsequent removal from the site via truck. Unit T1 also qualifies as an insignificant activity pursuant to R18-2-101.68.a.iii. Very little liquid is contained in the gas received at this station, so consequently, very little liquid is separated out from the gas stream for subsequent storage and disposal. Since the collection rate of liquids is so low, rather than be transferred to the condensate tank, these liquids are normally kept in the mist extractor prior to removal from the station. Subsequently, liquids are normally transferred into trucks from the mist extractor rather than from the condensate tank.

The compression process is accomplished with the use of one (1) natural gas fired 40,916 hp General Electric LM2500 turbine (Unit 104) that drives a compressor unit. Following inlet separation, the gas is piped to the single turbine-driven compressor unit (a General Electric LM 2500 turbine, without emission control), where the gas pressure is boosted before the gas exits the station via the discharge line. The station has one (1) Caterpillar G3508 generator (Unit 123) to provide backup power for the facility. The generator is powered by a 529 hp natural gas-fired engine. The generator operates in the event that purchase power from the electric grid is unavailable and periodically for short durations for the purpose of testing and maintenance (T&M).

4.1.2 Ancillary Equipment and Processes

There are also storage tanks (ID T2, T3, T4, T5) at the facility that store mineral oil and oily wastewater. Due to their small capacities, low vapor pressures and low throughputs, these tanks generate minimal emissions and are classified as insignificant activities pursuant to R18-2-101.68.a.iii. Tank capacities are provided in the Equipment List in Section 10.

4.1.3 Startup, Shutdown, and Maintenance Activities

Compressors must periodically be taken offline for maintenance, operational stand-by, malfunctions, or emergency shutdown testing. As part of compressor shutdown, the high-pressure gas remaining within the compressors and between equipment components in the pipework is vented to the atmosphere (i.e., blowdown). Pipeline maintenance activities include periodic "pigging" operations to remove any liquids trapped in the main transmission pipeline. This involves the use of pipeline cleaning devices, known as "pigs". There is a pig catcher/launcher system on site where the pipeline pig can be removed or inserted. Small amounts of

natural gas are released to the atmosphere when the catcher/launcher vessel is opened to remove or insert the pig. In addition, the mist extractor (Unit T6) prevents pipeline liquid droplets from being ejected from the receiver unit when the pipeline pig enters the station.

Operating conditions along the pipeline may determine when non-maintenance related startups and shutdowns occur. Transwestern operates the station and pipeline system in a manner to limit the number of these required non-maintenance events and their associated emissions. These SSM activities result in emissions described in Section 7.

4.2 Process Rates

The station has the nominal capacity to move 1.21 billion cubic feet per day of natural gas through the pipeline. This rate is approximately 50.4 million cubic feet per hour, which is an estimate because capacity is variable, depending on the load on the turbine and the compression provided by stations upstream. It is likely that at times the station will exceed this transmission rate. This capacity is provided for information only and should not be included in the final permit as an operating limitation.

4.3 Hours of Operation

The Facility is capable of operating continuously (8,760 hours/year, 24 hours/day, 365 days/year, and 7 days/week). Potential emissions for the turbine are quantified based on 8,760 hours of operation annually. Transwestern is not requesting the inclusion of alternate operating scenarios for the Facility as part of this renewal permit application.

4.4 Fuel Use Information

The fuel-burning process equipment (turbine compressor engine and generator engines) at the station use natural gas as fuel. The turbine compressor engine burns natural gas fuel at a maximum rate of 385.80 million British thermal units (MMBtu) per hour. The higher heating value of the fuel is estimated to be 1017.8 Btu per cubic foot based on gas quality analysis conducted on October 27, 2023.

The Facility is capable of using 3,350.54 MMscf/year of natural gas for fuel-burning process equipment. **Table 4-1** shows the maximum hourly and annual natural gas use for the combustion equipment operated at the Facility.

Table 4-1 Combustion and Power Generation – Fuel Usage

Process	Maximum Hourly Gas Use (MMscf/hr)	Maximum Annual Gas Use (MMscf/yr)
LM2500 turbine	0.38	3,313.32
G3508 generator	0.0042	37.32
Total	0.38	3,350.54

5. SITE DIAGRAM AND AREA MAP

Figure 5-1 is a location map showing the general location of the Facility. A close-up site map that shows more detail of the area immediately around the station is presented in Figure 5-2. Figure 5-3 is a site diagram that shows details of the layout of the station.

Figure 5-1 Location Map

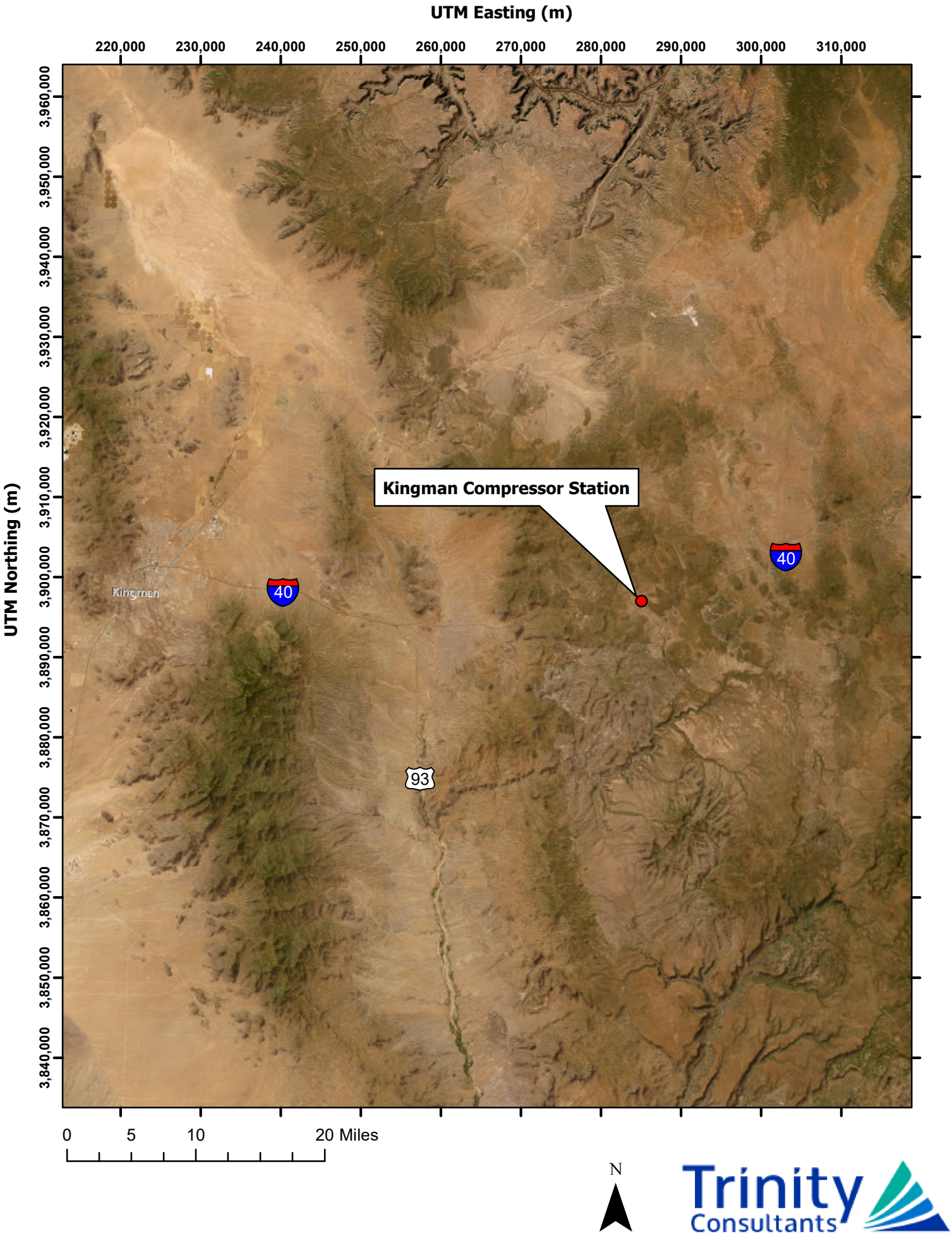
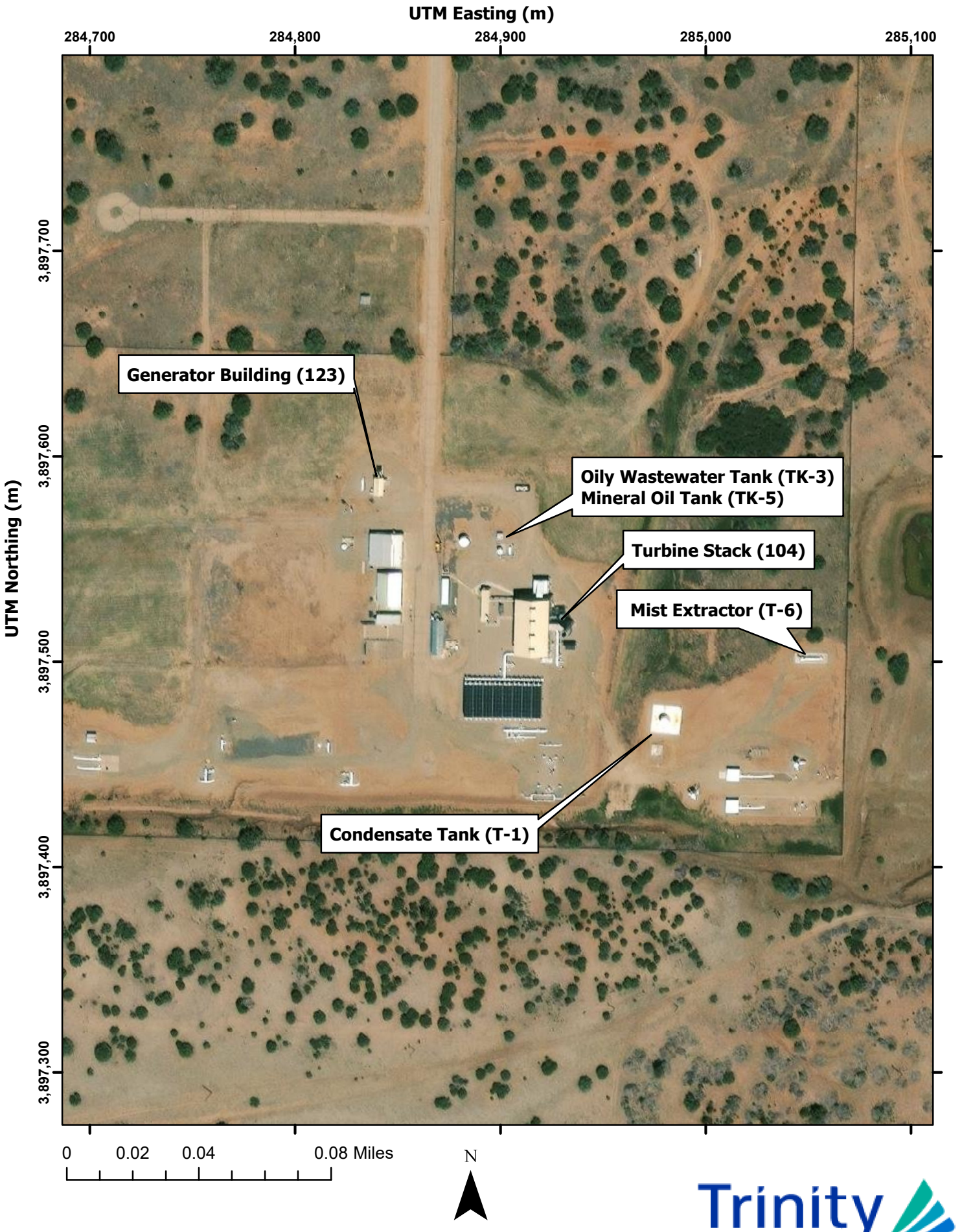

UTM Easting (m)
220,000
230,000
240,000
250,000
260,000
270,000
280,000
290,000
300,000
310,000
UTM Northing (m)
3,960,000
3,950,000
3,940,000
3,930,000
3,920,000
3,910,000
3,900,000
3,890,000
3,880,000
3,870,000
3,860,000
3,850,000
3,840,000
Kingman Compressor Station
Kingman
40
40
93
0
5
10
20 Miles
N
Trinity Consultants
NAD83 / UTM Zone 12N

Figure 5-2 Compressor Station Layout



Trinity Consultants

NAD83 / UTM Zone 12N

Figure 5-3 Site Diagram

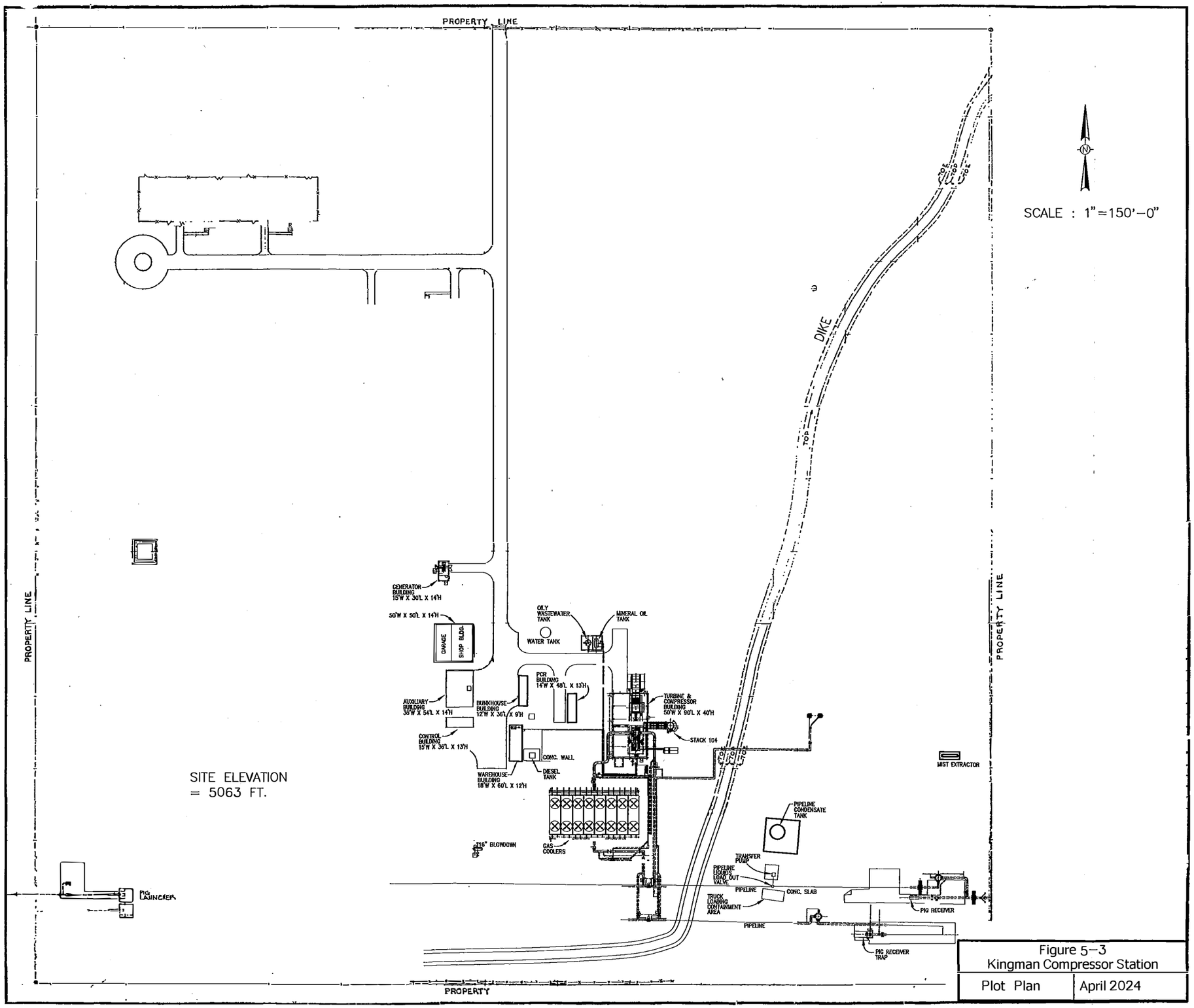


Figure 5-3
Kingman Compressor Station

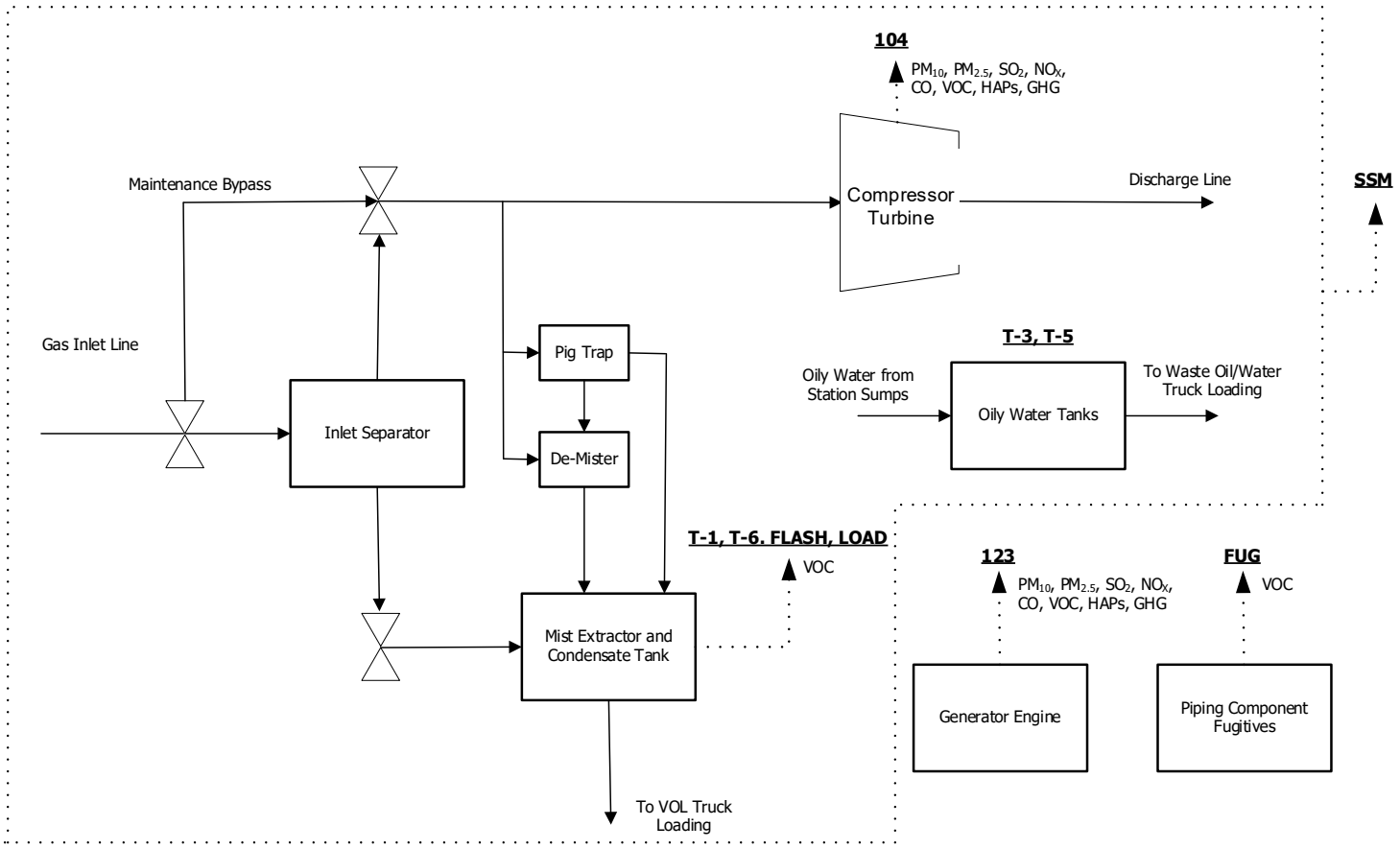
Plot Plan	April 2024

6. PROCESS FLOW DIAGRAM

This section presents a process flow diagram (PFD) in Figure 6-1, which shows the flow of natural gas and liquids through the station. This diagram supplements the process description discussed in Section 4.

In Section 4, it is outlined that any liquid in the mist extractor can be either loaded out to trucks for off-site removal or transferred to the condensate tank (T1) for storage and subsequent loadout into trucks for removal. In the PFD, pipeline liquids are transferred from the inlet separator or from pigging operations to the mist extractor. Liquids collected, mist extractor, and condensate tank are represented together for these processes.

Figure 6-1 Process Flow Diagram



Legend

Material Flow

Air Emissions

Transwestern Pipeline Company, LLC	
Process Flow Diagram	
Trinity Consultants	April 2024

7. EMISSION CALCULATIONS

The Facility is a source of emissions of the following air pollutants:

- Particulate matter (PM);
- Particulate matter with a diameter of 10 microns or less (PM_{10});
- Particulate matter with a diameter of 2.5 microns or less ($PM_{2.5}$);
- Nitrogen oxides (NO_x);
- Carbon monoxide (CO);
- Sulfur dioxide (SO_2);
- Volatile Organic Compounds (VOCs);
- Hazardous Air Pollutants (HAPs); and
- Greenhouse gases (GHG).

The methodologies used to calculate the PTE associated with the Facility emission units are described in the following sections. The emission calculation methodologies used for all equipment remain unchanged since the last permit renewal application, submitted in 2019, unless otherwise specified. Detailed emission calculations can be found in Appendix A. Table 7-1 contains a summary of the facility-wide PTE.

7.1 Calculation Methodologies

7.1.1 Natural Gas-Fired Turbine

The General Electric LM2500 turbine (unit 104) is a natural gas-fired turbine. Potential emissions from the turbine are based on the currently permitted levels. For NO_x, CO, and total hydrocarbons (THC), maximum hourly emissions are based on the maximum of the hourly emission rates at various temperatures and turbine loading conditions. Annual emissions of these contaminants are based on the maximum emissions at any load. Potential annual emissions are calculated assuming that the turbine runs at maximum load for 100% of the time, and then increased by a 15 percent safety factor to be conservative. Emissions of volatile organic compounds (VOC) are determined by multiplying the THC emissions level by a factor of 0.1, which reflects an assumption that VOCs compose 10 percent of THC.

Potential turbine emissions of PM, SO_2, and HAPs are calculated using emission factors from U.S. AP-42, Section 3.1, Tables 3.1-2a (for PM and SO_2), and 3.1-3 (for HAPs). Potential annual emissions are calculated using the maximum heat rate and maximum shaft horsepower rating.

GHG pollutants expected to be emitted from the turbine include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Standard emission factors for CO_2, N_2O and CH_4 are provided in 40 CFR Part 98, Subpart C, Table C-1 and Table C-2. The global warming potential for each relevant pollutant is obtained from 40 CFR Part 98, Subpart A, Table A-1. Calculations for GHG pollutants are based on the emission factor for each GHG pollutant, relevant global warming potential, annual hours of operation, and the maximum power of the gas turbine.

7.1.2 Natural Gas-Fired Generator Engines

The station has one Caterpillar G3508 engine-driven generator to provide emergency back-up power for the Facility. This engine is a 529-hp, natural gas-fired four-stroke, lean-burn engine. Potential emissions are based on currently permitted levels. Hourly emission factors for NO_x, CO, and non-methane hydrocarbons (NMHC)

are taken from vendor-provided factors, consistent with the 2019 permit renewal application. Emission factors for PM, SO_2, and HAPs are taken from AP-42, Section 3.2, Table 3.2-2.

Annual potential emissions for the generator engines are calculated from the hourly emissions data and an assumed total number of annual hours of operation. The generator engine only operates for a maximum of 500 hours/year.

Calculations for GHG pollutants are calculated using the methodology of 40 CFE Part 98, Subpart C. Emissions are based on the emission factor for each GHG pollutant, corresponding global warming potential, annual hours of operation, and the maximum engine inlet horsepower. Total emissions are presented as carbon dioxide equivalent in tons per year.

7.2 SSM Emissions

Compressors must periodically be taken offline for maintenance, operational stand-by, malfunctions, or emergency shutdown testing. As part of compressor shutdown, the high-pressure gas remaining within the compressors and between equipment components in the pipework is vented to the atmosphere (i.e., blowdown), resulting in VOC emissions. Maximum SSM emissions from the Facility were estimated using the maximum possible volume of gas released and a representative 2023 gas analysis as provided in Appendix A.

7.3 Flashing

In the main line pipeline, small amounts of liquids are transported. Each compressor station is equipped with scrubbers that knock out the liquids and collect them in basins with a valve at the bottom. Any liquids collected are manually dumped under pressure to the mist extractor, which results in flashing emissions from this vessel since it is at a lower pressure (atmospheric pressure) than the pressure inside the inlet separator. Flashing emissions were estimated using Vasquez-Beggs Solution Oil/Gas Ratio Correlation Method.

7.4 Truck Loading Emissions

Loading emissions are calculated using methodology contained in AP-42, Section 5.2-2 (Equation 1). The annual loading throughput is based on an average of 1 barrel of pipeline liquids loaded daily for each day of the year, resulting in an annual throughput of 15,330 gallons. The temperature and pressure of the liquid loaded are taken from AP-42 Section 7.1, Tables 7.1-7 and Table 7.1-2, respectively. The condensate was based on gasoline with a Reid Vapor Pressure (RVP) of 10. A saturation factor (S) of 0.6 was used in the calculations to reflect submerged filling of the tank and dedicated normal service for the loading operation.

7.5 Insignificant and Trivial Activities

The Facility generates insignificant and trivial emissions from various sources. Pursuant to R18-2-304.F.8, the application does not need to include emissions data regarding insignificant activities. Furthermore, R18-2-101.146 states that trivial activities may be omitted from a permit application. However, a description of insignificant trivial emission source calculation methodologies provided below for informational purposes, to assist ADEQ in its review of the permit application.

7.5.1 Condensate Tank and Mist Extractor

Potential emissions from the condensate tank and mist extractor were calculated using TankESP software. A product of gasoline with a Reid vapor pressure of 6.0 pounds per square inch was used to simulate condensate

in the TankESP runs for the condensate tank and the mist extractor. The annual condensate throughput of 15,330 gallons per year was based on an assumed daily throughput of 1 barrel per day for the entire year for both the condensate tank and the mist extractor. These emissions can occur at either the condensate tank or the mist extractor, depending on the current configuration of the station.

7.5.2 Equipment Component Fugitive Emissions

Fugitive VOC emissions are released from piping equipment components including valves and flanges. Emissions are consistent with the 2019 permit renewal application and calculated based on estimated component counts for the station and appropriate emission factors. The source for emission factors used is EPA-453/R-95-017, *Protocol for Equipment Leak Emission Estimates*, Table 2-4 (Oil and Gas Production Operations Average Emission Factors).

7.6 Potential-to-Emit Summary

Table 7-1 summarizes the PTE emissions from the Facility.

Table 7-1 Potential-to-Emit Summary

Description	Unit ID	CO	NO_X	$PM_{10}/PM_{2.5}$	SO_2	VOC	Total HAPs	Single HAP (Formaldehyde)	CO_2e
		(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)
GE LM2500	104	85.13	140.03	12.83	6.61	2.97	1.74	1.20	197,724
Caterpillar 3508	123	0.53	0.58	0.01	0.00	0.10	0.08	0.06	127
Flashing	Flash	-	-	-	-	7.14	-		-
Startup, Shutdown, & Maintenance	SSM					2.53			
Condensate Loading	LOAD	-	-	-	-	0.04	-		-
Insignificant Emissions[1]									
Piping Component Emissions	FUG	-	-	-	-	0.43	-		-
Condensate Tank	T1	-	-	-	-	0.70	-		-
Mist Extractor	T6	-	-	-	-	0.11	-		-
Total		**85.65**	**140.61**	**12.84**	**6.61**	**12.78**	**1.81**	**1.26**	**197,851**
Class I Title V Thresholds[2]		**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**25.00**	**10.00**	**100,000**
Does the Facility-wide Significant Source PTE Exceed Title V Major Source Thresholds?		**No**	**Yes**	**No**	**No**	**No**	**No**	**No**	**Yes**

[1] Insignificant Activity as defined in Arizona Administrative Code (A.A.C) R18-2-101.68.a.iii

[2] Per A.A.C. R18-2-101.75 - Definition of "Major Source"

8. INSIGNIFICANT AND TRIVIAL ACTIVITIES

In addition to the emissions units detailed in other parts of this application, Transwestern may conduct any of the following non-exclusive insignificant and trivial activities at the Facility. Activities which are considered "insignificant" pursuant to A.A.C. R18-2-101.68. Similarly, proposed activities which are considered "trivial" pursuant to A.A.C. R18-2-101.146.

8.1 Insignificant Activities

- Liquid Storage and Piping
    - Petroleum product storage tanks containing the following substances, provided Transwestern lists and identifies the contents of each tank with a volume of 350 gallons or more and provides threshold values for throughput or capacity or both for each such tank: diesel fuels and fuel oil in storage tanks with capacity of 40,000 gallons or less, lubricating oil, transformer oil, and used oil;
    - Gasoline storage tanks with capacity of 10,000 gallons or less.
    - Storage and piping of natural gas, butane, propane, or liquefied petroleum gas, provided that Transwestern lists and identifies the contents of each stationary storage vessel with a volume of 350 gallons or more and provides threshold values for throughput or capacity or both for each such vessel;
    - Storage and handling of drums or other transportable containers where the containers are sealed during storage, and covered during loading and unloading, including containers of waste and used oil regulated under RCRA. Transwestern must provide a description of material in the containers and the approximate amount stored;
        - Facility operations will utilize transportable containers in the form of 55 gallon steel drums. The contents of the drums will include: Lubricating Oil (both new and used), Coolant (both new and used), Pipeline Corrosion Inhibitor, and other chemicals as needed. Transwestern attempts to minimize the number of drums kept onsite at any given time, limiting storage to only that which is required for normal operations. Typically less than ten drums of each individual chemical will be kept onsite at any time. Containers are kept covered or in containment.
        - At times transportable containers will be used to collect waste regulated under RCRA. These containers may include 55 gallon steel drums, as well as chemical totes (240 – 500 gallons). The timing of collection and the number of containers onsite is dependent entirely on the generating activity, which tends to be pipeline cleaning operations. The number of drums kept onsite, and the length of storage is kept to a minimum as required by the applicable RCRA regulations.
    - Storage tanks of any size containing exclusively soaps, detergents, waxes, greases, aqueous salt solutions, aqueous solutions of acids that are not regulated air pollutants, or aqueous caustic solutions, provided Transwestern specifies the contents of each storage tank with a volume of 350 gallons or more;
        - The facility may utilize soaps/detergents for cleaning activity. If these chemicals are brought onsite, they will be in transportable containers (i.e., drums or totes) and are not stored in larger tanks.
- Sampling and Testing
    - Individual sampling points, analyzers, and process instrumentation, whose operation may result in emissions but that are not regulated as emission units;

        - Transwestern's measurement personnel does conduct routine sampling of the gas stream at the location. There is a Gas Chromatograph in use at the site. Emissions are de minimis and not regulated.
- Ancillary Non-Industrial Activities
    - General office activities, such as paper shredding, copying, photographic activities, and blueprinting, but not to include incineration;
    - Use of consumer products, including hazardous substances where the product is used in the same manner as normal consumer use;
    - Activities directly used in the diagnosis and treatment of disease, injury or other medical condition;
- Miscellaneous Activities
    - Installation and operation of potable, process and wastewater observation wells, including drilling, pumping, filtering apparatus;
    - Transformer vents.

8.2 Trivial Activities

- Low-Emitting Combustion
    - Combustion emissions from propulsion of mobile sources;
    - Portable electrical generators that can be moved by hand from one location to another.
- Low- Or Non-Emitting Industrial Activites
    - Hand-held or manually operated equipment used for buffing, polishing, carving, cutting, drilling, sawing, grinding, turning, routing or machining of precision parts and metals;
    - Brazing, soldering, and welding equipment and cutting torches related to manufacturing and construction activities that do not result in emission of HAP metals;
    - Brazing, soldering, and welding equipment and cutting torches directly related to plant maintenance and upkeep and repair or maintenance shop activities that emit HAP metals based on size or production level thresholds
    - Drop hammers or hydraulic presses for forging or metalworking;
    - Air compressors and pneumatically operated equipment, including hand tools;
    - Batteries and battery charging stations, except at battery manufacturing plants;
    - Process water filtration systems and demineralizers;
    - Demineralized water tanks and demineralizer vents;
    - Oxygen scavenging or de-aeration of water;
    - Steam vents and safety relief valves;
    - Use of vacuum trucks and high pressure washer/cleaning equipment within the stationary source boundaries for cleanup and in-source transfer of liquids and slurried solids to wastewater treatment units or conveyances;
    - Equipment using water, water and soap or detergent, or a suspension of abrasives in water for purposes of cleaning or finishing;
    - Electric motors;
- Repair and maintenance;
    - Janitorial services;
    - Plant and building maintenance and upkeep activities, including grounds-keeping, general repairs, cleaning, painting, welding, plumbing, re-tarring roofs, installing insulation, and paving parking lots;
    - Sanding of streets and roads to abate traffic hazards caused by ice and snow;
- Incidental, Non-Industrial Activities

    - Air-conditioning units used for human comfort that do not have applicable requirements under Title VI of the Act;
    - Ventilating units used for human comfort;
    - General office activities, such as paper shredding, copying, photographic activities, pencil sharpening and blueprinting;
    - Bathroom and toilet vent emissions;
    - Use of consumer products, including hazardous substances as that term is defined in the Federal Hazardous Substances Act (15 U.S.C. 1261 et seq.) where the product is used at a source in the same manner as normal consumer use;
    - Circuit breakers;
- Storage, Piping and Packaging
    - Storage tanks, vessels, and containers holding or storing liquid substances that will not emit any VOC or HAP;
    - Storage cabinets for flammable products;
    - Natural gas pressure regulator vents;
- Sampling and Testing
    - Vents from continuous emissions monitors and other analyzers;
    - Bench-scale laboratory equipment used for physical or chemical analysis, but not laboratory fume hoods or vents;
    - Equipment used for quality control, quality assurance, or inspection purposes, including sampling equipment used to withdraw materials for analysis;
    - Hydraulic and hydrostatic testing equipment;
    - Individual sampling points, analyzers, and process instrumentation, whose operation may result in emissions but that are not regulated as emission units;
- Safety Activities
    - Fire suppression systems;
    - Emergency road flares; Filter draining

9. REGULATORY APPLICABILITY ANALYSIS

The Facility is currently subject to certain federal, state, and local air regulations. The following sections provide a summary of requirements that are applicable to the Facility.

9.1 Permitting Program Applicability

9.1.1 Title V Applicability

The requirements of the federal Title V operating permit program are contained in 40 CFR Part 70. The major source thresholds for the Title V program are 100 tpy for each criteria pollutant, 10 tpy of any single hazardous air pollutant (HAP), and 25 tpy of any combination of HAPs. As noted in **Table 7-1**, the Facility-wide PTE of NO_x exceeds the applicable Title V thresholds and the Facility remains a Class I source (i.e., a major source for Title V purposes).

9.1.2 Major NSR Applicability

There are no physical changes nor changes in the method of operation to the emission sources at the Facility being proposed in this permit renewal application. Hence, major New Source Review (NSR) is not applicable.

9.2 Potentially Applicable Requirements

There are no physical changes or changes in the method of operation to the emission sources at the Facility proposed in this permit renewal application. The purpose of this section is to identify new or changed applicable requirements to the Facility resulting from regulation amendments that took place since the permit was last revised.

9.2.1 New Source Performance Standards

New Source Performance Standards (NSPS) are located in 40 CFR Part 60 and require new, modified, or reconstructed sources to control emissions to the level achievable by the best demonstrated technology as specified in the applicable provisions. All existing NSPS requirements, summarized below in Table 9-1, will continue to apply to the facility.

- Subpart A – General Provisions.
- Subpart GG – Standards of Performance for Stationary Gas Turbines.
- Subpart OOOO– Standards of Performance for Crude Oil and Natural Gas Facilities for Which Construction, Modification, or Reconstruction Commenced After August 23, 2011, and on or Before September 18, 2015
- Subpart OOOOa– Standards of Performance for Crude Oil and Natural Gas Facilities for Which Construction, Modification, or Reconstruction Commenced After September 18, 2015
- Subpart OOOOb– Standards of Performance for Crude Oil and Natural Gas Facilities for Which Construction, Modification, or Reconstruction Commenced After December 6, 2022
- Subpart JJJJ – Stationary Spark Ignition Internal Combustion Engines
- 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

- 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

9.2.2 National Emission Standards for Hazardous Air Pollutants (NESHAP)

National Emission Standards for Hazardous Air Pollutants (NESHAP) are located in 40 CFR Part 63. A facility that is a major source of HAPs is defined as having PTE emissions greater than 25 tpy of total HAPs and/or 10 tpy of a single HAP. Facilities with a potential to emit HAP at an amount less than the major source thresholds are otherwise considered an "area source." The NESHAP allowable emission limits are most often established on the basis of a maximum achievable control technology (MACT) determination for the particular source. The NESHAP apply to sources in specifically regulated industrial source categories (Clean Air Act [CAA] §112(d)) or on a case-by-case basis (CAA §112(g)) for facilities not regulated as a specific industrial source type.

The Facility is classified as an area source of HAPs since potential HAP emissions less than the major source thresholds. All existing NESHAP requirements, summarized below in Table 9-1, will continue to apply to the facility.

- 40 CFR Part 63, Subpart A – General Provisions.
- 40 CFR Part 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

9.3 Existing Applicable Requirements

Table 9-1 summarizes existing applicable requirements contained in the current Facility permit.

Table 9-1 Regulatory Applicability and Compliance Demonstration

Description	Applicable Requirement	Discussion
Stationary Gas Turbine	40 CFR 60 Subpart GG	These standards apply to stationary gas turbines. The turbine was manufactured in year 2001; therefore, this subpart is applicable to the turbine. An annual stack test is conducted to demonstrate compliance with emission limits.
Internal Combustion Engine	40 CFR 60, Subpart JJJJ	All engines used at the station were manufactured prior to year 2001; therefore, they are not new engines and not subject to this subpart. This subpart is applicable to engines manufactured after June 12, 2006.
Storage Vessels for Petroleum Liquids	40 CFR 60, Subpart Ka	These standards apply to petroleum liquid storage vessels with a capacity greater than 40,000 gallons. The storage vessels at the facility are below the 40,000 gallons; therefore the Facility is not subject to this subpart.
Storage Vessels for Petroleum Liquids	40 CFR 60, Subpart Kb	These standards apply to petroleum liquid storage vessels with a capacity greater than 75 m^3 (~19,812 gallons). All tanks aside from the condensate tank are well below 75 m^3 and are not subject to this subpart. Pursuant to §60.110b.d(4), vessels with a design capacity less than 42,000 gallons which are used for petroleum or condensate stored, processed, or treated prior to custody transfer are exempt from this subpart. The condensate tank is prior to custody transfer and below the 42,000 gallons, as such, the condensate tank is not subject to this subpart.
Oil and Gas Transmission	40 CFR 60, Subpart OOOO	This subpart applies to stations constructed or modified after August 23, 2011. The Facility was constructed before this date and has not been modified since that date. In particular, tanks at the Facility (ID Nos. T1 and T6) that are potentially subject to this regulation were installed well before August 23, 2011. Therefore, per §60.5365, this subpart does not apply and Transwestern requests a permit shield relative to this subpart.
Oil and Gas Transmission	40 CFR 60, Subpart OOOOa	This subpart applies to stations constructed or modified after September 18, 2015. The Facility was constructed before this date and has not been modified since that date. In particular, tanks at the station (ID Nos. T1 and T6) that are potentially subject to this regulation were installed well before September 18, 2015. Therefore, per §60.5365a, this subpart does not apply.
Natural Gas Fired Stationary Reciprocating Internal Combustion Engines	40 CFR 63 Subpart ZZZZ	These standards are applicable to natural gas fired generators. The G3508 generator engine is an existing four-stroke, lean-burn engine and is subject to operating, monitoring, and record keeping requirements of this subpart per §63.6603(a) and (f) and Table 2d for remote engines. The station will comply with these requirements.
Open Burning	A.A.C. R18-2-602	The Facility personnel do not conduct open burning.

Description	Applicable Requirement	Discussion
Open Areas	A.A.C. R18-2-604	Personnel drive vehicles at moderate speeds on unpaved surfaces and areas.
Roadways	A.A.C. R18-2-605	The roadways at the Facility are all paved. Personnel drive at moderate speeds.
Fugitive Dust Sources	A.A.C. R18-2-Article 6 A.A.A. R18-2-702	These standards are applicable to all fugitive dust sources at the facility.
Abrasive Blasting	A.A.C R18-2-702	These standards are applicable to any abrasive blasting operation.
Standards for Stationary Rotating Machinery	A.A.C R18-2-719	The generator engine is subject to and will comply with the particulate emission limitation of R18-2-719.C.1, visible emission standard of R18-2-719.E, and the reporting and record keeping requirements of R18-2-719.I and R18-2-719.J.
Spray Painting	A.A.C. R18-2-702 A.A.C. R18-2-727	These standards are applicable to any spray-painting operation.
Mobile Sources	A.A.C. R18-2-802	Off-road machinery opacity is maintained below 40 percent based on visual observations.
Turbine NO_X, SO_2	A.A.C. R18-2-901.40	All annual emission tests demonstrate compliance with NOx standard. All sulfur monitoring has demonstrated compliance with the sulfur dioxide limit.
Demolition/renovation operations	A.A.C. R18-2-1101.A.8	This standard is applicable to any asbestos related demolition or renovation operations.
Natural Gas NESHAP	A.A.C. R18-11-1101.47	The affected unit in this NESHAP is a glycol dehydrator. This station does not have a glycol dehydrator; therefore, this standard does not apply to the Facility.
Turbine MACT	R18-11-1101.82	The Facility is not a major source of HAPs; therefore, this rule is not applicable.

9.4 Compliance Assurance Monitoring Applicability Analysis

Compliance assurance monitoring (CAM) requirements apply to an emissions unit at a major source if the unit meets all three of the following criteria:

1. The emissions unit is subject to an emission limitation or standard for an air pollutant (or surrogate thereof) in an applicable requirement.

2. The emission unit uses a control device to achieve compliance with the emission limitation or standard.
3. The emission unit has a pre-control device potential to emit greater than or equal to the quantity (in tons per year) required for a site to be classified as a major source.

Neither the turbine, emergency generator engine, nor any of the other emissions sources at Kingman Compressor Station has a control device; thus, the second criterion above is not met for any source. Therefore, CAM is not applicable to any of the emissions units at the station.

10. EQUIPMENT LIST

All emission units utilized at the Facility are summarized in Table 10-1 below.

Table 10-1 Equipment List

Equipment ID	Type of Equipment	Insignificant Activity (Y/N)	Max Capacity	Make	Model	Serial Number	Date of Manufacture
104	Compressor Turbine	N	40,916 HP	GE	LM2500	642-055	2001
123	Emergency Generator	N	529 HP	Caterpillar	G3508	CTN00166	2002
T1	Condensate Tank	Y	21,000 gal	N/A	N/A	N/A	1992
T2	Lube Oil Tank	Y	1,000 gal	N/A	N/A	N/A	2002
T3	Oily Wastewater Tank	Y	4,200 gal	N/A	N/A	N/A	2002
T4	Diesel Tank	Y	500 gal	N/A	N/A	N/A	2002
T5	Oily Wastewater Tank	Y	2,520 gal	N/A	N/A	N/A	2002
T6	Mist Extractor	Y	1,102 gal	N/A	N/A	N/A	1984
LOAD	Condensate Tank	N	8,400 barrels/yr	N/A	N/A	N/A	~1984
FUG	Piping Fugitives	Y	N/A	N/A	N/A	N/A	N/A

11. PERMIT PROCESSING FEE

Transwestern understands that the permit renewal processing fee is based on the total actual time spent by ADEQ processing the renewal application at a rate of $196.40 per hour.[2] Upon completion of the permit renewal review, ADEQ will send Transwestern a final bill for the processing fee, which will be paid by Transwestern in a timely manner.

[2] Per ADEQ permit fee schedule, effective November 1, 2023.

12. COMPLIANCE PLAN AND SCHEDULE

As required by Permit 72319, Transwestern is committed to maintaining compliance schedule as follows:

- For applicable requirements with which the source is in compliance at the time of permit issuance.

The facility will continue to comply with all existing applicable requirements.

- For applicable requirements that will become effective during the permit term.

The facility will meet in a timely manner applicable requirements that become effective during the permit term. Transwestern is not presently aware of any particular applicable requirements requiring a more specific future schedule. Furthermore, Transwestern shall submit a compliance certification semiannually which describes the compliance status of the facility with respect to each permit condition.

- A schedule of compliance for sources that are not in compliance with all applicable requirements at the time of permit issuance. Such a schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with any applicable requirements for which the source will be in noncompliance at the time of permit issuance. This compliance schedule shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the source is subject. Any such schedule of compliance shall be supplemental to, and shall not sanction noncompliance with, the applicable requirements on which it is based.

The Facility is currently in compliance with all applicable requirements. Therefore, no compliance schedule is required.

- A schedule for the submission of certified progress reports no less frequently than every 6 months for sources required to have a schedule of compliance to remedy a violation.

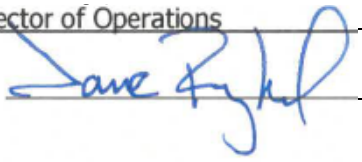
Because a compliance schedule is not required, a schedule for submission of certified progress reports is likewise not required.

13. COMPLIANCE CERTIFICATION

As required by condition VII.A of the permit, the most recent compliance certification for the Facility was submitted to the EPA and ADEQ by the due date of April 29, 2024. This certification identifies the Facility's compliance status with all applicable Title V requirements. Transwestern will continue to comply with all applicable requirements as described in Section 9, and will, in a timely manner, meet any additional applicable requirements that become effective during the permit term.

I certify that based on information and belief formed after reasonable inquiry, the statements and information in this application are true, accurate, and complete.

Name: Dave Roybal
Title: Director of Operations

Signature:  Date: 4-19-24

APPENDIX A. EMISSION CALCULATIONS

Table 1-1. Potential to Emit (PTE) Summary

Description	Unit ID	CO	NO_X	$PM_{10}/PM_{2.5}$	SO_2	VOC	Total HAPs	Single HAP (Formaldehyde)	CO_2e
		(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)
GE LM2500	104	85.13	140.03	12.83	6.61	2.97	1.74	1.20	197,724
Caterpillar 3508	123	0.53	0.58	0.01	0.00	0.10	0.08	0.06	127
Flashing	Flash	-	-	-	-	7.14	-		-
Startup, Shutdown, & Maintenance	SSM					2.53			
Condensate Loading	LOAD	-	-	-	-	0.04	-		-
Insignificant Emissions[1]									
Piping Component Emissions	FUG	-	-	-	-	0.43	-		-
Condensate Tank	T1	-	-	-	-	0.70	-		-
Mist Extractor	T6	-	-	-	-	0.11	-		-
Total		**85.65**	**140.61**	**12.84**	**6.61**	**12.78**	**1.81**	**1.26**	**197,851**
Class I Title V Thresholds[2]		**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**25.00**	**10.00**	**100,000**
Does the Facility-wide Significant Source PTE Exceed Title V Major Source Thresholds?		**No**	**Yes**	**No**	**No**	**No**	**No**	**No**	**Yes**

[1] Insignificant Activity as defined in Arizona Administrative Code (A.A.C) R18-2-101.68.a.iii

[2] Per A.A.C. R18-2-101.75 - Definition of "Major Source"

Table 2-1. Turbine and Generator Operating Parameters

UNIT I.D.	Rated Capacity [1]	Rated Power[1]	TYPE	Total Annual Hours	Fuel Consumption[1]
	(MMBtu/hr)	(hp)		(hr)	(Btu/hp-hr)
104	385.80	40,916	Turbine	8,760	9,429
123	4.35	529	Generator	500	8,214

[1] Maximum heat rates, rated power, and fuel consumption for GE LM2500 turbine listed for emission calculation purposes.

Table 2-2. Combustion Emission Factors

Pollutant	Emission Factors [1,2]			
	Unit 104		Unit 123	
	Value	Units	Value	Units
NO_x - *Maximum hourly*	27.80	lb/hr	2.00	g/hp-hr
CO - *Maximum hourly*	16.90	lb/hr	1.81	g/hp-hr
VOC - *Maximum hourly*	5.90	lb/hr	0.33	g/hp-hr
PM	6.60E-03	lb/MMBtu	9.91E-03	lb/MMBtu
SO_2	3.40E-03	lb/MMBtu	5.88E-04	lb/MMBtu

[1] Unit 104 is a GE LM2500 turbine. NO_x, CO, and THC emission factors based on maximum hourly load. Emission factors for all other pollutants were obtained from U.S. AP-42 Section 3.1 Table 3.1-2a.

[2] Unit 123 is a Caterpillar 3508. NO_x, CO and VOC emission factors (g/hp-hr) from the manufacturer's data. Emission factors for all other pollutants were obtained from U.S. AP-42 Section 3.2 Table 3.2-2, *Uncontrolled Emission Factors For 4-Stroke Lean-Burn Engines (dated 07/00).*

Table 2-3. Summary of Combustion Emissions

UNIT I.D.	Hourly Emissions[1] (lb/hr)					Annual Emissions[3] (tpy)				
	SO_2	NO_x	CO	VOC[2]	$PM_{10}/PM_{2.5}$	SO_2	NO_x	CO	VOC	$PM_{10}/PM_{2.5}$
104	1.31	27.80	16.90	0.59	2.55	5.75	121.76	74.02	2.58	11.15
123	2.56E-03	2.33	2.11	0.38	4.31E-02	6.39E-04	0.58	0.53	0.10	0.01

[1] Hourly SO_2 and PM Emissions (lb/hr) = EF (lb/MMBtu) * Rated Capacity (MMBtu/hr).

[2] For Unit 104, emission factor is for THC, to account for only VOC, the following conversion is used. Hourly VOC Emissions (lb/hr) = THC Proposed Emissions (lb/hr) * 10% VOC Content.

[3] Annual Emissions (tpy) = Hourly Emissions (lb/hr) * Annual Operating Hours (hr/yr) / 2000 (lb/ton).

Table 2-4. Summary of Combustion Emissions - *Applied 15% Safety Factor*

UNIT I.D.	Hourly Emissions[1] (lb/hr)					Annual Emissions[2] (tpy)				
	SO_2	NO_x	CO	VOC	$PM_{10}/PM_{2.5}$	SO_2	NO_x	CO	VOC	$PM_{10}/PM_{2.5}$
104	1.51	31.97	19.44	0.68	2.93	6.61	140.03	85.13	2.97	12.83
123	2.94E-03	2.68	2.43	0.44	0.05	0.001	0.67	0.61	0.11	0.01

1. Applied Safety Factor Hourly Emissions (lb/hr) = Hourly Emissions (lb/hr) * 115%.

2. Applied Safety Factor Annual Emissions (tpy) = Annual Emissions (tpy) * 115%.

Table 2-5. HAP Emissions

Pollutant	Emission Factors (lb/MMBtu)		Emissions			
			Unit 104		Unit 123	
	Turbine [1]	4SRB Engines [2]	Short-Term (lb/hr)	Annual (tpy)	Short-Term (lb/hr)	Annual - Total (tpy)
1,1,2,2-Tetrachloroethane	-	4.00E-05	-	-	1.7E-04	4.35E-05
1,1,2-Trichloroethane	-	3.18E-05	-	-	1.4E-04	3.46E-05
1,3-Butadiene	4.3E-07	2.67E-04	1.7E-04	7.27E-04	1.2E-03	2.90E-04
1,3-Dichloropropene	-	2.64E-05	-	-	1.1E-04	2.87E-05
2-Methylnaphthalene	-	3.32E-05	-	-	1.4E-04	3.61E-05
2,2,4-Trimethlypentane	-	2.50E-04	-	-	1.1E-03	2.72E-04
Acenaphthene	-	1.25E-06	-	-	5.4E-06	1.36E-06
Acenaphthylene	-	5.53E-06	-	-	2.4E-05	6.01E-06
Acetaldehyde	4.0E-05	8.36E-03	1.5E-02	6.76E-02	3.6E-02	9.09E-03
Acrolein	6.4E-06	5.14E-03	2.5E-03	1.08E-02	2.2E-02	5.59E-03
Benzene	1.2E-05	4.40E-04	4.6E-03	2.03E-02	1.9E-03	4.79E-04
Benzo(b)fluoranthene	-	1.66E-07	-	-	7.2E-07	1.81E-07
Benzo(e)pyrene	-	4.15E-07	-	-	1.8E-06	4.51E-07
Benzo(g,h,i)perylene	-	4.14E-07	-	-	1.8E-06	4.50E-07
Biphenyl	-	2.12E-04	-	-	9.2E-04	2.31E-04
Carbon Tetrachloride	-	3.67E-05	-	-	1.6E-04	3.99E-05
Chlorobenzene	-	3.04E-05	-	-	1.3E-04	3.31E-05
Chloroform	-	2.85E-05	-	-	1.2E-04	3.10E-05
Chrysene	-	6.93E-07	-	-	3.0E-06	7.54E-07
Ethylene Dibromide	-	4.43E-05	-	-	1.9E-04	4.82E-05
Ethylbenzene	3.2E-05	3.97E-05	1.2E-02	5.41E-02	1.7E-04	4.32E-05
Fluoranthene	-	1.11E-06	-	-	4.8E-06	1.21E-06
Fluorene	-	5.67E-06	-	-	2.5E-05	6.17E-06
Formaldehyde	7.1E-04	5.28E-02	2.7E-01	1.20E+00	2.3E-01	5.74E-02
Methanol	-	2.50E-03	-	-	1.1E-02	2.72E-03
Methylene Chloride	-	2.00E-05	-	-	8.7E-05	2.18E-05
Naphthalene	1.3E-06	7.44E-05	5.0E-04	2.20E-03	3.2E-04	8.09E-05
n-Hexane	-	1.11E-03	-	-	4.8E-03	1.21E-03
PAH	2.2E-06	2.69E-05	8.5E-04	3.72E-03	1.2E-04	2.93E-05
Phenanthrene	-	1.04E-05	-	-	4.5E-05	1.13E-05
Phenol	-	2.40E-05	-	-	1.0E-04	2.61E-05
Pyrene	-	1.36E-06	-	-	5.9E-06	1.48E-06
Propylene Oxide	2.9E-05	-	1.1E-02	4.90E-02	-	-
Styrene	-	2.36E-05	-	-	1.0E-04	2.57E-05
Toluene	1.3E-04	4.08E-04	5.0E-02	2.20E-01	1.8E-03	4.44E-04
Vinyl Chloride	-	1.49E-05	-	-	6.5E-05	1.62E-05
Xylene	6.4E-05	1.84E-04	2.5E-02	1.08E-01	8.0E-04	2.00E-04
		Total	**0.40**	**1.74**	**0.31**	**0.08**

[1] Per AP-42 Section 3.1 Table 3.1-3, Emission Factors For Hazardous Air Pollutants From Natural Gas-Fired Stationary Gas Turbines (04/00).

[2] Per AP-42 AP-42, Section 3.2 Table 3.2-2, Uncontrolled Emission Factors For 4-Stroke Lean-Burn Engines (dated 07/00).

Table 2-6. GHG Emission Factors

Pollutant	Emission Factor (kg/MMBtu)
CO_2	53.02
CH_4 [1]	0.0010
N_2O [1]	0.0001

[1] Emission factor from 40 CFR Part 98 Subpart C Table C-2.

Table 2-7. Annual GHG Emission Calculations

Unit ID	MMBtu/hr	Annual GHG Emissions (tpy)			
		CO_2	CH_4	N_2O	CO_2e
104	385.80	197,520	3.725	0.373	197,724
123	4.35	127	0.002	0.0002	127
	Total	**197,647**	**3.73**	**0.37**	**197,851**

Table 3-1. Annual Storage Tank Potential to Emit Calculations

UNIT ID	Contents[5]	Tank Diameter[1]	Tank Height[1]	Shell/Roof Color[1]	Capacity [1]	Annual Throughput [1]	Working Losses [2]	Standing Losses [2]	Annual Emissions [3]
		(ft)	(ft)		(gallons)	(gal/yr)	(lb/yr)	(lb/yr)	(tpy)
T1	Condensate	16.00	15.50	White	21,000	15,330	77.91	1,325.324	0.70
T6	Pipeline Liquids[4]	3.00	25.00	White	1,102	15,330	78.50	144.143	0.11

[1] Tank diameter, height, capcaity, throughput, and color based on 2019 permit renewal.

[2] Working and Standing Losses were calculated using TankESP software.

[3] Annual Emissions (tpy) = [Working Losses (lb/yr) + Standing Losses (lb/yr)] / 2000 (lb/ton).

[4] T6 is a mist extractor, which is a piece of process equipment, rather than a tank, that can temporarily store pipeline liquids.

[5] A product of gasoline with a Reid vapor pressure of 6.0 pounds per square inch was used to simulate condensate in the TankESP software runs.

Table 4-1. Truck Loading Potential to Emit Calculations

UNIT ID	Material Loaded	S [1]	Average Temperature [2]	P @ 60°F [3]	M [3]	Average Loading Loss [4]	Annual Throughput [5]	Annual VOC Emissions [6]
			(°F)	(psia)	(lb/lb-mole)	(lb/Mgal)	(gals/yr)	(tpy)
LOAD	Condensate	0.60	56.2	5.20	66	4.97	15,330	0.04

[1] S factor from AP-42 Table 5.2-1 for submerged loading in dedicated service trucks.

[2] Average temperature per AP-42 Table 7.1-7 for Prescott, AZ.

[3] Vapor pressure and vapor molecular weight from AP-42 Table 7.1-2. Condensate based on gasoline with RVP 10.

[4] From AP-42 Section 5.2, Loading Loss (lb/Mgal) = 12.46 * S * P * M / T

[5] Annual throughput conservatively estimsted based on 1 barrel per day for the entire year.

[6] Annual Emissions = (Annual Throughput, gal/yr) * (Maximum Loading Loss, lb/Mgal) / (2,000 ton/yr) / 1000 (gal/Mgal).

Table 5-1. Piping Component Fugitive Emissions

Component	Count[1]	EPA Oil and Gas Factors[2] (lb/hr/comp)	Hours (hr)	VOC Content[3] (wt%)	Hourly Emissions (lb/hr)	Annual Emissions (ton/yr)
Valves:						
Gas/Vapor	400	0.00992	8760	0.7%	2.86E-02	0.13
Flanges:						
Gas/Vapor	1680	0.00086	8760	0.7%	1.04E-02	4.57E-02
Compressors:	1	0.01940	8760	0.7%	1.40E-04	6.13E-04
Relief Valves:	3	0.01940	8760	100.0%	0.06	0.25
				Total VOC:	**0.10**	**0.43**

[1] Number of components based on 2019 permit renewal application.

[2] Emission factors from EPA 453/R-95-017, *Protocol for Equipment Leak Emission Estimates*.

[3] VOC Emissions do not include methane or ethane. Percent VOC from annual extended gas analysis performed 10/27/2023.

Table 6-1. Annual Tank Flashing Potential to Emit Calculations

UNIT ID	Contents	Capacity	Maximum Transfer Rate [1]	Annual VOC Emissions [2]
		(gallons)	(gal/day)	(tpy)
FLASH	Condensate	1,102	42	7.14

1. Because of the small amount of liquids actually collected at the Kingman Station, no or very little liquid is transferred to the main condensate tank. The Mist Extractor occasionally stores liquids and is called a condensate tank in this application. The amount of liquid being handled by the mist extractor is conservatively estimated as 1 barrel (42 gallons) per day for calculation purposes.
2. In the main line pipeline, small amounts of liquids are transported. Each compressor station is equipped with scrubbers that knock out the liquids and collect them in basins with a valve at the bottom. Periodically, the valve is opened briefly and main line pressure (870 psig) blasts the liquid from the basin to the mist extractor for unloading to a truck. Flashing emissions were estimated using Vasquez-Beggs Solution Oil/Gas Ratio Correlation Method

Table 7-1. Startup, Shutdown, Maintenance, and Malfunction Venting Emissions

Equipment	Number of Equipment Type[2]	Number of Events Per Month[1]	Number of Events Per Year[1]	Emissions Per Event[2]				Emissions Per Year	
				Volume (Mcf)		VOC (tons)		VOC (tons)	
				Blowdown	Purge	Blowdown	Purge	Blowdown	Purge
Station ESD =	1	1	12	267	26.7	0.0349	0.0035	0.4188	0.0420
Unit 104 =	1	8	96	120	20	0.0157	0.0026	1.5072	0.2496
Separator/Scrubber Dump =	2	1	24	50	--	0.0080	--	0.1920	--
Pigging Launch/Receiver =	2	1	24	35	3	0.0046	0.0005	0.1104	0.0120
							Total	**2.23**	**0.30**

[1]Annual events account for malfunction and SSM events per unit/equipment type. (i.e., Station ESD, Compressor Blowdown, Scrubber Dump, Pig Launch). Number of events per year conservatively estimated based on number of events per month.
[2] Number of equipment type and emissions per event provided by email by Kerry Egan (Energy Transfer) on March 8th, 2024 and April 18th, 2024.

Gas Analysis

Component	Mole%	Weight%
Hydrogen Sulfide	0.000	0.000
Nitrogen	1.306	2.162
Methane	94.680	89.764
Carbon Dioxide	0.809	2.104
Ethane	2.953	5.248
Propane	0.205	0.534
Iso-Butane	0.015	0.052
n-Butane	0.019	0.065
Iso-Pentane	0.004	0.017
n-Pentane	0.001	0.004
i-Hexane	0.003	0.008
n-Hexane	0.001	0.005
Benzene	0.000	0.000
Cyclohexane	0.001	0.003
i-Heptanes	0.001	0.005
n-Heptane	0.000	0.002
Toluene	0.000	0.002
i-Octanes	0.001	0.007
n-Octane	0.000	0.001
Ethylbenzene	0.000	0.000
Xylenes	0.000	0.002
i-Nonanes	0.000	0.000
n-Nonane	0.000	0.002
Decanes Plus	0.001	0.013
Total	100.00	100.00

[1] Results from annual extended analysis conducted 10/27/2023

TankESP
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

T1 <-- Select a tank from the dropdown list

Identification

User Identification:	T1
City:	Kingman
State:	AZ
Company:	Kingman, AZ
Type of Tank:	FRT (no floating roof)
Description:	Kingman, Arizona

Tank Dimensions

Shell Height (ft):	14.00
Diameter (ft):	16.00
Liquid Height (ft) :	15.00
Avg. Liquid Height (ft):	8.00
Volume (gallons):	21,057.00
Turnovers:	0.73
Net Throughput(gal/yr):	15,330.00
Insulation Condition:	Not Insulated

Paint Characteristics

Shell Color/Shade:	White Paint
Shell Condition	Average
Roof Color/Shade:	White Paint
Roof Condition:	Average

Roof Characteristics

Type:	Column-Supported (Cone)
Height (ft)	0.04
Roof Slope (ft/ft)	0.01

Breather Vent Settings

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

Meteorological Data used in Emissions Calculations: Kingman, AZ (Avg Atmospheric Pressure = 13 psia)

TankESP
Emissions Report - Detail Format
Liquid Contents of Storage Tank

T1 - Vertical Fixed Roof Tank
Kingman, AZ

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg. F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight.	Basis for Vapor Pressure Calculations
Gasoline RVP_X	All	64.99	57.89	72.08	63.64	3.2519	2.8081	3.7511	66.0000			92.00	Option 4: RVP=6, ASTM Slope=3
Benzene									78.1100	0.0180	0.0104	78.11	Option 2: A=6.906, B=1211, C=220.79
Benzo(g,h,i)perylene									276.3300	0.0000	0.0000	276.33	Option 2: A=11.82, B=6580, C=273.15
Cumene {isopropylbenzene}									120.1900	0.0050	0.0001	120.19	Option 2: A=6.929, B=1455.8, C=207.2
Cyclohexane									84.1600	0.0024	0.0014	84.16	Option 2: A=6.845, B=1203.5, C=222.86
Ethylbenzene									106.1700	0.0140	0.0007	106.17	Option 2: A=6.95, B=1419.3, C=212.61
Hexane (n-)									86.1800	0.0100	0.0093	86.18	Option 2: A=6.878, B=1171.5, C=224.37
Iso-octane {2,2,4 trimethylpentane}									114.2300	0.0400	0.0118	114.23	Option 2: A=6.812, B=1257.8, C=220.74
Naphthalene									128.1700	0.0042	0.0000	128.17	Option 2: A=7.146, B=1831.6, C=211.82
PACs {Chrysene}									228.2900	0.0000	0.0000	228.29	Option 2: A=12.32, B=6160, C=273.15
Toluene									92.1400	0.0700	0.0116	92.14	Option 2: A=7.017, B=1377.6, C=222.64
Trimethylbenzene (1,2,4)									120.1900	0.0250	0.0003	120.19	Option 2: A=7.044, B=1573.3, C=208.56
Xylene									106.1700	0.0700	0.0032	106.17	Option 2: A=7.009, B=1462.3, C=215.11

TankESP
Emissions Report - Detail Format
Detail Calculations (AP-42)
T1 - Vertical Fixed Roof Tank
Kingman, AZ

Annual Emission Calculations	
Standing Losses (lb):	1,325.3236
Vapor Space Volume (cu ft):	1,209.0524
Vapor Density (lb/cu ft):	0.0381
Vapor Space Expansion Factor:	0.1447
Vented Vapor Saturation Factor:	0.4357
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	1,209.0524
Tank Diameter (ft):	16.0000
Vapor Space Outage (ft):	6.0133
Tank Shell Height (ft):	14.0000
Average Liquid Height (ft):	8.0000
Roof Outage (ft):	0.0133
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.0133
Roof Height (ft)	0.0400
Roof Slope (ft/ft)	0.0050
Shell Radius (ft):	8.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0381
Vapor Molecular Weight (lb/lb-mole):	66.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (	3.2519
Daily Avg. Liquid Surface Temp. (deg. F):	64.9860
Daily Average Ambient Temp. (deg. F):	62.2849
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.7310
Liquid Bulk Temperature (deg. F):	63.6435
Tank Paint Solar Absorptance (Shell):	0.2500
Tank Paint Solar Absorptance (Roof):	0.2500
Daily Total Solar Insulation Factor (Btu/sqft day):	1,811.5282
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.1447
Daily Vapor Temperature Range (deg. R):	28.3840
Daily Vapor Pressure Range (psia):	0.9429
Breather Vent Press. Setting Range (psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (	3.2519
Vapor Pressure at Daily Minimum Liquid Surface Temperature	2.8081
Vapor Pressure at Daily Maximum Liquid Surface Temperature	3.7511
Daily Avg. Liquid Surface Temp. (deg F):	64.9860
Daily Min. Liquid Surface Temp. (deg F):	57.8900
Daily Max. Liquid Surface Temp. (deg F):	72.0820
Daily Ambient Temp. Range (deg. R):	25.9946
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.4357
Vapor Pressure at Daily Average Liquid Surface Temperature (	3.2519
Vapor Space Outage (ft):	6.0133
Working Losses (lb):	77.9148
Vapor Molecular Weight (lb/lb-mole):	66.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (	3.2519
Annual Net Throughput (gal/yr.):	15,330.0000
Annual Turnovers:	0.7260
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	21,000.0000
Maximum Liquid Height (ft):	15.0000
Tank Diameter (ft):	16.0000
Working Loss Product Factor:	1.0000
Vapor Control Efficiency (%)	0%
Total Losses (lb):	1,403.2384

TankESP
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual
T1 - Vertical Fixed Roof Tank
Kingman, AZ

	Losses(lbs)		
Components	Working loss	Breathing Loss	Total Emissions
Gasoline RVP_X	77.91	1,325.32	1,403.24
Unidentified Components	74.11	1,260.62	1,334.73
Benzene	0.81	13.73	14.53
Benzo(g,h,i)perylene	0.00	0.00	0.00
Cumene {isopropylbenzene}	0.01	0.16	0.17
Cyclohexane	0.11	1.89	2.00
Ethylbenzene	0.06	0.98	1.04
Hexane (n-)	0.73	12.35	13.08
Iso-octane {2,2,4 trimethylpentane}	0.92	15.62	16.53
Naphthalene	0.00	0.01	0.01
PACs {Chrysene}	0.00	0.00	0.00
Toluene	0.90	15.34	16.25
Trimethylbenzene (1,2,4)	0.02	0.35	0.37
Xylene	0.25	4.27	4.52

TankESP
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

T6 <-- Select a tank from the dropdown list

Identification

User Identification:	T6
City:	Kingman
State:	AZ
Company:	Kingman, AZ
Type of Tank:	Horizontal Tank
Description:	Kingman, Arizona

Tank Dimensions

Shell Length (ft):	21.00
Diameter (ft):	3.00
Volume (gallons):	1,110.00
Turnovers:	12.11
Net Throughput(gal/yr):	15,330.00
Insulation Condition:	Not Insulated

Paint Characteristics

Shell Color/Shade:	White Paint
Shell Condition	Average

Breather Vent Settings

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

Meteorological Data used in Emissions Calculations: Kingman, AZ (Avg Atmospheric Pressure = 13 psia)

TankESP
Emissions Report - Detail Format
Liquid Contents of Storage Tank

T6 - Horizontal Tank
Kingman, AZ

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg. F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight.	Basis for Vapor Pressure Calculations
Gasoline RVP_X	All	65.44	58.83	72.04	65.44	3.2819	2.8638	2.8638	66.0000			92.0000	Option 4: RVP=6, ASTM Slope=3
Benzene									78.1100	0.0180	0.0104	78.1100	Option 2: A=6.906, B=1211, C=220.79
Benzo(g,h,i)perylene									276.3300	0.0000	0.0000	276.3300	Option 2: A=11.82, B=6580, C=273.15
Cumene {isopropylbenzene}									120.1900	0.0050	0.0001	120.1900	Option 2: A=6.929, B=1455.8, C=207.2
Cyclohexane									84.1600	0.0024	0.0014	84.1600	Option 2: A=6.845, B=1203.5, C=222.86
Ethylbenzene									106.1700	0.0140	0.0007	106.1700	Option 2: A=6.95, B=1419.3, C=212.61
Hexane (n-)									86.1800	0.0100	0.0093	86.1800	Option 2: A=6.878, B=1171.5, C=224.37
Iso-octane {2,2,4 trimethylpentane}									114.2300	0.0400	0.0118	114.2300	Option 2: A=6.812, B=1257.8, C=220.74
Naphthalene									128.1700	0.0042	0.0000	128.1700	Option 2: A=7.146, B=1831.6, C=211.82
PACs {Chrysene}									228.2900	0.0000	0.0000	228.2900	Option 2: A=12.32, B=6160, C=273.15
Toluene									92.1400	0.0700	0.0116	92.1400	Option 2: A=7.017, B=1377.6, C=222.64
Trimethylbenzene (1,2,4)									120.1900	0.0250	0.0003	120.1900	Option 2: A=7.044, B=1573.3, C=208.56
Xylene									106.1700	0.0700	0.0032	106.1700	Option 2: A=7.009, B=1462.3, C=215.11

TankESP
Emissions Report - Detail Format
Detail Calculations (AP-42)

T6 - Horizontal Tank
Kingman, AZ

Annual Emission Calculations	
Standing Losses (lb):	144.1426
Vapor Space Volume (cu ft):	92.3396
Vapor Density (lb/cu ft):	0.0384
Vapor Space Expansion Factor:	0.1352
Vented Vapor Saturation Factor:	0.8236
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	92.3396
Tank Diameter (ft):	3.0000
Effective Diameter (ft):	9.7721
Vapor Space Outage (ft):	1.2312
Tank Shell Length (ft):	25.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0384
Vapor Molecular Weight (lb/lb-mole):	66.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	3.2819
Daily Avg. Liquid Surface Temp. (deg. F):	65.4364
Daily Average Ambient Temp. (deg. F):	62.2849
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.7310
Liquid Bulk Temperature (deg. F):	63.6435
Tank Paint Solar Absorptance (Shell):	0.2500
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.1352
Daily Vapor Temperature Range (deg. R):	26.4326
Daily Vapor Pressure Range (psia):	0.8845
Breather Vent Press. Setting Range (psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	3.2819
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	2.8638
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	2.8638
Daily Avg. Liquid Surface Temp. (deg F):	65.4364
Daily Min. Liquid Surface Temp. (deg F):	58.8282
Daily Max. Liquid Surface Temp. (deg F):	72.0445
Daily Ambient Temp. Range (deg. R):	25.9946
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.8236
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	3.2819
Vapor Space Outage (ft):	1.2312
Working Losses (lb):	78.4987
Vapor Molecular Weight (lb/lb-mole):	66.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	3.2819
Annual Net Throughput (gal/yr.):	15,330.0000
Annual Turnovers:	12.1110
Turnover Factor:	1.0000
Tank Diameter (ft):	3.0000
Working Loss Product Factor:	1.0000
Vapor Control Efficiency (%)	0%
Total Losses (lb):	222.6413

TankESP
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual
T6 - Horizontal Tank
Kingman, AZ

	Losses(lbs)		
Components	Working loss	Breathing Loss	Total Emissions
Gasoline RVP_X	78.50	144.14	222.64
Unidentified Components	74.65	137.08	211.73
Benzene	0.82	1.50	2.31
Benzo(g,h,i)perylene	0.00	0.00	0.00
Cumene {isopropylbenzene}	0.01	0.02	0.03
Cyclohexane	0.11	0.21	0.32
Ethylbenzene	0.06	0.11	0.17
Hexane (n-)	0.73	1.35	2.08
Iso-octane {2,2,4 trimethylpentane}	0.93	1.70	2.63
Naphthalene	0.00	0.00	0.00
PACs {Chrysene}	0.00	0.00	0.00
Toluene	0.91	1.68	2.59
Trimethylbenzene (1,2,4)	0.02	0.04	0.06
Xylene	0.25	0.47	0.72

Company	Facility
Transwestern Pipeline Company, LLC.	Kingman, Arizona
Descriptive Name of Emission Point	**Emission Point ID No.**
Kingman MIST Extractor for Pipeline Liquids	T6

Volatile Organic Compound Emission Calculation for Flashing

Vasquez-Beggs Solution Oil/Gas Ratio Correlation Method

CASE: Kingman, Arizona

CASE INPUTS:

	Stock Tank API Gravity	40	API
	Separator Pressure (psig)	870	P_i
	Separator Temperature (F)	78	T_i
Based on ethane	Separator Gas Gravity	0.56	SG_i
	Barrels of Oil Per Day (BOPD)	1.00	Q
Based on pentane	Stock Tank Gas Molecular Weight	87.1	MW
Estimated	Wt. Fraction VOC (C_3+) of Stock Tank G	0.80	VOC
	Atmospheric Pressure (psia)	14.7	P_{atm}

Methodology Constraints

16 >API< 58	API
50 > P_i < 5250	psia
70 > T_i < 295	F
0.56 > SG_i < 1.18	28.97/MW
None > Q < None	BOPD
18 > MW < 125	lb/lb-mol
0.5 > VOC < 1.00	Fraction
20 > R_s < 2070	scf/STB

$$R_s = (C_1 \times SG_x \times (P_i^{C2})) \times \exp((C_3 \times API)/(T_i + 460))$$

Where:

R_s = Gas/Oil Ratio of liquid at pressure of interest
SG_x = Dissolved gas gravity at 100 psig
P_i = Pressure at initial condition (psia)
API = API Gravity of liquid hydrocarbon at final condition
T_i = Temperature of initial condition (F)

Constants		API Gravity < 30	API Gravity > 30
C_1	=	0.0362	0.0178
C_2	=	1.0937	1.187
C_3	=	25.724	23.931

For SG_x = Dissolved gas gravity at 100 psig

$= SG_i [1.0 + 0.00005912 \times API \times T_i \times \log(P_i/114.7)]$

SG_i = Gas Gravity at initial condition

SG_x =	0.6516
C_1 =	0.0178
C_2 =	1.187
C_3 =	23.931

R_s = 216.27 scf/bbl for Pi + Patm = 884.7

$$THC = R_s \times Q \times MW \times 1/385 \text{ scf/lb-mol} \times 365 \text{ day/yr} \times 1 \text{ ton/2000 lb}$$

THC = Total hydrocarbons (tons/year)
R_s = Solution Oil/Gas Ratio (scf/STB)
Q = Oil Production Rate (bbl/day)
MW = Molecular Weight of Stock Tank Gas (lb/lb-mol)
385 = Volume of 1 lb/lb-mol of gas at 14.7 psia and 68 F

THC = 8.93 tpy

$$VOC = THC \times Frac\ C_3+ \text{ in the Stock Tank Vapor}$$

VOC = 7.14 tpy from flashing of gas from seperator to tank pressure

932 lb/Mgal emission factor as mass gas per volume liquid

APPENDIX B. 7 DAY NOTIFICATION FOR ENGINE REPLACEMENT

ARIZONA DEPARTMENT
OF
ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007
(602) 771-2300 • www.azdeq.gov

Janice K. Brewer
Governor

Henry R. Darwin
Director

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

November 29, 2011

Jeff Whippo
Transwestern Pipeline Company
64001 Indian School Road NE
Albuquerque, NM 87110

Dear Mr. Whippo:

Subject: Facility Change Without a Permit Revision - LTF No. 55200
Air Quality Control Permit No #48786

The Arizona Department of Environmental Quality has received a request from Transwestern Pipeline Company on November 22, 2011, for the replacement of the turbine gas generator component with a rebuilt gas generator of the same make, model, and horsepower. The Department agrees with your assessment that the proposed change meets the requirements of Arizona Administrative Code A.A.C. R18-2- 317.A.

You are advised that a permit is a legally enforceable document. If your facility fails to comply with the provisions contained in its permit, you will be subject to enforcement action and could incur civil fines and/or be subject to criminal penalties in accordance with A.R.S. §49-464.

If you have any questions, please contact Latha Toopal at (602) 771-2273, or me at (602) 771-2308.

Sincerely,

Balaji Vaidyanathan, Manager
Air Quality Permits Section

BV1: lkk

cc: Shirley F Rivera, EPA Region 9
Larry Campbell, Transwestern Pipeline Company

November 15, 2011

UPS Confirmation No.: 1Z 875 525 01 4702 5566

Ms. Nancy Wrona, Director
Arizona Department of Environmental Quality
1110 W. Washington
Phoenix, AZ 85007

Re: Transwestern Pipeline Company, Notification of a "Like in Kind" Process Gas Combustion Generator Replacement Activity, Kingman Compressor Station, Permit No. 48786

Dear Director:

As stated in conditions B and C of XVII, FACILITY CHANGE WITHOUT A PERMIT REVISION, Transwestern Pipeline Company is providing notification to the Arizona Dept. of Environmental Quality that on November 15, 2011, the 30,565 HP turbine gas generator (unit 104) will be replaced with a rebuilt gas generator of the same make, model, and horsepower. This activity will not result in a change in the emissions of any regulated air pollutant. The unit removed is a GE LM 2500 Gas Turbine Serial # 642146. The replacement unit is a GE LM 2500 Gas Turbine Serial # 642055.

This maintenance exchange activity conducted by General Electric, recommends replacement of a turbines gas generator on an approximate 30,000 hour operating rotation.

If you have any questions or need more information please call the undersigned at our Roswell Technical Operations office at (575) 625-8022.

Sincerely,

Larry Campbell
Sr. Environmental Specialist

xc: Kingman Compressor Station
file