ENERGY TRANSFER

October 31, 2012

Ms. Bonnie Braganza
Air, Pesticides and Toxics Division, MC 6PD-R
U.S. Environmental Protection Agency Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Subject: **Part 71 Operating Permit No. R6NM-01-08R1**
Renewal Application
Transwestern Pipeline Company, LLC
Compressor Station No. 6 - Laguna
Cibola County, New Mexico

Dear Ms. Braganza,

On behalf of Transwestern Pipeline Company, LLC (Transwestern), please find enclosed a Part 71 Federal Operating Permit renewal application for the Compressor Station No. 6 - Laguna (the Station) located in Laguna, Cibola County, New Mexico. The Station is located on the Laguna Indian Reservation and is currently operating under the subject Part 71 operating permit. At this time, Transwestern is requesting renewal of the operating permit.

Transwestern appreciates in advance the EPA's review and approval of this Part 71 permit renewal application. If you have any questions regarding the information presented in this letter or the enclosed application, please call me at (972) 722-7791.

Sincerely,

Christopher B. Hansen
Environmental Manager
Energy Transfer Company

Enclosure

PART 71 PERMIT RENEWAL APPLICATION

Permit No. R6NM-01-08R1

Transwestern Pipeline Company, LLC
Compressor Station No. 6 Laguna
Laguna, Cibola County, New Mexico

Transwestern Pipeline Company

Project No. 369-12

October 2012

EPA United States Environmental Protection Agency

OMB No. 2060-0336, Approval Expires 06/30/2015

Federal Operating Permit Program (40 CFR Part 71)

GENERAL INFORMATION AND SUMMARY (GIS)

A. Mailing Address and Contact Information

Facility name: Compressor Station No. 6 Laguna

Mailing address: Street or P.O. Box: 4001 Indian School Road

City: Albuquerque State: NM ZIP: 87110 -

Contact person: Larry Campbell Title: Senior Environmental Specialist

Telephone: (575) 625 - 8022 Ext.

Facsimile: (575) 627 - 8115

B. Facility Location

Temporary source? ___Yes ___No ☑ Plant site location: 1/2 mile south of Laguna, NM

City: Laguna State: NM County: Cibola EPA Region: 6

Is the facility located within:

Indian lands? ☑ YES ___ NO OCS waters? ___ YES ☑ NO

Non-attainment area? ___ YES ☑ NO If yes, for what air pollutants?

Within 50 miles of affected State? ___ YES ☑ NO If yes, What State(s)?

C. Owner

Name: Transwestern Pipeline Company Street/P.O. Box: 4001 Indian School Road

City: Albuquerque State: NM ZIP: 87110 -

Telephone: (575) 625 - 8022 Ext

D. Operator

Name: Transwestern Pipeline Company Street/P.O. Box: 4001 Indian School Road

City: Albuquerque State: NM ZIP: 87110 -

Telephone: (575) 625 - 8022 Ext

E. Application Type

Mark only one permit application type and answer the supplementary question appropriate for the type marked.

___Initial Permit ☑ Renewal ___ Significant Mod ___ Minor Permit Mod(MPM)

___ Group Processing, MPM ___ Administrative Amendment

For initial permits, when did operations commence? ____/____/____

For permit renewal, what is the expiration date of current permit? 10 /17 /2013

F. Applicable Requirement Summary

Mark all types of applicable requirements that apply.

___ SIP ☑ FIP/TIP ___ PSD ___Non-attainment NSR

___ Minor source NSR ___ Section 111 ___ Phase I acid rain ___Phase II acid rain

___ Stratospheric ozone ___ OCS regulations ___ NESHAP ___ Sec. 112(d) MACT

___ Sec. 112(g) MACT ___ Early reduction of HAP ___ Sec 112(j) MACT ___ RMP [Sec.112(r)]

___ Tank Vessel requirements, sec. 183(f)) ___ Section 129 Standards/Requirement

___ Consumer / comm.. products, ' 183(e) ___ NAAQS, increments or visibility (temp. sources)

Has a risk management plan been registered? ___YES ___NO Regulatory agency _____

Phase II acid rain application submitted? ___YES ___NO If yes, Permitting authority _____

G. Source-Wide PTE Restrictions and Generic Applicable Requirements

Cite and describe any emissions-limiting requirements and/or facility-wide "generic" applicable requirements.

MACT ZZZZ

H. Process Description

List processes, products, and SIC codes for the facility.

Process	Products	SIC
Natural Gas Transmission	Compressed Natural Gas	4922

I. Emission Unit Identification

Assign an emissions unit ID and describe each emissions unit at the facility. Control equipment and/or alternative operating scenarios associated with emissions units should by listed on a separate line. Applicants may exclude from this list any insignificant emissions units or activities.

Emissions Unit ID	Description of Unit
601	4500-hp Clark TVC-12 RICE, Serial # 107510
602	4500-hp Clark TVC-12 RICE, Serial # 107511
603	4500-hp Clark TVC-12 RICE, Serial # 107512
621	470-hp Waukesha F3520GU RICE, Serial # 129011
T-2	500-bbl Pipeline Liquids (Condensate) Fixed Roof Storage Tank
MIST	1,100-gallon Mist Extractor Vessel

J. Facility Emissions Summary

Enter potential to emit (PTE) for the facility as a whole for each air pollutant listed below. Enter the name of the single HAP emitted in the greatest amount and its PTE. For all pollutants stipulations to major source status may be indicated by entering "major" in the space for PTE. Indicate the total actual emissions for fee purposes for the facility in the space provided. Applications for permit modifications need not include actual emissions information.

NOx 1495.7 tons/yr VOC 88.4 tons/yr SO2 0.3 tons/yr

PM-10 21.9 tons/yr CO 454.4 tons/yr Lead _____ tons/yr

Total HAP 34.9 tons/yr

Single HAP emitted in the greatest amount Formaldehyde PTE 25.1 tons/yr

Total of regulated pollutants (for fee calculation), Sec. F, line 5 of form FEE _____ tons/yr

K. Existing Federally-Enforceable Permits

Permit number(s) _____ Permit type _____ Permitting authority _____

Permit number(s) _____ Permit type _____ Permitting authority _____

L. Emission Unit(s) Covered by General Permits

Emission unit(s) subject to general permit _____

Check one: ___ Application made ___ Coverage granted

General permit identifier _____ Expiration Date ___/___/___

M. Cross-referenced Information

Does this application cross-reference information? ___ YES ☑ NO (If yes, see instructions)

INSTRUCTIONS FOLLOW

EPA United States Environmental Protection Agency

OMB No. 2060-0336, Approval Expires 6/30/2015

Federal Operating Permit Program (40 CFR Part 71)

CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS (CTAC)

This form must be completed, signed by the "Responsible Official" designated for the facility or emission unit, and sent with each submission of documents (i.e., application forms, updates to applications, reports, or any information required by a part 71 permit).

A. Responsible Official

Name: (Last) Ingalls (First) Chad (MI) ____

Title Director of Operations

Street or P.O. Box 4001 Indian School Road

City Albuquerque State NM ZIP 87110

Telephone (575) 347 - 6514 Ext. _____ Facsimile (____) _____ - _____

B. Certification of Truth, Accuracy and Completeness (to be signed by the responsible official)

I certify under penalty of law, based on information and belief formed after reasonable inquiry, the statements and information contained in these documents are true, accurate and complete.

Name (signed) [signature]

Name (typed) Chad Ingalls Date: 10/30/12

ATTACHMENT 2
UNIT ATTRIBUTE FORMS

PART 71 PERMIT RENEWAL APPLICATON

COMPRESSOR STATION NO. 6 LAGUNA

TRANSWESTERN PIPELINE COMPANY, LLC

EPA United States Environmental Protection Agency

OMB No. 2060-0336, Approval Expires 06/30/2015

Federal Operating Permit Program (40 CFR Part 71)

EMISSION UNIT DESCRIPTION FOR FUEL COMBUSTION SOURCES (EUD-1)

A. General Information

Emissions unit ID 601 Description 4500-hp Gas-Fired Reciprocating Engine

SIC Code (4-digit) 4922 SCC Code 20200252

B. Emissions Unit Description

Primary use Gas Compression Temporary Source ___Yes X No

Manufacturer Clark Model No. TCV-12

Serial Number 107510 Installation Date ___/___/1967

Boiler Type: ___ Industrial boiler ___ Process burner ___ Electric utility boiler

Other (describe) _____

Boiler horsepower rating _____ Boiler steam flow (lb/hr) _____

Type of Fuel-Burning Equipment (coal burning only):

___ Hand fired ___Spreader stoker ___Underfeed stoker ___Overfeed stoker

___ Traveling grate ___Shaking grate ___Pulverized, wet bed ___ Pulverized, dry bed

Actual Heat Input 34.65 MM BTU/hr Max. Design Heat Input 34.65 MM BTU/hr

C. Fuel Data

Primary fuel type(s) Natural Gas Standby fuel type(s) None

Describe each fuel you expected to use during the term of the permit.

Fuel Type	Max. Sulfur Content (%)	Max. Ash Content (%)	BTU Value (cf, gal., or lb.)
Natural Gas	0	0	1050 btu/scf

D. Fuel Usage Rates

Fuel Type	Annual Actual Usage	Maximum Usage	
		Hourly	Annual
Natural Gas	255 MMcf	0.035	289 MMscf

E. Associated Air Pollution Control Equipment

Emissions unit ID_____ Device type_____

Air pollutant(s) Controlled_____ Manufacturer_____

Model No._____ Serial No._____

Installation date____/____/_____ Control efficiency (%) _____

Efficiency estimation method_____

F. Ambient Impact Assessment

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common).

Stack height (ft)	40.5	Inside stack diameter (ft)	2.5
Stack temp(°F)	900	Design stack flow rate (ACFM)	15,412
Actual stack flow rate (ACFM)	15412	Velocity (ft/sec)	52.3

EPA United States Environmental Protection Agency

OMB No. 2060-0336, Approval Expires 06/30/2015

Federal Operating Permit Program (40 CFR Part 71)

EMISSION UNIT DESCRIPTION FOR FUEL COMBUSTION SOURCES (EUD-1)

A. General Information

Emissions unit ID 602 Description 4500-hp Gas-Fired Reciprocating Engine

SIC Code (4-digit) 4922 SCC Code 20200252

B. Emissions Unit Description

Primary use Gas Compression Temporary Source ___Yes X No

Manufacturer Clark Model No. TCV-12

Serial Number 107511 Installation Date ___/___/1967

Boiler Type: ___ Industrial boiler ___ Process burner ___ Electric utility boiler

Other (describe) _____

Boiler horsepower rating _____ Boiler steam flow (lb/hr) _____

Type of Fuel-Burning Equipment (coal burning only):

___ Hand fired ___Spreader stoker ___Underfeed stoker ___Overfeed stoker

___ Traveling grate ___Shaking grate ___Pulverized, wet bed ___ Pulverized, dry bed

Actual Heat Input 34.65 MM BTU/hr Max. Design Heat Input 34.65 MM BTU/hr

C. Fuel Data

Primary fuel type(s) Natural Gas Standby fuel type(s) None

Describe each fuel you expected to use during the term of the permit.

Fuel Type	Max. Sulfur Content (%)	Max. Ash Content (%)	BTU Value (cf, gal., or lb.)
Natural Gas	0	0	1050 btu/scf

D. Fuel Usage Rates

Fuel Type	Annual Actual Usage	Maximum Usage	
		Hourly	Annual
Natural Gas	255 MMcf	0.035	289 MMscf

E. Associated Air Pollution Control Equipment

Emissions unit ID_____ Device type_____

Air pollutant(s) Controlled_____ Manufacturer_____

Model No._____ Serial No._____

Installation date____/____/____ Control efficiency (%) _____

Efficiency estimation method_____

F. Ambient Impact Assessment

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common).

Stack height (ft) 40.5	Inside stack diameter (ft) 2.5
Stack temp(°F) 900	Design stack flow rate (ACFM) 15,412
Actual stack flow rate (ACFM) 15,412	Velocity (ft/sec) 52.3

EPA United States Environmental Protection Agency

OMB No. 2060-0336, Approval Expires 06/30/2015

Federal Operating Permit Program (40 CFR Part 71)

EMISSION UNIT DESCRIPTION FOR FUEL COMBUSTION SOURCES (EUD-1)

A. General Information

Emissions unit ID 603 Description 4500-hp Gas-Fired Reciprocating Engine

SIC Code (4-digit) 4922 SCC Code 20200252

B. Emissions Unit Description

Primary use Gas Compression Temporary Source ___Yes X No

Manufacturer Clark Model No. TCV-12

Serial Number 107512 Installation Date ___/___/1967

Boiler Type: ___ Industrial boiler ___ Process burner ___ Electric utility boiler

Other (describe) _____

Boiler horsepower rating _____ Boiler steam flow (lb/hr) _____

Type of Fuel-Burning Equipment (coal burning only):

___ Hand fired ___Spreader stoker ___Underfeed stoker ___Overfeed stoker

___ Traveling grate ___Shaking grate ___Pulverized, wet bed ___ Pulverized, dry bed

Actual Heat Input 34.65 MM BTU/hr Max. Design Heat Input 34.65 MM BTU/hr

C. Fuel Data

Primary fuel type(s) Natural Gas Standby fuel type(s) None

Describe each fuel you expected to use during the term of the permit.

Fuel Type	Max. Sulfur Content (%)	Max. Ash Content (%)	BTU Value (cf, gal., or lb.)
Natural Gas	0	0	1050 btu/scf

D. Fuel Usage Rates

Fuel Type	Annual Actual Usage	Maximum Usage	
		Hourly	Annual
Natural Gas	255 MMcf	0.035	289 MMscf

E. Associated Air Pollution Control Equipment

Emissions unit ID_____ Device type_____

Air pollutant(s) Controlled_____ Manufacturer_____

Model No._____ Serial No._____

Installation date_____/_____/_____ Control efficiency (%) _____

Efficiency estimation method_____

F. Ambient Impact Assessment

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common).

Stack height (ft) 40.5	Inside stack diameter (ft) 2.5
Stack temp(°F) 900	Design stack flow rate (ACFM) 15,412
Actual stack flow rate (ACFM) 15,412	Velocity (ft/sec) 52.3

EPA United States Environmental Protection Agency

OMB No. 2060-0336, Approval Expires 06/30/2015

Federal Operating Permit Program (40 CFR Part 71)

EMISSION UNIT DESCRIPTION FOR FUEL COMBUSTION SOURCES (EUD-1)

A. General Information

Emissions unit ID 621 Description 470-hp Gas-Fired Reciprocating Engine

SIC Code (4-digit) 4922 SCC Code 20200253

B. Emissions Unit Description

Primary use Electric Generator Temporary Source ___Yes X No

Manufacturer Waukesha Model No. F3520GU

Serial Number 129011 Installation Date ___/___/1967

Boiler Type: ___ Industrial boiler ___ Process burner ___ Electric utility boiler

Other (describe) _____

Boiler horsepower rating _____ Boiler steam flow (lb/hr) _____

Type of Fuel-Burning Equipment (coal burning only):

___ Hand fired ___Spreader stoker ___Underfeed stoker ___Overfeed stoker

___ Traveling grate ___Shaking grate ___Pulverized, wet bed ___ Pulverized, dry bed

Actual Heat Input 4.2 MM BTU/hr Max. Design Heat Input 4.2 MM BTU/hr

C. Fuel Data

Primary fuel type(s) Natural Gas Standby fuel type(s) None

Describe each fuel you expected to use during the term of the permit.

Fuel Type	Max. Sulfur Content (%)	Max. Ash Content (%)	BTU Value (cf, gal., or lb.)
Natural Gas	0	0	1050 btu/scf

D. Fuel Usage Rates

Fuel Type	Annual Actual Usage	Maximum Usage	
		Hourly	Annual
Natural Gas	0.40 MMscf	0.004	35.04 MMscf

E. Associated Air Pollution Control Equipment

Emissions unit ID_____ Device type_____

Air pollutant(s) Controlled_____ Manufacturer_____

Model No._____ Serial No._____

Installation date_____/_____/_____ Control efficiency (%) _____

Efficiency estimation method_____

F. Ambient Impact Assessment

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common).

Stack height (ft) 20.0	Inside stack diameter (ft) 0.5
Stack temp(°F) 900	Design stack flow rate (ACFM) 1,610
Actual stack flow rate (ACFM) 1,610	Velocity (ft/sec) 136.6

EPA United States Environmental Protection Agency

OMB No. 2060-0336, Approval Expires 06/30/2015

Federal Operating Permit Program (40 CFR Part 71)

EMISSIONS UNIT DESCRIPTION FOR VOC EMITTING SOURCES (EUD-2)

A. General Information

Emissions unit ID MIST Description 1,100 gallon Fixed Roof Storage Tank

SIC Code (4-digit) 4922 SCC Code 40301009

B. Emissions Unit Description

Equipment type Fixed Roof StorageTank Temporary source: ___Yes X___No

Manufacturer Unknown Model No. Unknown

Serial No. Unknown Installation date ____/____/1966

Articles being coated or degreased _____

Application method _____

Overspray (surface coating) (%) _____ Drying method _____

No. of dryers _____ Tank capacity (degreasers) (gal) _____

C. Associated Air Pollution Control Equipment

Emissions unit ID _____ Device Type _____

Manufacturer _____ Model No _____

Serial No. _____ Installation date ____/____/_____

Control efficiency (%) _____.___ Capture efficiency (%) _____.___

Air pollutant(s) controlled _____ Efficiency estimation method _____

D. Ambient Impact Assessment

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common).

Stack height (ft) _____.____ Inside stack diameter (ft) _____.____

Stack temp (F) _____.____ Design stack flow rate (ACFM) _____.____

Actual stack flow rate (ACFM) _____ Velocity (ft/sec)

E. VOC-containing Substance Data

List each VOC-containing substance consumed, processed or produced at the emissions unit that is emitted into the air. In the name column, if providing a brand name, include the name of the manufacture; if the substance contains HAP, list the constituent HAP.

Substance Name (Chemical, Brand Name)	CAS No.	Substance Type	Actual Usage (gal/yr)	Max Usage (gal/day)	Max Usage (gal/year)	VOC Content (lb/gal)
Natural Gas Condensate	NA	NA	NA	NA	4,200	8.34

EPA United States Environmental Protection Agency

OMB No. 2060-0336, Approval Expires 06/30/2015

Federal Operating Permit Program (40 CFR Part 71)

EMISSIONS UNIT DESCRIPTION FOR VOC EMITTING SOURCES (EUD-2)

A. General Information

Emissions unit ID T-2 Description 500-bbl Fixed Roof Storage Tank

SIC Code (4-digit) 4922 SCC Code 40301009

B. Emissions Unit Description

Equipment type Fixed Roof StorageTank Temporary source: ___Yes X___No

Manufacturer Unknown Model No. Unknown

Serial No. Unknown Installation date ____/____/1966

Articles being coated or degreased _____

Application method _____

Overspray (surface coating) (%) _____ Drying method _____

No. of dryers _____ Tank capacity (degreasers) (gal) _____

C. Associated Air Pollution Control Equipment

Emissions unit ID _____ Device Type _____

Manufacturer _____ Model No _____

Serial No. _____ Installation date ____/____/_____

Control efficiency (%) _____.___ Capture efficiency (%) _____.___

Air pollutant(s) controlled _____ Efficiency estimation method _____

D. Ambient Impact Assessment

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common).

Stack height (ft) _____.____ Inside stack diameter (ft) _____.____

Stack temp (F) _____.____ Design stack flow rate (ACFM) _____.____

Actual stack flow rate (ACFM) _____ Velocity (ft/sec)

E. VOC-containing Substance Data

List each VOC-containing substance consumed, processed or produced at the emissions unit that is emitted into the air. In the name column, if providing a brand name, include the name of the manufacture; if the substance contains HAP, list the constituent HAP.

Substance Name (Chemical, Brand Name)	CAS No.	Substance Type	Actual Usage (gal/yr)	Max Usage (gal/day)	Max Usage (gal/year)	VOC Content (lb/gal)
Natural Gas Condensate	NA	NA	NA	NA	21,000	8.34

Federal Operating Permit Program (40 CFR Part 71)

INSIGNIFICANT EMISSIONS (IE)

On this page list each insignificant activity or emission unit. In the "number" column, indicate the number of units in this category. Descriptions should be brief but unique. Indicate which emissions criterion of part 71 is the basis for the exemption.

Number	Description of Activities or Emissions Units	RAP, except HAP	HAP
1	Waste Water Heater	✓	✓
1	Fugitive Emissions	✓	✓
3	Clark TCV-1 Engine 601, 602 and 603 Blowdowns & Starters	✓	✓
1	Waukesha Engine F3520GU Blowdowns & Starters	✓	✓
1	210-bbl Oily Water Tank	✓	✓
2	210-bbl Engine Lube Oil Tank	✓	✓
2	65-bbl Ethylene Glycol Tank	✓	✓
1	65-bbl Used Ethylene Glycol Tank	✓	✓
2	65-bbl Used Lube Oil Tank	✓	✓
1	Pipeline Liquids Truck Loading Point	✓	✓
1	Solvent Degreaser	✓	✓

Federal Operating Permit Program (40 CFR Part 71)

EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID 601

B. Identification and Quantification of Emissions

First, list each air pollutant that is either regulated at the unit or present in major amounts, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. You may round to the nearest tenth of a ton for yearly values or tenth of a pound for hourly values.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
Nitrogen Oxides		113.8	498.4	
Carbon Monoxide		34.5	151.2	
NMHC		4.2	18.2	
Sulfur Dioxide		0.02	0.1	
Particulate Matter (PM10)		1.7	7.3	
Formaldehyde		1.9	8.4	
Total HAP		2.7	11.6	

Federal Operating Permit Program (40 CFR Part 71)

EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID 602

B. Identification and Quantification of Emissions

First, list each air pollutant that is either regulated at the unit or present in major amounts, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. You may round to the nearest tenth of a ton for yearly values or tenth of a pound for hourly values.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
Nitrogen Oxides		113.8	498.4	
Carbon Monoxide		34.5	151.2	
NMHC		4.2	18.2	
Sulfur Dioxide		0.02	0.1	
Particulate Matter (PM10)		1.7	7.3	
Formaldehyde		1.9	8.4	
Total HAP		2.7	11.6	

Federal Operating Permit Program (40 CFR Part 71)

EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID 603

B. Identification and Quantification of Emissions

First, list each air pollutant that is either regulated at the unit or present in major amounts, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. You may round to the nearest tenth of a ton for yearly values or tenth of a pound for hourly values.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
Nitrogen Oxides		113.8	498.4	
Carbon Monoxide		34.5	151.2	
NMHC		4.2	18.2	
Sulfur Dioxide		0.02	0.1	
Particulate Matter (PM10)		1.7	7.3	
Formaldehyde		1.9	8.4	
Total HAP		2.7	11.6	

Federal Operating Permit Program (40 CFR Part 71)

EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID 621

B. Identification and Quantification of Emissions

First, list each air pollutant that is either regulated at the unit or present in major amounts, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. You may round to the nearest tenth of a ton for yearly values or tenth of a pound for hourly values.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
Nitrogen Oxides		9.3	0.5	
Carbon Monoxide		15.6	0.8	
NMHC		0.1	0.01	
Sulfur Dioxide		0.002	0.0001	
Particulate Matter (PM10)		0.1	0.004	
Formaldehyde		0.1	0.01	
Total HAP		0.1	0.01	

Federal Operating Permit Program (40 CFR Part 71)

EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID MIST

B. Identification and Quantification of Emissions

First, list each air pollutant that is either regulated at the unit or present in major amounts, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. You may round to the nearest tenth of a ton for yearly values or tenth of a pound for hourly values.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
Nitrogen Oxides				
Carbon Monoxide				
NMHC		0.3	5.5	
Sulfur Dioxide				
Particulate Matter (PM10)				
Formaldehyde				
Total HAP				

Federal Operating Permit Program (40 CFR Part 71)

EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID T-2

B. Identification and Quantification of Emissions

First, list each air pollutant that is either regulated at the unit or present in major amounts, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. You may round to the nearest tenth of a ton for yearly values or tenth of a pound for hourly values.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
Nitrogen Oxides				
Carbon Monoxide				
NMHC		6.00	28.17	
Sulfur Dioxide				
Particulate Matter (PM10)				
Formaldehyde				
Total HAP				

Federal Operating Permit Program (40 CFR Part 71)

POTENTIAL TO EMIT (PTE)

For each unit with emissions that count towards applicability, list the emissions unit ID and the PTE for the air pollutants listed below and sum them up to show totals for the facility. You may find it helpful to complete form **EMISS** before completing this form. Show other pollutants not listed that are present in major amounts at the facility on attachment in a similar fashion. You may round values to the nearest tenth of a ton. Also report facility totals in section **J** of form **GIS**.

Emissions Unit ID	Regulated Air Pollutants and Pollutants for which the Source is Major (tons/yr)						
	NOx	VOC	SO2	PM10	CO	Lead	HAP
601	498.4	18.2	0.1	7.3	151.2		11.6
602	498.4	18.2	0.1	7.3	151.2		11.6
603	498.4	18.2	0.1	7.3	151.2		11.6
621	0.46	0.01	0.0001	0.004	0.78		0.01
T-2		28.2					0.1
MIST		5.5					0.02
FACILTY TOTALS	1495.7	88.4	0.3	21.9	454.4		34.9

Federal Operating Permit Program (40 CFR Part 71)

INITIAL COMPLIANCE PLAN AND COMPLIANCE CERTIFICATION (I-COMP)

SECTION A - COMPLIANCE STATUS AND COMPLIANCE PLAN

Complete this section for each unique combination of applicable requirements and emissions units at the facility. List all compliance methods (monitoring, recordkeeping and reporting) you used to determine compliance with the applicable requirement described above. Indicate your compliance status at this time for this requirement and compliance methods and check "YES" or "NO" to the follow-up question.

Emission Unit ID(s): All significant sources

Applicable Requirement (Describe and Cite)

40 CFR part 71: emissions inventory fee, annual certification, and deviation reporting requirements

Compliance Methods for the Above (Description and Citation):

Prepare annual emissions inventories, pay emission fee, submit annual certifications, and deviation reports as needed. Keep records of operating hours, fuel consumption, and tank throughput.

Compliance Status:

X ___ In Compliance: Will you continue to comply up to permit issuance? X ____Yes ____No

___ Not In Compliance: Will you be in compliance at permit issuance? ___Yes ___No

___ Future-Effective Requirement: Do you expect to meet this on a timely basis? ____Yes ____No

Emission Unit ID(s): 601, 602, 603, and 621

Applicable Requirement (Description and Citation):

Permit Condition: keep monthly records of fuel consumption and maintenance activities.

Compliance Methods for the Above (Description and Citation):

Recordkeeping

Compliance Status:

X ___ In Compliance: Will you continue to comply up to permit issuance? X ____Yes ____No

___ Not In Compliance: Will you be in compliance at permit issuance? ___Yes ___No

___ Future-Effective Requirement: Do you expect to meet this on a timely basis? ____Yes ____No

B. SCHEDULE OF COMPLIANCE

Complete this section if you answered "NO" to any of the questions in section A. Also complete this section if required to submit a schedule of compliance by an applicable requirement. Please attach copies of any judicial consent decrees or administrative orders for this requirement.

Unit(s)_____ Requirement_____

Reason for Noncompliance. Briefly explain reason for noncompliance at time of permit issuance or that future-effective requirement will not be met on a timely basis:

Narrative Description of how Source Compliance Will be Achieved. Briefly explain your plan for achieving compliance:

Schedule of Compliance. Provide a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance, including a date for final compliance.

Remedial Measure or Action	Date to be Achieved

C. SCHEDULE FOR SUBMISSION OF PROGRESS REPORTS

Only complete this section if you are required to submit one or more schedules of compliance in section B or if an applicable requirement requires submittal of a progress report. If a schedule of compliance is required, your progress report should start within 6 months of application submittal and subsequently, no less than every six months. One progress report may include information on multiple schedules of compliance.

Contents of Progress Report (describe):

First Report____/____/___ Frequency of Submittal_____

Contents of Progress Report (describe):

First Report____/____/___ Frequency of Submittal_____

D. SCHEDULE FOR SUBMISSION OF COMPLIANCE CERTIFICATIONS

This section must be completed once by every source. Indicate when you would prefer to submit compliance certifications during the term of your permit (at least once per year).

Frequency of submittal Annual Beginning 12 /07 /2012

E. COMPLIANCE WITH ENHANCED MONITORING & COMPLIANCE CERTIFICATION REQUIREMENTS

This section must be completed once by every source. To certify compliance with these, you must be able to certify compliance for every applicable requirement related to monitoring and compliance certification at every unit.

Enhanced Monitoring Requirements: ____ In Compliance ____ Not In Compliance

Compliance Certification Requirements: ____ In Compliance ____ Not In Compliance

Federal Operating Permit Program (40 CFR Part 71)

INITIAL COMPLIANCE PLAN AND COMPLIANCE CERTIFICATION (I-COMP)

SECTION A - COMPLIANCE STATUS AND COMPLIANCE PLAN

Complete this section for each unique combination of applicable requirements and emissions units at the facility. List all compliance methods (monitoring, recordkeeping and reporting) you used to determine compliance with the applicable requirement described above. Indicate your compliance status at this time for this requirement and compliance methods and check "YES" or "NO" to the follow-up question.

Emission Unit ID(s): 621

Applicable Requirement (Describe and Cite)

Standard: 40 CFR §63.6595(a)(1) Comply with the following applicable emission limitations and operating limitations no later than October 19, 2013. 40 CFR §63.6602-Table 2c.6 : Change oil and filter every 500 hours of operation or annually, whichever comes first, Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first; Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. 40 CFR §63.6640(b) report each instance in which you did not meet each emission limitation. 40 CFR §63.6625(h), (j) minimize the engine's time spent at idle not to exceed 30 minutes.

Compliance Methods for the Above (Description and Citation):

Monitoring: 40 CFR §63.6625(f) install a non-resettable hour meter. 40 CFR §63.6640(a)-Table 6.9.a Operating and maintaining the stationary RICE according to the manufacturer's instructions.
Recordkeeping: 40 CFR §63.6655(a), (a)(1)-(2), (a)(4)-(5) records of each notification, report, maintenance, occurrence and duration of each malfunction, and actions taken during periods of malfunction. 40 CFR §63.6655(d)-(f) keep records of maintenance and operation hours. 40 CFR §63.6660(a)-(c)y keep records that are suitable form and readily accessible for 5 years.
Reporting: 40 CFR §63.6640(b), (e) report each instance in which you did not meet the requirements. 40 CFR §63.6650(f) report all deviations in a semiannual monitoring report. 40 CFR [G]§63.6640(f) limit use to100 operating hours.

Compliance Status:

___ In Compliance: Will you continue to comply up to permit issuance? ____Yes ____No

___ Not In Compliance: Will you be in compliance at permit issuance? ___Yes ___No

X
___ Future-Effective Requirement: Do you expect to meet this on a timely basis? X ____Yes ____No

Emission Unit ID(s):

Applicable Requirement (Description and Citation):

Compliance Methods for the Above (Description and Citation):

Compliance Status:

___ In Compliance: Will you continue to comply up to permit issuance? ____Yes ____No

___ Not In Compliance: Will you be in compliance at permit issuance? ___Yes ___No

___ Future-Effective Requirement: Do you expect to meet this on a timely basis? ____Yes ____No

B. SCHEDULE OF COMPLIANCE

Complete this section if you answered "NO" to any of the questions in section A. Also complete this section if required to submit a schedule of compliance by an applicable requirement. Please attach copies of any judicial consent decrees or administrative orders for this requirement.

Unit(s)_____ Requirement_____

Reason for Noncompliance. Briefly explain reason for noncompliance at time of permit issuance or that future-effective requirement will not be met on a timely basis:

Narrative Description of how Source Compliance Will be Achieved. Briefly explain your plan for achieving compliance:

Schedule of Compliance. Provide a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance, including a date for final compliance.

Remedial Measure or Action	Date to be Achieved

C. SCHEDULE FOR SUBMISSION OF PROGRESS REPORTS

Only complete this section if you are required to submit one or more schedules of compliance in section B or if an applicable requirement requires submittal of a progress report. If a schedule of compliance is required, your progress report should start within 6 months of application submittal and subsequently, no less than every six months. One progress report may include information on multiple schedules of compliance.

Contents of Progress Report (describe):

First Report____/____/___ Frequency of Submittal_____

Contents of Progress Report (describe):

First Report____/____/___ Frequency of Submittal_____

D. SCHEDULE FOR SUBMISSION OF COMPLIANCE CERTIFICATIONS

This section must be completed once by every source. Indicate when you would prefer to submit compliance certifications during the term of your permit (at least once per year).

Frequency of submittal Annual Beginning 12 / 07 / 2013

E. COMPLIANCE WITH ENHANCED MONITORING & COMPLIANCE CERTIFICATION REQUIREMENTS

This section must be completed once by every source. To certify compliance with these, you must be able to certify compliance for every applicable requirement related to monitoring and compliance certification at every unit.

Enhanced Monitoring Requirements: ____ In Compliance ____ Not In Compliance

Compliance Certification Requirements: ____ In Compliance ____ Not In Compliance

ATTACHMENT 3
PROJECT DESECRIPTION / PROJECT DESCRIPTION / APPLICABILITY

PART 71 PERMIT RENEWAL APPLICATON

COMPRESSOR STATION NO. 6 LAGUNA

TRANSWESTERN PIPELINE COMPANY, LLC

ATTACHMENT 3
PROCESS DESCRIPTION / PROJECT DESCRIPTION / APPLICABILITY

Transwestern Pipeline Company (TWP) Compressor Station No. 6 Laguna (the Station) is a natural gas compression and transmission facility located in Laguna, New Mexico, in Cibola County, approximately ½ mile south of Interstate 40. This Station is located on the Laguna Indian Reservation and is currently authorized to operate under Federal Operating Permit (FOP) No. R6NM-01-08R1. The Station continues to be major for carbon monoxide (CO), oxides of nitrogen (NO_X), hazardous air pollutants (HAPs). The Station's greenhouse gas (GHG) emissions are less than 100,000 tons per year (T/yr).

TWP is requesting that the Environmental Protection Agency (EPA) renew the Station's FOP. There have been no physical or operational changes (i.e., modifications) to the Station since the FOP was issued October 17, 2008. Figure 3-1 is an area map showing the location of the Station and the surrounding area. Figure 3-2 is a plot plan for the Station.

PROCESS DESCRIPTION

Dry natural gas is received at the Station through an inlet line and passes through inlet separators where free liquids are knocked out and collected in storage tanks. Note that because the Station only handles dry natural gas, the liquids collection is minimal. The inlet gas is then compressed by one of three engine driven gas compressors (Unit ID Nos.: 601, 602, and 603). After compression, the natural gas exits the Station. The compressor engines are Clark TVC-12 turbocharged engines rated at 4,500 horsepower (hp) each. These units were installed in 1967 and have not been modified since.

There is one gas-fired engine driven generator (Unit ID No: 621) to provide emergency/backup electric power to the Station. The engine is a Waukesha F3520GU unit rated at 470 hp. This unit was installed in 1967 and has not been modified since. Products of combustion from the compressor and generator engines exhaust through independent stacks.

There are several storage tanks at the Station for storing new and used lube oils, antifreeze (ethylene glycol), oily waste water, and pipeline liquids.

There are several blowdown relief vents located at the Station. These vents are used to relieve gas pressure during an emergency shutdown or during planned shutdown and maintenance events. There are also a pipeline pigging receiver and launcher at the Station. A mist extractor (Unit ID No: MIST) is used to remove liquid from the "flashing" gas during the pigging receiver and launcher operations. This equipment is used periodically to flush accumulations of liquids from the gas pipeline.

The liquids that are collected in the separators are directed to the condensate tank (Unit ID No: T-2). The condensate stored in the tank is periodically trucked out of the Station.

PROJECT DESCRIPTION

As stated previously, there are no physical or operational changes associated with this permit renewal application. However, TWP is updating certain permit representations to more current/accurate information, as follows:

- TWP is updating the storage tank vapor molecular weight to be representative of the EPA Tanks4.0.9d Program vapor properties.

- TWP is updating the storage tanks maximum hourly emission rates to reflect the worst case monthly maximum temperature and vapor pressure taken from the EPA Tanks4.0.9d Program.
- TWP is updating the fugitive equipment component counts to reflect more recent information, which includes adding water/oil and heavy liquid (i.e., lube oil and antifreeze) components.
- TWP is reducing the maximum volatile organic compound (VOC) content of the natural gas to 5 wt%, because the prior representation (7.5 wt%) was overly conservative.
- Emission rates for engine blowdowns and startups have been included as insignificant sources.
- TWP has included the emission rates associated with the 1 MMBtu/hr waste water heater as an insignificant source.

The Station consists of the following equipment:

Significant Sources

- Three 4,500-hp Clark TVC-12 gas compressor engines (Unit ID Nos.: 601, 602,and 603);
- One 470-hp Waukesha F3520GU generator engine (Unit ID No.: 621);
- One 500 barrel pipeline liquids tank (Unit ID No.: T-2); and
- One 1,100-gallon mist extractor vessel (Unit ID: MIST).

Insignificant Sources

- Area fugitive emissions (Unit ID No.: FUG);
- One waste water heater emissions (Unit ID: HEATER-1)
- Engine's blowdowns and starters emissions (Unit ID No.: 601-BDSV, 602-BDSV, 603-BDSV, and 621-BDSV);
- One 210 barrel oily waste water tank (Unit ID No.: T-1);
- Two 65 barrel ethylene glycol (antifreeze) tanks (Unit ID No.: T-3 and T-9);
- Two 210 barrel engine lube oil tanks (Unit ID Nos.: T-4 and T-5);
- One 65 barrel used ethylene glycol (antifreeze) tank (Unit ID No.: T-6);
- Two 65 barrel used oil tanks (Unit ID Nos.: T-7 and T-8);
- One truck loading point (Unit ID: TRUCK); and
- One solvent degreaser.

As per the Part 71 permit application instructions published in June of 1996 and 40 CFR 71.5(c)(11)(ii)(A) and (B), emissions sources can be classified as insignificant if emissions of a regulated pollutant does not exceed 2.0 tons per year, or if emissions of HAP do not exceed 1,000 pounds per year or the de minimus level defined in section 112(g) of the Clean Air Act. Based on this criteria the sources listed above as insignificant meet these requirements.

APPLICABILITY

The TWP Station is located on the Laguna Indian Reservation. The New Mexico Environment Department (NMED) has no jurisdictional authority over facilities located on Indian land. Therefore, the station is not subject to the State Implementation Plan (SIP). The Laguna tribe has no codified air regulations at this time. Therefore, the only requirements potentially applicable to sources located at the Station are federal regulations. Due to the construction date of the facility (1967), there are no sources at the Station which are currently subject to a NSPS. The Waukesha generator engine Unit ID No.: 621 is subject to the MACT ZZZZ standard. Section G of the GIS form summarizes all potentially applicable requirements for the Station.

40 CFR 63

Based on the current AP-42 emission factors for internal combustion engines the Laguna Station is a major source of HAP emissions. The primary HAP is formaldehyde produced as a product of combustion. Since the site is a major source of HAP there are two 40 CFR 63 MACT regulations that may be potentially applicable: Subpart HHH and Subpart ZZZZ.

Subpart HHH imposes requirements on selected sources at natural gas transmission and storage sites. The only affected sources targeted by this regulation are glycol dehydrators. There are no glycol dehydrations at the Laguna Station. Therefore, this regulation is not applicable to this site.

Subpart ZZZZ imposes requirements on reciprocating internal combustion engines (RICE) located at major sources of HAP. Subpart ZZZZ has been amended and became effective October 19, 2010. Existing source RICE engines are defined in the amended 40 CFR §63.6590(a)(1)(ii) as existing if construction of the engine commenced before June 12, 2006. According to 40 CFR §63.6595(a), existing RICE $\leq$ 500 brake HP located at an major source must comply with applicable emission limitations and operating limitations no later than October 19, 2013. Section A of the COMP-1 form summarizes the RICE engine Unit No.: 621 applicable requirements. Subpart ZZZZ exempts existing lean burn engines, Unit No.: 601, 602, and 603.

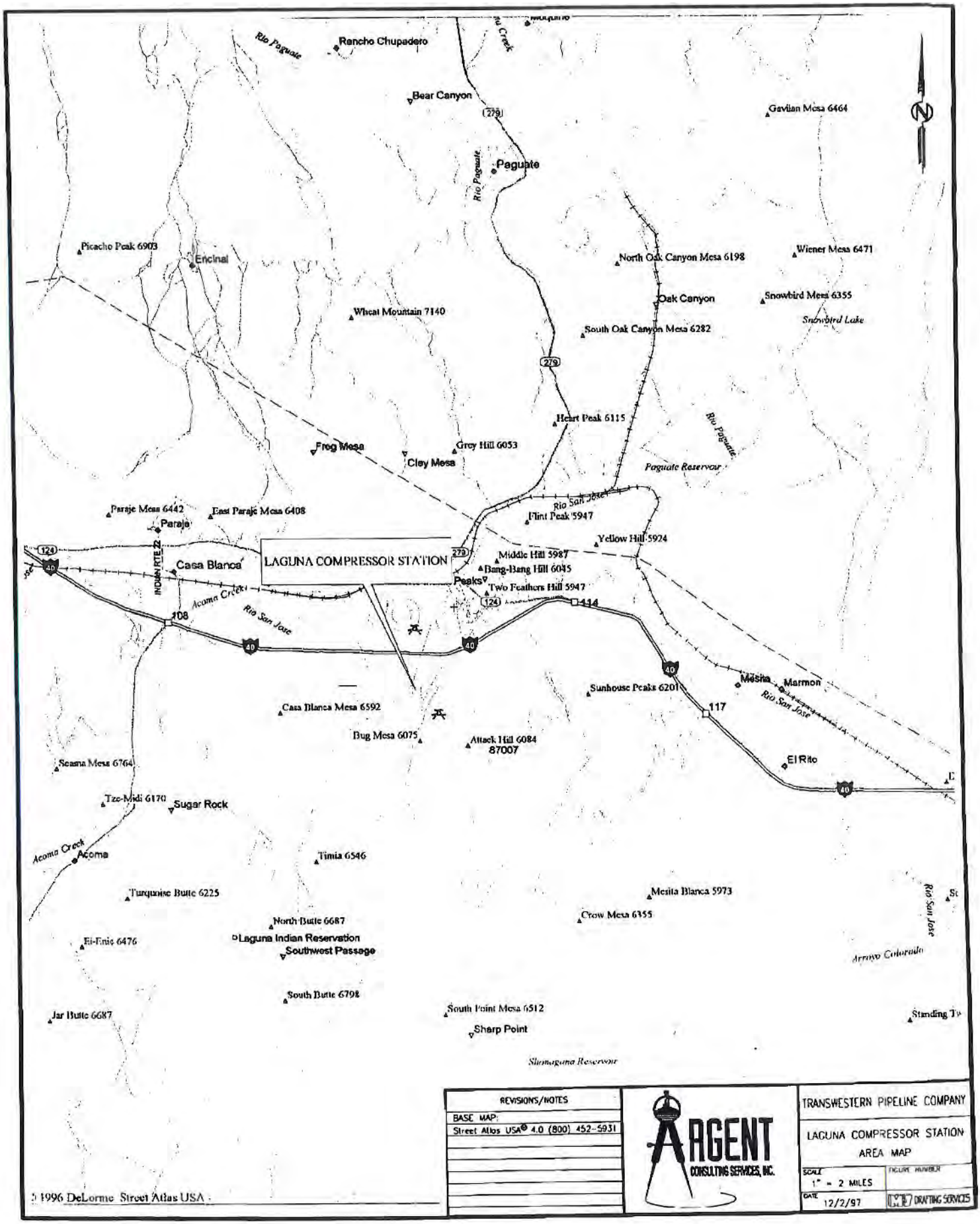
40 CFR 64 Compliance Assurance Monitoring (CAM)

The federal CAM regulation requires certain sources to comply with additional monitoring requirements if specific applicability criteria are met. Those 40 CFR 64.2 (a) criteria are:

- The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under the regulation;
- The unit uses a control device to achieve compliance with any such emission limitation or standard; and
- The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.

As represented in past permit applications, the three gas compressor engines and the single backup generator engine are not equipped with control devices used to meet an emission limit or standard. Therefore, CAM continues to not apply to these sources. There are no other sources at the station where CAM could be potentially applicable. Therefore, TWP requests a permit shield for the negative CAM applicability evaluation.

Attachment 4 contains emission rate calculations for each emission source located at the Station.


Rio Puerco
Rancho Chupadero
Bear Canyon
279
Gavilan Mesa 6464
Paguate
Rio Paguate
Picacho Peak 6903
Encinal
North Oak Canyon Mesa 6198
Wiener Mesa 6471
Oak Canyon
Snowbird Mesa 6355
Wheat Mountain 7140
Snowbird Lake
South Oak Canyon Mesa 6282
Heart Peak 6115
Rio Paguate
Frog Mesa
Grey Hill 6053
Cley Mesa
Paguate Reservoir
Rio San Jose
Paraje Mesa 6442
East Paraje Mesa 6408
Flint Peak 5947
Paraje
Yellow Hill 5924
LAGUNA COMPRESSOR STATION
Middle Hill 5987
Casa Blanca
Bang-Bang Hill 6045
Peaks
Two Feathers Hill 5947
INDIAN RTE 23
Acoma Creek
Rio San Jose
108
124
414
Mesita
Marmon
Sunhouse Peaks 6201
Casa Blanca Mesa 6592
117
Bug Mesa 6075
Attack Hill 6084
87007
El Rito
Seama Mesa 6764
Tze-Midi 6170
Sugar Rock
Acoma Creek
Acoma
Timia 6546
Turquoise Butte 6225
Mesita Blanca 5973
Crow Mesa 6355
North Butte 6687
Laguna Indian Reservation
Southwest Passage
El-Enie 6476
Arroyo Colorado
South Butte 6798
Jar Butte 6687
South Point Mesa 6512
Sharp Point
Standing Tr
Shumaguna Reservoir
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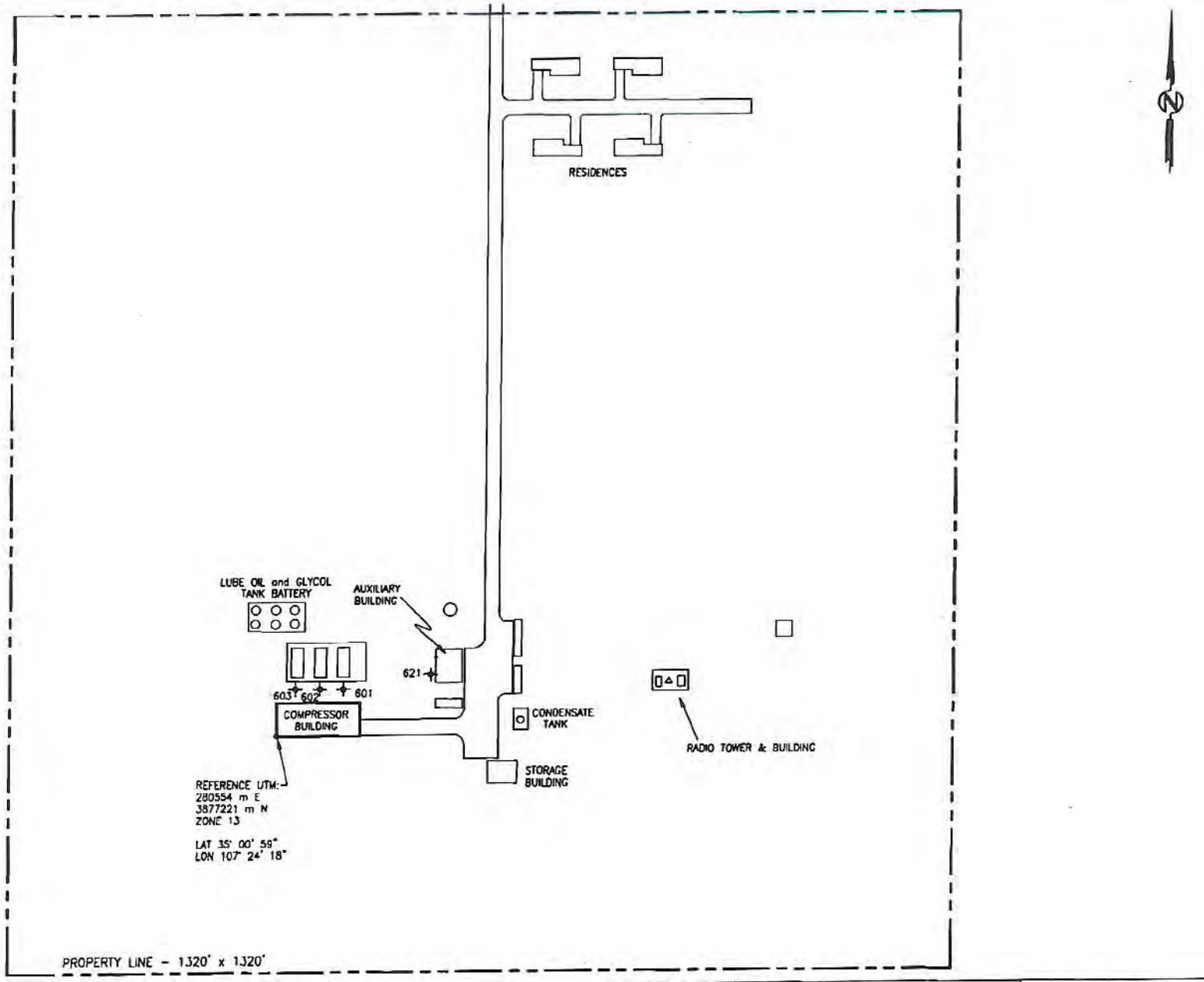
REVISIONS/NOTES
BASE MAP:
Street Atlas USA® 4.0 (800) 452-5931
ARGENT CONSULTING SERVICES, INC.
TRANSWESTERN PIPELINE COMPANY
LAGUNA COMPRESSOR STATION
AREA MAP
SCALE
1" = 2 MILES
FIGURE NUMBER
DATE
12/2/97
DRAFTING SERVICES



REVISIONS/NOTES	ARGENT CONSULTING SERVICES, INC.	TRANSWESTERN PIPELINE COMPANY
FILENAME: C:\ACAD\ARGENT\TRANS\LAGUNAPP		COMPRESSOR STATION NO. 6 LAGUNA, NEW MEXICO PLOT PLAN
		SCALE: 1" = 200' / FIGURE NUMBER
		DATE: 12/23/97 / MB DRAFTING SERVICES

ATTACHMENT 4
CALCULATIONS

PART 71 PERMIT RENEWAL APPLICATON

COMPRESSOR STATION NO. 6 LAGUNA

TRANSWESTERN PIPELINE COMPANY, LLC

ATTACHMENT 4
CALCULATIONS

COMRPESSOR ENGINES (601, 602, and 603)

Potential emissions from the three compressor engines were estimated under the assumption of continuous operation. Emissions of NOx and CO were calculated using a test value (lb/hr) obtained from similar Clark units located in Arizona. TWP conservatively increased these factors by 20% as a safety factor to cover a wide operating range. All other emission factors were obtained from the current AP-42 factors for 2-cycle lean burn engines.

GENERATOR ENGINE (621)

Potential emissions from the generator engines were estimated under the assumption the source operated no more than 100-hours per year. All emission factors were obtained from the current AP-42 factors for 4-cycle rich burn engines.

CONDENSATE TANK (T-2)

The Station is equipped with a single 21,000 gallon fixed roof storage tank for storing pipeline liquids. The Laguna Station handles only dry natural gas. However, in any pipeline operation liquids may form and collect in the pipe. These liquids are composed mainly of water with some heavier hydrocarbon components. These liquids are carried through the pipe through the movement of gas. The liquids enter the station and are separated from the gas stream in a separator vessel. These liquids are periodically dumped to the storage. On an annual basis the station collects virtually no pipeline liquid. However, for this permit TWP has conservatively assumed that the tank will experience one turnover per year. Working and breathing losses were estimated using the EPA Tank program and conservatively based on gasoline. Flash losses were estimated using the Vasquez-Beggs equation and conservative operating parameters. This method is overly conservative but is currently the only method available since sufficient throughput is not available to allow for sampling.

MIST EXTRACTOR (MIST)

The Station is equipped with a 1,100-gallon mist extractor which acts as storage tank. The mist extractor is used during pipeline pigging operations to remove liquid droplets from the "flashing" of any gas that enters the vessel. Working and breathing losses were estimated using the EPA Tank program and conservatively based on gasoline. Flash losses were estimated using the Vasquez-Beggs equation and conservative operating parameters. Annual emissions were based on 4,200 gallons of year through the mist extractor.

PERMIT RENEWAL

SUMMARY OF POTENTIAL TO EMIT

COMPRESSOR STATION NO. 6 LAGUNA

TRANSWESTERN PIPELINE COMPANY, LLC

Stack ID	Description	CO Emissions		NO_X Emissions		PM Emissions		SO_2 Emissions		VOC Emissions		CH_2O Emissions		Benzene Emissions		CO_2e	
		Hourly (lb/hr)	Annual (T/yr)	Hourly (lb/hr)	Annual (T/yr)	Hourly (lb/hr)	Annual (T/yr)	Hourly (lb/hr)	Annual (T/yr)	Hourly (lb/hr)	Annual (T/yr)	Hourly (lb/hr)	Annual (T/yr)	Hourly (lb/hr)	Annual (T/yr)	Hourly (lb/hr)	Annual (T/yr)
Normal Operations																	
601	Clark TCV-12	34.52	151.20	113.79	498.40	1.67	7.31	0.02	0.09	4.16	18.22	1.91	8.37	0.07	0.31		17,757.12
602	Clark TCV-12	34.52	151.20	113.79	498.40	1.67	7.31	0.02	0.09	4.16	18.22	1.91	8.37	0.07	0.31		17,757.12
603	Clark TCV-12	34.52	151.20	113.79	498.40	1.67	7.31	0.02	0.09	4.16	18.22	1.91	8.37	0.07	0.31		17,757.12
621	Waukesha F3520GU	15.62	0.78	9.28	0.46	0.08	0.004	0.002	0.0001	0.12	0.01	0.09	0.01	0.01	0.001		24.57
HEATER-1	Waste Water Heater	0.08	0.35	0.10	0.44	0.01	0.04	0.001	0.004	0.01	0.04	0.0001	0.0004	0.000002	0.00001		512.47
FUG	Site Fugitives									0.36	1.34			0.0002	0.001		513.90
MIST	Mist Eliminator									0.29	5.54			0.0003	0.02		2,200.00
T-2	Condensate Tank									6.00	28.17			0.01	0.06		11,080.00
TRUCK	Liquid Loading									50.96	0.04						
Maintenance Operations																	
601-BDSV	Clark TCV-12 Blowdowns & Starters									8.33	0.30			0.01	0.0003		87.58
602-BDSV	Clark TCV-12 Blowdowns & Starters									8.33	0.30			0.01	0.0003		87.58
603-BDSV	Clark TCV-12 Blowdowns & Starters									8.33	0.30			0.01	0.0003		87.58
621-BDSV	Waukesha F3520GU Starters	--	--	--	--	--	--	--	--	6.08	0.02			0.01	0.0000		9.68
	Total Emissions:	**119.26**	**454.73**	**350.75**	**1496.10**	**5.10**	**21.97**	**0.06**	**0.27**	**101.29**	**90.72**	**5.82**	**25.12**	**0.27**	**1.01**		67,874.72

PERMIT RENEWAL

SUMMARY OF HAP POTENTIAL TO EMIT

COMPRESSOR STATION NO. 6 LAGUNA

TRANSWESTERN PIPELINE COMPANY, LLC

Stack ID	Description	HAP Emissions Hourly (lb/hr)	HAP Emissions Annual (T/yr)
Normal Operations			
601	Clark TCV-12	2.65	11.60
602	Clark TCV-12	2.65	11.60
603	Clark TCV-12	2.65	11.60
621	Waukesha F3520GU	0.10	0.01
Heater-1	Waste Water Heater	0.0001	0.0004
FUG	Site Fugitives	0.0002	0.001
MIST	Mist Eliminator	0.0003	0.02
T-2	Condensate Tank	0.010	0.06
TRUCK	Liquid Loading		
Maintenance Operations			
601-BDSV	Clark TCV-12 Blowdown & Starters	0.01	0.0003
602-BDSV	Clark TCV-12 Blowdown & Starters	0.01	0.0003
603-BDSV	Clark TCV-12 Blowdown & Starters	0.01	0.0003
621-BDSV	Waukesha F3520GU Starters	0.01	0.0000
	Total Emissions:	**8.10**	**34.89**

ENGINES POTENTIAL TO EMIT

POTENTIAL TO EMIT

COMPRESSOR STATION NO. 6 LAGUNA

TRANSWESTERN PIPELINE COMPANY, LLC

		Engine Ratings				Annual Operating				Potential to Emit (PTE)		
	Description	Type	Rated Horsepower (hp)	Fuel Consumption (Btu/hp-hr)	Fuel Rating (MMBtu/hr)	Hours (hr/yr)	Pollutant	Emission Factors[a]	Units	Hourly[b] (lb/hr)	Annual[b] (T/yr)
Normal Operations:											
Stack ID:	601 Compressor Engine 1	Compressor Engine 1 Clark TCV-12 2-stroke, lean burn 4,500 hp	4,500	7,930	34.65	8,760	CO	3.48	g/hp-hr	34.53	151.20
							NO_x	11.47	g/hp-hr	113.79	498.40
							PM/PM_{10}	0.048310	lb/MMBtu	1.67	7.31
							SO_2	4	ppm S	0.02	0.09
							VOC	0.47	lb/MMBtu	4.16	18.22
							CH2O	0.0552	lb/MMBtu	1.91	8.37
							Benzene[c]	0.00194	lb/MMBtu	0.07	0.31
Stack ID:	602 Compressor Engine 2	Compressor Engine 2 Clark TCV-12 2-stroke, lean burn 4,500 hp	4,500	7,930	34.65	8,760	CO	3.48	g/hp-hr	34.52	151.20
							NO_x	11.47	g/hp-hr	113.79	498.40
							PM/PM_{10}	0.048310	lb/MMBtu	1.67	7.31
							SO_2	4	ppm S	0.02	0.09
							VOC	0.12	lb/MMBtu	4.16	18.22
							CH2O	0.0552	lb/MMBtu	1.91	8.37
							Benzene[c]	0.00194	lb/MMBtu	0.07	0.31
Stack ID:	603 Compressor Engine 3	Compressor Engine 3 Clark TCV-12 2-stroke, lean burn 4,500 hp	4,500	7,930	34.65	8,760	CO	3.48	g/hp-hr	34.52	151.20
							NO_x	11.47	g/hp-hr	113.79	498.40
							PM/PM_{10}	0.048310	lb/MMBtu	1.67	7.31
							SO_2	4	ppm S	0.02	0.09
							VOC	0.12	lb/MMBtu	4.16	18.22
							CH2O	0.0552	lb/MMBtu	1.91	8.37
							Benzene[c]	0.00194	lb/MMBtu	0.07	0.31
Stack ID:	621 Emerg 1	Compressor Engine 1 Waukesha F3520GU 4-stroke, rich burn 470 hp	470	7,750	3.2	100	CO	3.720	lb/MMBtu	15.67	0.78
							NO_x	2.21	lb/MMBtu	9.28	0.46
							PM/PM_{10}	0.019410	lb/MMBtu	0.08	0.004
							SO_2	4	ppm S	0.002	0.0001
							VOC	0.0286	lb/MMBtu	0.12	0.01
							CH2O	0.0265	lb/MMBtu	0.09	0.005
							Benzene[c]	0.00158	lb/MMBtu	0.01	0.001

[a] For Unit ID 601, 602, and 603 the emission factors for CO and NO_x are from stack tests. The emission factors for VOC, CH2O and Benzene are from AP-42 Table 3.2-3 (dated 7/00). For Unit ID 621, the emission factors are from AP-42 Table 3.2-3 (dated 7/00). An example calculation for hourly CO emissions for Unit ID 601 follows:

CO (lb/hr) = (Rated Horsepower, hp)*(Emission Factor, g/hp-hr)*(1 lb/453.59 g)

CO (lb/hr) = (4500 hp)*(3.48 g/hp-hr)*(1 lb/453.59 g)

= 34.52 lb/hr CO

The PM/PM_{10} emission factor are from AP-42 Table 3.2-3 (dated 7/00). An example calculation for hourly PM emissions for Unit ID 601 follows:

PM (lb/hr) = (Fuel Rating, MMBtu/hr)*(Emission Factor, lb/MMBtu)

PM (lb/hr) = (34.65 MMBtu/hr)*(0.048310 lb/MMBtu)

1.67 lb/hr PM

A material balance approach was used to estimate the SO_2 emission rates using the maximum sulfur concentration in the natural gas. An example calculation for hourly SO_2 emissions for Unit ID 601 follows:

SO_2 (lb/hr) = (Fuel Consumption, Btu/hp-hr)*(Rated Horsepower, hp)/(Lower Fuel Heating Value, Btu/scf)*(Sulfur Content, ppmv)*(1 lb-mol/379 scf)*(lb-mol SO_2/lb-mol S)*(64.06 lb SO_2/lb-mol SO_2)

SO_2 (lb/hr) = (7,930 Btu/hp-hr)*(4500 hp)/(1015 Btu/scf)*(1 scf/E-6 scf gas)*(1 lb-mol/379 scf)*(lb-mol SO_2/lb-mol S)*(64.06 lb SO_2/lb-mol SO_2)

0.02 lb/hr SO

[b] An example calculation for annual CO emissions for Unit ID 601 follows:

CO (T/yr) = (Hourly PTE, lb/hr)*(Annual Operating Hours, hr/yr)*(1 T/2,000 lb)

CO (T/yr) = (34.52 lb/hr)*(8,760 hr/yr)*(1 T/2,000 lb)

151.20 T/yr CO

ENGINES SPECIATED VOC EMISSIONS

POTENTIAL TO EMIT

COMPRESSOR STATION NO. 6 LAGUNA

TRANSWESTERN PIPELINE COMPANY, LLC

	AP-42 Emission Factor [a] (lb/MMBtu)	Compressor Engine 601, 602, and 603			
		Heat Input		Actual Emissions	
		Annual (MMBtu/yr)	Max Hourly (MMBtu/hr)	Annual (T/yr)	Max Hourly (lb/hr)
		303,534	34.65		
Acetaldehyde [b]	0.00776			1.1777	0.2689
Acrolein [b]	0.00778			1.1807	0.2696
Toluene [b]	0.000963			0.1462	0.0334
Methanol [b]	0.00248			0.3764	0.0859
Xylene [b]	0.000268			0.0407	0.0093
n-Butane	0.00475			0.7209	0.1646
Isobutane	0.00375			0.5691	0.1299
n-Pentane	0.00153			0.2322	0.0530
Propane	0.02870			4.3557	0.9945
VOC-u (remainder)				1.0504	0.1709

[a] Emission factors are from AP-42 Table 3.2-1 (dated 7/00).

[b] HAP

HEATER POTENTIAL TO EMIT

POTENTIAL TO EMIT

COMPRESSOR STATION NO. 6 LAGUNA

TRANSWESTERN PIPELINE COMPANY, LLC

		Description	Rated Duty (MMBtu/hr)	Higher Fuel Heating Value (Btu/scf)	Annual Operating Hours (hr/yr)	Pollutant	Emission Factor [a]	Unit	Allowable Emission Rates: Hourly [b] (lb/hr)	Allowable Emission Rates: Annual [c] (T/yr)
Stack ID	HEATER-1	Waste Water Heater	1.00	1,050	8,760	CO	84	lb/MMscf	0.08	0.35
						NO_X	100	lb/MMscf	0.10	0.44
						PM [d]	7.6	lb/MMscf	0.01	0.04
						SO_2 [e]	4.0	ppmv	0.001	0.004
						VOC	5.5	lb/MMscf	0.01	0.04
						CH_2O	0.075	lb/MMscf	0.0001	0.0004
						Benzene	0.0021	lb/MMscf	0.000002	0.00007

[a] Unless otherwise noted, emission factors are from AP-42 Tables 1.4-1, 1.4-2, and 1.4-3 (dated 7/98).

[b] An example calculation for hourly CO emissions follows:

CO (lb/hr) = (Rated Duty, MMBtu/hr)/(Fuel Heating Value, Btu/scf)*(Emission Factor, lb/MMscf)

CO (lb/hr) = (1.00 MMBtu/hr)/(1050 Btu/scf)*(84 lb/MMscf)

= 0.08 lb/hr CO

[c] An example calculation for annual CO emissions follows:

CO (T/yr) = (Hourly CO Emission Rate, lb/hr)*(Annual Operating Hours, hr/yr)/(2,000 lb/T)

CO (T/yr) = (0.08 lb/hr)*(8,760 hr/yr)/(2,000 lb/T)

= 0.35 T/yr CO

[d] All PM is assumed to be less than 2.5 microns in diameter per footnote "c" of AP-42 Table 1.4-2.

[e] A material balance approach was used to estimate the SO_2 emission rates using the maximum sulfur concentration in the natural gas.

SO_2 (lb/hr) = (Rated Duty, MMBtu/hr)/(Fuel Heating Value, Btu/scf)*(4 scf S/MMscf gas)*(1 lb-mol/379 scf)*(32.06 lb S/lb-mol)*(64.06 lb SO_2/32.06 lb S)

SO_2 (lb/hr) = (1.00 MMBtu/hr)/(1050 Btu/scf)*(4.0 scf S/MMscf gas)*(1 lb-mol/379 scf)*(32.06 lb S/lb-mol)*(64.06 lb SO2/32.06 lb S)

= 0.001 lb/hr SO_2

GREENHOUSE GAS POTENTIAL TO EMIT FOR COMBUSTION SOURCES

POTENTIAL TO EMIT

COMPRESSOR STATION NO. 6 LAGUNA

TRANSWESTERN PIPELINE COMPANY, LLC

Combustion-Related Green House Gas Emissions

Combustion Source ID	HP	Btu/hp-hr	MMBtu/hr	Annual Operating Hours	Fuel Usage MMBtu/Term	CO_2e[a] metric T/yr	CO_2e[a] short T/yr	GHG Mass[a] short T/yr
601	4,500	7,900	34.65	8,760	303,534.00	16,109.16	17,757.12	17,740.09
602	4,500	7,900	34.65	8,760	303,534.00	16,109.16	17,757.12	17,740.09
603	4,500	7,900	34.65	8,760	303,534.00	16,109.16	17,757.12	17,740.09
621	470	7,750	4.20	100	420.00	22.29	24.57	24.55
Heater-1	--	--	1.00	8,760	8,760.00	464.91	512.47	511.98
SITE TOTAL			**109.15**	--	**919,782.00**	**48,814.68**	**53,808.40**	**53,756.80**

[a]Sample calculations:

Greenhouse Gas (GHG) Emission Factors from Tables C-1 and C-2 of 40 CFR 98, Subpart C, are as follows:

Carbon Dioxide Emission Factor (CO_2EF) = 53.02 kg/MMBtu
Methane Emission Factor (CH_4EF) = 0.001 kg/MMBtu
Nitrous Oxide Emission Factor (N_2OEF) = 0.0001 kg/MMBtu

An example calculation for carbon dioxide equivalent CO_2e in metric T/yr for ID 601 follows:
CO_2e (metric T/yr) = (0.001 metric T/kg)*(Fuel usage, MMBtu/yr))*[(CO_2EF + 21*CH_4EF + 310*N_2OEF), kg/MMBtu]
CO2e (metric T/yr) = (0.001 metric T/kg) * (303,534 MMBtu/yr) * [(53.02 kg/MMBtu) + (21*0.001 kg/MMBtu) + (310*0.0001 kg/MMBtu)] = 16,109.16 metric T/yr

An example calculation for CO_2e in short T/yr for ID 601 follows:
CO_2e (short T/yr) = (0.001 metric T/kg) * (Fuel usage, MMBtu/yr)) * [(CO_2EF + 21*CH_4EF + 310*N_2OEF), kg/MMBtu] * (2,204.6 lb/metric T) / (2,000 lb/short T)
CO2e (short T/yr) = (0.001 metric T/kg) * (303,534 MMBtu/yr) * [(53.02 kg/MMBtu) + (21*0.001 kg/MMBtu) + (310*0.0001 kg/MMBtu)] * (2,204.6 lb/metric T) / (2,000 lb/short T) = 17,757.12 short T/yr

An example calculation for GHG Mass in short T/yr for ID 601 follows:
GHG Mass (short T/yr) = (0.001 metric T/kg) * (Fuel usage, MMBtu/yr) * (CO_2EF+CH_4EF+N_2OEF) * (2,204.6 lb/metric T) / (2,000 lb/short T)
GHG Mass (short T/yr) = (0.001 metric T/kg) * (303,534 MMBtu/yr) * [(53.02 kg/MMBtu) + (0.001 kg/MMBtu) + (0.0001 kg/MMBtu)] * (2,204.6 lb/metric T) / (2,000 lb/short T) = 17,740.09 short T/yr

BLOWDOWNS AND STARTERS POTENTIAL TO EMIT

POTENTIAL TO EMIT

COMPRESSOR STATION NO. 6 LAGUNA

TRANSWESTERN PIPELINE COMPANY, LLC

Description	Facility ID: 601, 602, and 603 Compressor Engines		Facility ID: 621
	Blowdowns	Starters	Compressor Engine Starters
Number of Events per Year	72	216	24
Number of Events per Hour	1	3	3
Volume per Event, scf	1000	900	900
Gas Stream Specific Gravity	0.5920	0.5920	0.5920
Gas Stream Density, lb/scf [a]	0.045	0.045	0.045
Max VOC Percentage in Gas Stream, wt%	5.00%	5.00%	5.00%
Max Benzene Percentage in Gas Stream, wt%	0.005%	0.005%	0.005%
Max Carbon Dioxide Percentage in Gas Stream, wt%	5.00%	5.00%	5.00%
Max Methane Percentage in Gas Stream, wt%	95.00%	95.00%	95.00%
Hourly VOC Emission Rates (lb/hr): [b]	2.25	6.08	6.08
Annual VOC Emission Rates (T/yr): [c]	0.08	0.22	0.02
Hourly Benzene Emission Rates (lb/hr):	0.002	0.01	0.01
Annual Benzene Emission Rates (T/yr):	0.0001	0.0002	0.00002
Annual Carbon Dioxide Emission Rates (T/yr):	0.08	0.22	0.02
Annual Methane Emission Rates (T/yr):	1.54	4.16	0.46

[a] Gas stream density is calculated as follows:

(28.96 lb/mole) / (379 scf/mole) * (0.5920) = 0.045 lb/scf

[b] Hourly blowdown VOC emission rates are calculated as follows:

(1 events/hr) * (1,000 scf/event) * (0.045 lb/scf) * (5.00 % VOC) = 2.25 lb/hr

[c] Annual blowdown VOC emission rates are calculated as follows:

(72 events/yr) * (1,000 scf/event) * (0.045 lb/scf) * (5.00 % VOC) / (2,000 lb/T) = 0.08 T/yr

SITE FUGITIVES POTENTIAL TO EMIT
POTENTIAL TO EMIT
COMPRESSOR STATION NO. 6 LAGUNA
TRANSWESTERN PIPELINE COMPANY, LLC

Component	Number of Components	Emission Factors [a] (lb/hr-component)	Annual Operating Hours (hr/yr)	Maximum VOC (wt%)	Maximum Benzene (wt%)	Maximum Carbon Dioxide (wt%)	Maximum Methane (wt%)	Reduction Credit [a] (wt%)	PTE VOC		PTE Benzene		PTE Carbon Dioxide	PTE Methane
									Hourly [b] (lb/hr)	Annual [c] (T/yr)	Hourly [b] (lb/hr)	Annual [c] (T/yr)	Annual [c] (T/yr)	Annual [c] (T/yr)
Valves														
Gas Streams (Non-Monitored)	416	0.00992	8,760	5.0%	0.005%	5.00%	95.00%	0%	0.21	0.90	0.0002	0.0009	0.90	17.17
Water/Light Oil Streams (Non-Monitored)	33	0.000216	8,760	100.0%	0.000%	0.000%	0.000%	0%	0.007	0.031	0.00	0.00	0.00	0.00
Heavy Oil Streams (Non-Monitored)	20	0.0000385	8,760	100.0%	0.000%	0.000%	0.000%	0%	0.00	0.00	0.00	0.00	0.00	0.00
Relief Valves														
Gas Streams (Non-Monitored)	21	0.0194	8,760	5.0%	0.005%	5.00%	95.00%	0%	0.020	0.09	0.00002	0.0001	0.09	1.70
Flanges														
Gas Streams (Non-Monitored)	1248	0.00086	8,760	5.0%	0.005%	5.00%	95.00%	0%	0.1	0.2	0.00	0.00	0.24	4.47
Water/Light Oil Streams (Non-Monitored)	66	0.000006	8,760	100.0%	0.000%	0.000%	0.000%	0%	0.0	0.0	0.00	0.00	0.00	0.00
Compressor Seals														
Gas Streams (Non-Monitored)	5	0.0194	8,760	5.0%	0.005%	5.00%	95.00%	0%	0.005	0.02	0.000005	0.00002	0.02	0.40
Connectors														
Gas Streams (Non-Monitored)	365	0.000044	8,760	5.0%	0.005%	5.00%	95.00%	0%	0.008	0.04	0.00001	0.00003	0.04	0.67
Water/Light Oil Streams (Non-Monitored)	53	0.0000243	8,760	100.0%	0.000%	0.000%	0.000%	0%	0.01	0.06	0.00	0.00	0.00	0.00
Heavy Oil Streams (Non-Monitored)	30	0.0000165	8,760	100.0%	0.000%	0.000%	0.000%	0%	0.00	0.00	0.00	0.00	0.00	0.00
Pumps														
Water/Light Oil Streams (Non-Monitored)	2	0.000052	8,760	100.0%	0.000%	0.000%	0.000%	0%	0.0001	0.0005	0.00	0.00	0.00	0.00
								TOTALS:	0.36	1.34	0.0002	0.001	1.29	24.41

[a] Fugitive Emission Factors and Reduction Credits are per TCEQ Technical Guidance Document for Equipment Leak Fugitives, dated October 2000.

[b] Hourly VOC emission rates are calculated as follows:
(416 components) * (0.00992 lb/hr-component) * (5.00 % VOC) * (100% - 0.0 % reduction credit) = 0.21 lb/hr

[c] Annual VOC emission rates are calculated as follows:
(416 components) * (0.00992 lb/hr-component) * (8,760 hr/yr) * (5.00 % VOC) * (100% - 0.0 % reduction credit) / (2,000 lb/T) = 0.90 T/yr

FLASHING FROM THE CONDENSATE TANK
POTENTIAL TO EMIT
COMPRESSOR STATION NO. 6 LAGUNA
TRANSWESTERN PIPELINE COMPANY, LLC

Company Name:	Transwestern Pipeline Company	Permit No.:	R6NM-01-08R1
Facility Name:	Laguna Compressor Station	Date:	September 26, 2012

Volatile Organic Compound Emission Calculation for Flashing from the Condensate Tank

Vasquez - Beggs Solution Gas/Oil Ratio Correlation Method

(For Estimating VOC Flashing Emissions. Using Stock Tank Gas-Oil Ratios For Crude Oil Facilities)

INPUTS:

Stock Tank API Gravity	50.00	API
Separator Pressure (psig)	700.00	P
Separator Temperature (°F)	70.00	Ti
Separator Gas Gravity at Initial Condition	1.18	SGi
Stock Tank Barrels of Oil per day (BOPD)	1.37	Q
Stock Tank Gas Molecular Weight	69.00	MW
Fraction VOC (C3+) of Stock Tank Gas	0.95	VOC
Atmospheric Pressure (psia)	14.70	Patm

CONSTRAINTS:

16.00	>API>	58.00	°API
50.00	>P+Patm>	5250.00	(psia)
70.00	> Ti >	295.00	(°F)
0.56	>SGi>	1.18	(MW/28.97)
None	> Q >	None	(BOPD)
18.00	>MW>	125.00	(lb/lb-mole)
0.50	>Voc>	1.00	Fraction
20.00	> Rs >	2070.00	(scf/STB)

SGx = Dissolved gas gravity at 100 psig = SGi [1.0+0.00005912*API*Ti*Log(Pi/114.7)]

SGx =	1.37

Rs = (C1 * SGx * Pi^C2) exp ((C3 * API) / (Ti + 460))

Where:

Rs	Gas/Oil Ratio of liquid at pressure of interest
SGx	Dissolved gas gravity at 100 psig
Pi	Pressure of initial condition (psia)
API	API Gravity of liquid hydrocarbon at final condition
Ti	Temperature of initial condition (F)

Constants

	°API Gravity		
°API? →	< 30	>= 30	Given °API
C1	0.04	0.02	0.04
C2	1.09	1.19	1.09
C3	25.72	23.93	25.72

Rs =	652.53	scf/bbl	*for P + Patm =* *714.70*

THC = Rs * Q * MW * 1/385 scf/lb-mole * 365 D/Yr * 1 ton/2000 lb.s

THC	Total Hydrocarbon (tons/year)
Rs	Solution Gas/Oil Ratio (scf/STB)
Q	Oil Production Rate (bbl/day)
MW	Molecular Weight of Stock Tank Gas (lb/lb-mole)
385.00	Volume of 1 lb-mole of gas at 14.7 psia and 68 F (WAQS&R Std Cond)

THC =	29.2	TPY

VOC = THC * Frac. of C3+ in the Stock Tank Vapor

VOC =	27.7	TPY	*from "FLASHING" of oil from separator to tank press*

FLASHING FROM THE MIST ELIMINATOR
POTENTIAL TO EMIT
COMPRESSOR STATION NO. 6 LAGUNA
TRANSWESTERN PIPELINE COMPANY, LLC

Company Name: Transwestern Pipeline Company
Facility Name: Laguna Compressor Station
Permit No.: R6NM-01-08R1
Date: September 26, 2012

Volatile Organic Compound Emission Calculation for Flashing from the Mist Eliminator

Vasquez - Beggs Solution Gas/Oil Ratio Correlation Method

(For Estimating VOC Flashing Emissions, Using Stock Tank Gas-Oil Ratios For Crude Oil Facilities)

INPUTS:

Stock Tank API Gravity	50.00	API
Separator Pressure (psig)	700.00	P
Separator Temperature (°F)	70.00	Ti
Separator Gas Gravity at Initial Condition	1.18	SGi
Stock Tank Barrels of Oil per day (BOPD)	0.27	Q
Stock Tank Gas Molecular Weight	69.00	MW
Fraction VOC (C3+) of Stock Tank Gas	0.95	VOC
Atmospheric Pressure (psia)	14.70	Patm

CONSTRAINTS:

16.00	>API>	58.00	°API	ok
50.00	>P+Patm>	5250.00	(psia)	ok
70.00	> Ti >	295.00	(°F)	ok
0.56	>SGi>	1.18	(MW/28.97)	ok
None	> Q >	None	(BOPD)	ok
18.00	>MW>	125.00	(lb/lb-mole)	ok
0.50	>Voc>	1.00	Fraction	ok
20.00	> Rs >	2070.00	(scf/STB)	ok

SGx = Dissolved gas gravity at 100 psig = SGi [1.0+0.00005912*API*Ti*Log(Pi/114.7)]

SGx =	1.37

Rs = (C1 * SGx * Pi^C2) exp ((C3 * API) / (Ti + 460))

Where:

Rs	Gas/Oil Ratio of liquid at pressure of interest
SGx	Dissolved gas gravity at 100 psig
Pi	Pressure of initial condition (psia)
API	API Gravity of liquid hydrocarbon at final condition
Ti	Temperature of initial condition (F)

Constants

	°API Gravity		
°APTI →	< 30	>= 30	Given °API
C1	0.04	0.02	0.04
C2	1.09	1.19	1.09
C3	25.72	23.93	25.72

Rs =	652.53	scf/bbl	*for P + Patm =*	*714.70*

THC = Rs * Q * MW * 1/385 scf/lb-mole * 365 D/Yr * 1 ton/2000 lb.s

THC	Total Hydrocarbon (tons/year)
Rs	Solution Gas/Oil Ratio (scf/STB)
Q	Oil Production Rate (bbl/day)
MW	Molecular Weight of Stock Tank Gas (lb/lb-mole)
385.00	Volume of 1 lb-mole of gas at 14.7 psia and 68 F (WAQS&R Std Cond)

THC =	5.8	TPY	(Assumes Continuous Operation)

VOC = THC * Frac. of C3+ in the Stock Tank Vapor

VOC =	5.5	TPY	*from "FLASHING" of oil from separator to tank press from pigging activities*

FIXED ROOF TANK MAXIMUM HOURLY WORKING LOSSES

POTENTIAL TO EMIT

COMPRESSOR STATION NO. 6 LAGUNA

TRANSWESTERN PIPELINE COMPANY, LLC

Working Loss Formula:

Lw (lb/hour) = (0.001)(Mw)(P)(Q)(Kn)(Kp)

Where:

Lw = Storage Tank Working Losses, lb/hr
MW = Molecular Weight of Vapor in Storage Tank, lb/lb-mole
Pmax = True Vapor Pressure at Daily Maximum Liquid Surface Temperature, psia
Q = Hourly Throughput, bbl/hour
Kn = Turnover Factor from AP-42 , dimensionless
Kp = Product Factor, dimensionless. Kp equal 1.0 for liquids and Kp equal 0.75 for crude oil
DRE = Destruction efficiency of the control device, %

Tank ID	Material Stored	Capacity (gal)	Max. Loading Rate (gal/hr)	MW (lb/lb-mol)	Pmax (psia)	Q (bbl/hour)	Kn (unitless)	Kp (unitless)	Lw (lb/hr)	DRE (%)	Emissions (lb/hr)
T-2	Condensate	21,000	875	69	4.1397	21	1.0	1.00	6.00	**0%**	**6.00**
MIST	Condensate	1,100	46	69	4.1397	1	1.0	1.0	0.29	**0%**	**0.29**

SUMMARY OF STORAGE TANKS EMISSIONS

POTENTIAL TO EMIT

COMPRESSOR STATION NO. 6 LAGUNA

TRANSWESTERN PIPELINE COMPANY, LLC

		EPA Tanks 4.0.9d[a]		Maximum[b]	Flash Emissions[c] VOC		Flash Emissions[c] Benzene		VOC[d] Emissions		Benzene Emissions		Carbon Dioxide Emissions		Methane Emissions		CO_2e^{e} Emissions
Unit ID	Description	Working Loss (lb/yr)	Breathing Loss (lb/yr)	Hourly Loss lb/hr	Hourly (lb/hr)	Annual (T/yr)	Hourly (lb/hr)	Annual (T/yr)	Hourly (lb/hr)	Annual (T/yr)	Hourly (lb/hr)	Annual (T/yr)	Hourly (lb/hr)	Annual (T/yr)	Hourly (lb/hr)	Annual (T/yr)	Annual (T/yr)
T2	Condensate	56.11	883.53	6.00	0.003	27.70	0.000003	0.03	6.00	28.17	0.01	0.06	0.003	27.70	0.06	526.30	11,080.00
MIST	Condensate	19.64	54.41	0.29	0.001	5.50	0.000001	0.01	0.29	5.54	0.0003	0.02	0.001	5.50	0.02	104.50	2,200.00

[a] These working and breathing emissions are calculated using EPA Tanks 4.0.9d program found on the following pages. A conservative Gasoling RVP of 6 is used to represent the material in the tank and mist eliminator.

[b] The hourly emissions for the tanks are from the Fixed Roof Tank Maximum Hourly Working Losses Calculation sheet.

[c] Vasquez - Beggs Solution Gas/Oil Ratio Correlation Method was used to calculate flash emissions for VOC.

[d] An example calculation of the hourly VOC emissions for Unit ID T-2 follows:

VOC (lb/hr) = (Maximum Hourly Emission Loss, lb/hr)+(Vasquez-Beggs Tanks Hourly Emissions, lb/hr)

VOC (lb/hr) = (6.00 lb/yr) + (0.003 lb/hr)

= 6.00 lb/hr

[e] An example calculation of the annual VOC emissions for Unit ID T-2 follows:

VOC (T/yr) = ((Working Loss, lb/yr)+(Breathing Loss, lb/yr))/(2,000 ton/yr)+(Vasquez-Beggs Tanks Annual Emissions, T/yr)

VOC (T/yr) = ((56.11 lb/yr)+(883.53 lb/yr))/(2,000 lb/ton)+(27.70 T/yr)

= 28.17 T/yr

[f] An example calculation of annual CO_2e emissions for Unit ID T-2 follows:

CO_2e (T/yr) = ((526.30 T/yr Methane) * 21) + (27.70 T/Yr CO_2)

= 11,080.00 T/yr

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

Identification

User Identification:	Laguna Mist Eliminator 1,100 gallon
City:	Albuquerque
State:	New Mexico
Company:	Transwestern Pipeline Company, LLC
Type of Tank:	Vertical Fixed Roof Tank
Description:	Laguna - Mist Eliminator Vessel Capacity 1,100 gallon vessel

Tank Dimensions

Shell Height (ft):	7.00
Diameter (ft):	5.00
Liquid Height (ft) :	5.00
Avg. Liquid Height (ft):	5.00
Volume (gallons):	1,000.00
Turnovers:	4.20
Net Throughput(gal/yr):	4,200.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft):	0.00
Slope (ft/ft) (Cone Roof):	0.00

Breather Vent Settings

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

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

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Laguna Mist Eliminator 1,100 gallon - Vertical Fixed Roof Tank
Albuquerque, New Mexico

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 6)	All	55.54	51.41	65.66	56.17	2.8464	2.4472	3.2971	68.0000			92.00	Option 4: RVP=6, ASTM Slope=3

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

Laguna Mist Eliminator 1,100 gallon - Vertical Fixed Roof Tank
Albuquerque, New Mexico

Annual Emission Calculations

Standing Losses (lb):	54.8073
Vapor Space Volume (cu ft):	39.2699
Vapor Density (lb/cu ft):	0.0353
Vapor Space Expansion Factor:	0.1399
Vented Vapor Saturation Factor:	0.7682
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	39.2699
Tank Diameter (ft):	5.0000
Vapor Space Outage (ft):	2.0000
Tank Shell Height (ft):	7.0000
Average Liquid Height (ft):	5.0000
Roof Outage (ft):	0.0000
Roof Outage (Cone Roof):	
Roof Outage (ft):	0.0000
Roof Height (ft):	0.0000
Roof Slope (ft/ft):	0.0000
Shell Radius (ft):	2.5000
Vapor Density:	
Vapor Density (lb/cu ft):	0.0353
Vapor Molecular Weight (lb/lb-mole):	69.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	2.8464
Daily Avg. Liquid Surface Temp. (deg. R):	518.2062
Daily Average Ambient Temp. (deg. F):	56.1542
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	515.8442
Tank Paint Solar Absorptance (Shell):	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,765.3167
Vapor Space Expansion Factor:	
Vapor Space Expansion Factor:	0.1399
Daily Vapor Temperature Range (deg. R):	28.5089
Daily Vapor Pressure Range (psia):	0.8488
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	2.8464
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	2.4472
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	3.2971
Daily Avg. Liquid Surface Temp. (deg R):	518.2062
Daily Min. Liquid Surface Temp. (deg R):	511.0790
Daily Max. Liquid Surface Temp. (deg R):	525.3334
Daily Ambient Temp. Range (deg. R):	27.9250
Vented Vapor Saturation Factor:	
Vented Vapor Saturation Factor:	0.7682
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	2.8464

Vapor Space Outage (ft):	2.0000
Working Losses (lb):	19.6399
Vapor Molecular Weight (lb/lb-mole):	69.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	2.8464
Annual Net Throughput (gal/yr.):	4,200.0000
Annual Turnovers:	4.2000
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	1,000.0000
Maximum Liquid Height (ft):	5.0000
Tank Diameter (ft):	5.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	74.0472

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

Emissions Report for: Annual

Laguna Mist Eliminator 1,100 gallon - Vertical Fixed Roof Tank
Albuquerque, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Gasoline (RVP 6)	19.64	54.41	74.05

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

Identification

User Identification:	Laguna T-2
City:	Albuquerque
State:	New Mexico
Company:	Transwestern Pipeline Company, LLC
Type of Tank:	Vertical Fixed Roof Tank
Description:	Laguna - T-2 Condensate Tank 21,000 gallon vessel

Tank Dimensions

Shell Height (ft)	25.00
Diameter (ft)	12.00
Liquid Height (ft) :	13.00
Avg. Liquid Height (ft)	12.50
Volume (gallons):	12,000.00
Turnovers:	1.00
Net Throughput(gal/yr):	12,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.00

Breather Vent Settings

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

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

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Laguna T-2 - Vertical Fixed Roof Tank
Albuquerque, New Mexico

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 6)	All	58.54	51.41	65.66	55.17	2.8464	2.4472	3.2971	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3

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

Laguna T-2 - Vertical Fixed Roof Tank
Albuquerque, New Mexico

Annual Emission Calculations

Standing Losses (lb):	883.5304
Vapor Space Volume (cu ft):	1,413.7167
Vapor Density (lb/cu ft):	0.0353
Vapor Space Expansion Factor:	0.1359
Vented Vapor Saturation Factor:	0.3465
Tank Vapor Space Volume	
Vapor Space Volume (cu ft):	1,413.7167
Tank Diameter (ft):	12.0000
Vapor Space Outage (ft):	12.5000
Tank Shell Height (ft):	25.0000
Average Liquid Height (ft):	12.5000
Roof Outage (ft):	0.0000
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.0000
Roof Height (ft):	3.0000
Roof Slope (ft/ft):	0.0000
Shell Radius (ft):	6.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0353
Vapor Molecular Weight (lb/lb-mole):	69.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	2.8464
Daily Avg. Liquid Surface Temp. (deg. R):	518.2062
Daily Average Ambient Temp. (deg. F):	56.1642
Ideal Gas Constant R (psia cu ft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	515.8442
Tank Paint Solar Absorptance (Shell):	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation Factor (Btu/sq ft day):	1,785.3167
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.1359
Daily Vapor Temperature Range (deg. R):	28.5089
Daily Vapor Pressure Range (psia):	0.8486
Breather Vent Press. Setting Range (psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	2.8464
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	2.4472
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	3.2971
Daily Avg. Liquid Surface Temp. (deg R):	518.2062
Daily Min. Liquid Surface Temp. (deg R):	511.0795
Daily Max. Liquid Surface Temp. (deg R):	525.3334
Daily Ambient Temp. Range (deg. R):	27.9250
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.3465
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	2.8464

Vapor Space Outage (ft):	12.5000
Working Losses (lb):	56.1141
Vapor Molecular Weight (lb/lb-mole):	69.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	2.8464
Annual Net Throughput (gal/yr.):	12,000,0000
Annual Turnovers:	1.0000
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	12,000.0000
Maximum Liquid Height (ft):	13.0000
Tank Diameter (ft):	12.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	939.6446

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

Emissions Report for: Annual

Laguna T-2 - Vertical Fixed Roof Tank
Albuquerque, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Gasoline (RVP 6)	56.11	883.53	939.64

TANKS 4.0.9d
Emissions Report - Detail Format
Total Emissions Summaries - All Tanks in Report

Emissions Report for: Annual

Tank Identification				Losses (lbs)
Laguna Mist Eliminator 1,100 gallon	Transwestern Pipeline Company, LLC	Vertical Fixed Roof Tank	Albuquerque, New Mexico	74.05
Laguna T-2	Transwestern Pipeline Company, LLC	Vertical Fixed Roof Tank	Albuquerque, New Mexico	939.64
Total Emissions for all Tanks:				1,013.69

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

Identification

User Identification:	Laguna Mist Eliminator 1,100 gallon
City:	Albuquerque
State:	New Mexico
Company:	Transwestern Pipeline Company, LLC
Type of Tank:	Vertical Fixed Roof Tank
Description:	Laguna - Mist Eliminator Vessel Capacity 1,100 gallon vessel

Tank Dimensions

Shell Height (ft):	7.00
Diameter (ft):	5.00
Liquid Height (ft):	5.00
Avg. Liquid Height (ft):	5.00
Volume (gallons):	1,000.00
Turnovers:	4.20
Net Throughput(gal/yr):	4,200.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.00

Breather Vent Settings

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

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

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Laguna Mist Eliminator 1,100 gallon - Vertical Fixed Roof Tank
Albuquerque, New Mexico

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 6)	Jan	47.89	42.17	53.62	56.17	2.2679	1.9989	2.5655	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3
Gasoline (RVP 6)	Feb	50.81	44.36	57.26	56.17	2.4159	2.0987	2.7712	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3
Gasoline (RVP 6)	Mar	54.35	47.06	61.64	56.17	2.6057	2.2265	3.0358	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3
Gasoline (RVP 6)	Apr	58.66	50.46	66.86	56.17	2.8537	2.3978	3.3779	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3
Gasoline (RVP 6)	May	62.97	54.46	71.47	56.17	3.1201	2.6120	3.7058	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3
Gasoline (RVP 6)	Jun	67.53	58.77	76.29	56.17	3.4243	2.8603	4.0755	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3
Gasoline (RVP 6)	Jul	69.19	61.28	77.09	56.17	3.5405	3.0137	4.1397	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3
Gasoline (RVP 6)	Aug	67.74	60.38	75.10	56.17	3.4381	2.9586	3.9811	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3
Gasoline (RVP 6)	Sep	64.12	57.13	71.14	56.17	3.1848	2.7618	3.6813	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3
Gasoline (RVP 6)	Oct	58.55	51.73	65.37	56.17	2.8472	2.4640	3.2775	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3
Gasoline (RVP 6)	Nov	52.41	46.40	58.41	56.17	2.5002	2.1950	2.8352	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3
Gasoline (RVP 6)	Dec	48.22	42.74	53.70	56.17	2.2841	2.0246	2.5702	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3

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

Laguna Mist Eliminator 1,100 gallon - Vertical Fixed Roof Tank
Albuquerque, New Mexico

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Standing Losses (lb)	2.7195	3.0224	4.2039	5.1846	6.3061	7.1754	6.9952	6.2187	5.1627	4.4166	3.1478	2.6155
Vapor Space Volume (cu ft)	39.2699	39.2699	39.2699	39.2699	39.2699	39.2699	39.2699	39.2699	39.2699	39.2699	39.2699	39.2699
Vapor Density (lb/cu ft)	0.0287	0.0304	0.0326	0.0354	0.0384	0.0418	0.0430	0.0419	0.0392	0.0353	0.0314	0.0285
Vapor Space Expansion Factor	0.0964	0.1135	0.1352	0.1622	0.1796	0.1959	0.1836	0.1663	0.1496	0.1337	0.1075	0.0924
Vented Vapor Saturation Factor	0.8062	0.7961	0.7838	0.7678	0.7515	0.7357	0.7271	0.7328	0.7470	0.7682	0.7905	0.8051
Tank Vapor Space Volume												
Vapor Space Volume (cu ft)	39.2699	39.2699	39.2699	39.2699	39.2699	39.2699	39.2699	39.2699	39.2699	39.2699	39.2699	39.2699
Tank Diameter (ft)	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000
Vapor Space Outage (ft)	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
Tank Shell Height (ft)	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000
Average Liquid Height (ft)	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000
Roof Outage (ft)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Outage (Cone Roof)												
Roof Outage (ft)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Height (ft)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Slope (ft/ft)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Shell Radius (ft)	2.5000	2.5000	2.5000	2.5000	2.5000	2.5000	2.5000	2.5000	2.5000	2.5000	2.5000	2.5000
Vapor Density												
Vapor Density (lb/cu ft)	0.0287	0.0304	0.0326	0.0354	0.0384	0.0418	0.0430	0.0419	0.0392	0.0353	0.0314	0.0285
Vapor Molecular Weight (lb/lb-mole)	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia)	2.2679	2.4159	2.6057	2.8537	3.1201	3.4243	3.5405	3.4391	3.1948	2.8472	2.5002	2.2841
Daily Avg. Liquid Surface Temp. (deg. R)	507.5636	510.4795	514.0158	518.3292	522.6357	527.2019	528.8587	527.4145	523.7886	518.2268	512.9765	507.8892
Daily Average Ambient Temp. (deg. F)	34.2500	39.8500	46.8000	55.2000	64.1500	74.1500	78.4500	75.8000	68.5500	57.0000	44.2500	35.3000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R))	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg. R)	515.8442	515.8442	515.8442	515.8442	515.8442	515.8442	515.8442	515.8442	515.8442	515.8442	515.8442	515.8442
Tank Paint Solar Absorptance (Shell)	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700
Tank Paint Solar Absorptance (Roof)	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700
Daily Total Solar Insulation Factor (Btu/sqft/day)	1,817.1676	1,921.1123	1,709.7680	2,169.4923	2,443.9408	2,567.6661	2,392.5551	2,155.3558	1,950.7856	1,498.1088	1,101.2442	915.6412
Vapor Space Expansion Factor												
Vapor Space Expansion Factor	0.0964	0.1135	0.1352	0.1622	0.1796	0.1959	0.1836	0.1663	0.1496	0.1337	0.1075	0.0924
Daily Vapor Temperature Range (deg. R)	22.9137	25.8005	29.1625	32.7808	34.0251	35.0461	31.6205	29.4103	25.6814	27.2357	24.0339	21.9255
Daily Vapor Pressure Range (psia)	0.5670	0.6725	0.8093	0.9801	1.0938	1.2152	1.1298	1.0226	0.9195	0.8138	0.6442	0.5457
Breather Vent Press. Setting Range (psia)	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia)	2.2679	2.4159	2.6057	2.8537	3.1201	3.4243	3.5405	3.4391	3.1948	2.8472	2.5002	2.2841
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia)	1.5989	2.0987	2.2268	2.3978	2.6120	2.8603	3.0137	2.9586	2.7618	2.4640	2.1950	2.0246
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia)	2.8659	2.7712	3.0358	3.3779	3.7058	4.0755	4.1397	3.9511	3.6813	3.2778	2.8392	2.5702
Daily Avg. Liquid Surface Temp. (deg R)	507.5636	510.4795	514.0158	518.3292	522.6357	527.2019	528.8587	527.4145	523.7886	518.2268	512.9765	507.8892
Daily Min. Liquid Surface Temp. (deg R)	501.8352	504.0297	506.7251	510.1315	514.1295	518.4404	520.9536	520.0619	516.7652	511.3969	506.0650	502.4076
Daily Max. Liquid Surface Temp. (deg R)	513.2920	516.9289	521.3064	526.5269	531.1420	535.9634	536.7638	534.7670	530.8058	525.0448	518.9850	513.3709
Daily Ambient Temp. Range (deg. R)	25.1000	27.1000	29.2000	31.2000	31.1000	31.7000	28.1000	26.4000	26.7000	28.0000	26.1000	24.4000
Vented Vapor Saturation Factor												
Vented Vapor Saturation Factor	0.8062	0.7961	0.7838	0.7678	0.7515	0.7357	0.7271	0.7328	0.7470	0.7682	0.7905	0.8051
Vapor Pressure at Daily Average Liquid Surface Temperature (psia)	2.2679	2.4159	2.6057	2.8537	3.1201	3.4243	3.5405	3.4391	3.1948	2.8472	2.5002	2.2841

Vapor Space Outage (ft)	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
Working Losses (lb)	1.3041	1.3851	1.4883	1.6409	1.7941	1.9690	2.3358	1.9775	1.8378	1.6372	1.4376	1.3135
Vapor Molecular Weight (lb/lb-mole)	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia)	2.2679	2.4159	2.6057	2.8537	3.1201	3.4243	3.5405	3.4391	3.1948	2.8472	2.5002	2.2841
Net Throughput (gallons)	350.0000	350.0000	350.0000	350.0000	350.0000	350.0000	350.0000	350.0000	350.0000	350.0000	350.0000	350.0000
Annual Turnovers	4.2000	4.2000	4.2000	4.2000	4.2000	4.2000	4.2000	4.2000	4.2000	4.2000	4.2000	4.2000
Turnover Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Maximum Liquid Volume (gal)	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000
Maximum Liquid Height (ft)	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000
Tank Diameter (ft)	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000
Working Loss Product Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total Losses (lb)	4.0236	4.4116	5.7022	6.8354	8.1001	9.1474	9.3310	8.1961	6.9997	6.2537	4.5795	3.5319

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

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

Laguna Mist Eliminator 1,100 gallon - Vertical Fixed Roof Tank
Albuquerque, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Gasoline (RVP 6)	19.83	57.18	77.01

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

Identification

User Identification:	Laguna T-2
City:	Albuquerque
State:	New Mexico
Company:	Transwestern Pipeline Company, LLC
Type of Tank:	Vertical Fixed Roof Tank
Description:	Laguna - T-2 Condensate Tank 21,000 gallon vessel

Tank Dimensions

Shell Height (ft):	25.00
Diameter (ft):	12.00
Liquid Height (ft) :	15.00
Avg. Liquid Height (ft):	12.50
Volume (gallons):	12,000.00
Turnovers:	1.00
Net Throughput(gal/yr):	12,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.00

Breather Vent Settings

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

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

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Laguna T-2 - Vertical Fixed Roof Tank
Albuquerque, New Mexico

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 6)	Jan	47.89	42.17	53.62	56.17	2.2679	1.9959	2.5659	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3
Gasoline (RVP 6)	Feb	50.81	44.95	57.26	56.17	2.4159	2.0987	2.7712	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3
Gasoline (RVP 6)	Mar	54.35	47.06	61.64	56.17	2.6057	2.2268	3.0358	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3
Gasoline (RVP 6)	Apr	58.68	50.46	66.86	56.17	2.8537	2.3978	3.3779	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3
Gasoline (RVP 6)	May	62.67	54.45	71.47	56.17	3.1201	2.6120	3.7058	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3
Gasoline (RVP 6)	Jun	67.63	58.73	76.29	56.17	3.4243	2.8503	4.0755	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3
Gasoline (RVP 6)	Jul	69.19	61.28	77.39	56.17	3.5405	3.0137	4.1397	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3
Gasoline (RVP 6)	Aug	67.74	60.39	75.10	56.17	3.4391	2.9586	3.9611	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3
Gasoline (RVP 6)	Sep	64.12	57.10	71.14	56.17	3.1948	2.7618	3.6812	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3
Gasoline (RVP 6)	Oct	58.55	51.73	65.37	56.17	2.8472	2.4640	3.2778	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3
Gasoline (RVP 6)	Nov	52.41	46.40	58.41	56.17	2.5002	2.1950	2.8392	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3
Gasoline (RVP 6)	Dec	48.22	42.74	53.70	56.17	2.2841	2.0246	2.5702	69.0000			92.00	Option 4: RVP=6, ASTM Slope=3

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

Laguna T-2 - Vertical Fixed Roof Tank
Albuquerque, New Mexico

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Standing Losses (lb):	48.5255	52.5557	78.8433	94.2529	95.4582	107.7595	103.5208	93.1809	79.5315	71.7125	53.8646	46.5901
Vapor Space Volume (cu ft):	1,413.7167	1,413.7167	1,413.7167	1,413.7167	1,413.7167	1,413.7167	1,413.7167	1,413.7167	1,413.7167	1,413.7167	1,413.7167	1,413.7167
Vapor Density (lb/cu ft):	0.0257	0.0304	0.0326	0.0354	0.0384	0.0418	0.0430	0.0419	0.0392	0.0353	0.0314	0.0289
Vapor Space Expansion Factor:	0.0964	0.1135	0.1352	0.1622	0.1796	0.1989	0.1836	0.1663	0.1496	0.1337	0.1075	0.0924
Vented Vapor Saturation Factor:	0.3998	0.3845	0.3668	0.3480	0.3260	0.3059	0.2989	0.3050	0.3209	0.3485	0.3765	0.3979
Tank Vapor Space Volume:												
Vapor Space Volume (cu ft):	1,413.7167	1,413.7167	1,413.7167	1,413.7167	1,413.7167	1,413.7167	1,413.7167	1,413.7167	1,413.7167	1,413.7167	1,413.7167	1,413.7167
Tank Diameter (ft):	12.0000	12.0000	12.0000	12.0000	12.0000	12.0000	12.0000	12.0000	12.0000	12.0000	12.0000	12.0000
Vapor Space Outage (ft):	12.5000	12.5000	12.5000	12.5000	12.5000	12.5000	12.5000	12.5000	12.5000	12.5000	12.5000	12.5000
Tank Shell Height (ft):	25.0000	25.0000	25.0000	25.0000	25.0000	25.0000	25.0000	25.0000	25.0000	25.0000	25.0000	25.0000
Average Liquid Height (ft):	12.5000	12.5000	12.5000	12.5000	12.5000	12.5000	12.5000	12.5000	12.5000	12.5000	12.5000	12.5000
Roof Outage (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Outage (Cone Roof):												
Roof Outage (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Height (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Slope (ft/ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Shell Radius (ft):	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000
Vapor Density												
Vapor Density (lb/cu ft):	0.0257	0.0304	0.0326	0.0354	0.0384	0.0418	0.0430	0.0419	0.0392	0.0353	0.0314	0.0289
Vapor Molecular Weight (lb/lb-mole):	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	2.2679	2.4159	2.6057	2.8537	3.1201	3.4243	3.5405	3.4391	3.1948	2.8472	2.5002	2.2841
Daily Avg. Liquid Surface Temp. (deg R):	507.5636	510.4758	514.0158	518.3292	522.6357	527.2019	528.8587	527.4145	523.7886	518.2298	512.0765	507.8892
Daily Average Ambient Temp. (deg F):	34.2500	39.8500	46.8000	55.2000	64.1500	74.1500	78.4500	76.8000	68.5500	57.0000	44.2500	35.3000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg. R):	515.8442	515.8442	515.8442	515.8442	515.8442	515.8442	515.8442	515.8442	515.8442	515.8442	515.8442	515.8442
Tank Paint Solar Absorptance (Shell):	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700
Daily Total Solar Insulation Factor (Btu/sqft/day):	1,017.1676	1,321.1123	1,709.7880	2,159.4923	2,443.9308	2,567.6681	2,392.5331	2,165.3555	1,863.7556	1,489.1068	1,101.2442	915.6412
Vapor Space Expansion Factor:												
Vapor Space Expansion Factor:	0.0964	0.1135	0.1352	0.1622	0.1796	0.1989	0.1836	0.1663	0.1496	0.1337	0.1075	0.0924
Daily Vapor Temperature Range (deg. R):	22.5137	25.8005	29.1625	32.7508	34.0251	35.2461	31.6206	29.4103	28.0514	27.2967	24.0329	21.8265
Daily Vapor Pressure Range (psia):	0.3470	0.4225	0.5093	0.6001	1.0938	1.2152	1.1259	1.0224	0.8195	0.6138	0.4442	0.3457
Breather Vent Press. Setting Range (psig):	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	2.2679	2.4159	2.6057	2.8537	3.1201	3.4243	3.5405	3.4391	3.1948	2.8472	2.5002	2.2841
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	1.9659	2.0927	2.2268	2.3978	2.6120	2.8603	3.0137	2.9586	2.7618	2.4640	2.1950	2.0246
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	2.9659	2.7712	3.0358	3.3779	3.7058	4.0755	4.1397	3.9611	3.6812	3.2778	2.8392	2.5702
Daily Avg. Liquid Surface Temp. (deg R):	507.5636	510.4758	514.0158	518.3292	522.6357	527.2019	528.8587	527.4145	523.7886	518.2298	512.0765	507.8892
Daily Min. Liquid Surface Temp. (deg R):	501.5552	504.0257	506.7251	510.1315	514.1295	518.4404	520.6636	520.0615	516.7682	511.3969	506.0680	502.4076
Daily Max. Liquid Surface Temp. (deg R):	513.2929	516.9286	521.3064	526.6293	531.1420	535.9634	536.7635	534.7670	530.6089	525.6445	518.0850	513.3796
Daily Ambient Temp. Range (deg. R):	25.1000	27.1000	28.2000	31.2000	31.1000	31.7000	28.1000	26.4000	25.7000	25.0000	26.1000	24.4000
Vented Vapor Saturation Factor:												
Vented Vapor Saturation Factor:	0.3998	0.3845	0.3668	0.3480	0.3260	0.3059	0.2989	0.3050	0.3209	0.3485	0.3765	0.3979
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	2.2679	2.4159	2.6057	2.8537	3.1201	3.4243	3.5405	3.4391	3.1948	2.8472	2.5002	2.2841

Vapor Space Outage (ft)	12.5000	12.5000	12.5000	12.5000	12.5000	12.5000	12.5000	12.5000	12.5000	12.5000	12.5000	12.5000
Working Losses (lb)	3.7259	3.5688	4.2809	4.6882	5.1259	5.6257	5.8166	5.6459	5.2485	4.8776	4.1074	3.7524
Vapor Molecular Weight (lb/lb-mole)	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000	69.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia)	2.2678	2.4159	2.6057	2.8537	3.1201	3.4243	3.5405	3.4351	3.1948	2.9472	2.5002	2.2841
Net Throughput (gal/mo.)	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000	1,000.0000
Annual Turnovers	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Turnover Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Maximum Liquid Volume (gal)	12,000.0000	12,000.0000	12,000.0000	12,000.0000	12,000.0000	12,000.0000	12,000.0000	12,000.0000	12,000.0000	12,000.0000	12,000.0000	12,000.0000
Maximum Liquid Height (ft)	13.0000	13.0000	13.0000	13.0000	13.0000	13.0000	13.0000	13.0000	13.0000	13.0000	13.0000	13.0000
Tank Diameter (ft)	12.0000	12.0000	12.0000	12.0000	12.0000	12.0000	12.0000	12.0000	12.0000	12.0000	12.0000	12.0000
Working Loss Product Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total Losses (lb)	52.2524	56.9246	75.1242	88.9511	103.6241	113.3552	109.3374	98.8308	86.0801	76.3901	57.9720	50.3426

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

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

Laguna T-2 - Vertical Fixed Roof Tank
Albuquerque, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Gasoline (RVP 8)	56.67	911.15	967.81

TANKS 4.0.9d
Emissions Report - Detail Format
Total Emissions Summaries - All Tanks in Report

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

Tank Identification				Losses (lbs)
Laguna Mist Eliminator 1,100 gallon	Transwestern Pipeline Company, LLC	Vertical Fixed Roof Tank	Albuquerque, New Mexico	77.01
Laguna T-2	Transwestern Pipeline Company, LLC	Vertical Fixed Roof Tank	Albuquerque, New Mexico	967.81
Total Emissions for all Tanks:				1,044.83

TRUCK LOADING POTENTIAL TO EMIT
POTENTIAL TO EMIT
COMPRESSOR STATION NO. 6 LAGUNA
TRANSWESTERN PIPELINE COMPANY, LLC

Sample Calculations:

Loading Loss = 12.46 * (Saturation Factor) * (True Vapor Pressure, psia) * (MW, lb/lb-mol) / (Temp., R) * (1 - Control Eff., wt%)

Loading Loss = 12.46 * (0.60) * (2.85 psia) * (69.0 lb/lb-mol) / (58.54 +460) R * (1 - 0.00) = 2.8316 lb/Mgal

Hourly PTE = (Hourly Throughput, Mgal/hr) * (Loading Loss, lb/Mgal) * (Condensate Fraction)

Hourly PTE = (9.00 Mgal/hr) * (2.8316 lb/Mgal) * (1.00) = 25.48 lb/hr

Annual PTE = (Annual Throughput, Mgal/yr) * (Loading Loss, lb/Mgal) / (2,000 lb/T) * (Condensate Fraction)

Annual PTE = (21.0 Mgal/yr) * (2.8316 lb/Mgal) / (2,000 lb/T) * (1.00) = 0.03 T/yr

Facility ID	Facility Name	Emission Point ID	Emission Point Name	Saturation Factor	Vapor Pressure (psia)	Molecular Weight (lb/mole)	Temp. (F)	Control Efficiency	Hourly Throughput (Mgals/hr)	Annual Throughput (Mgals/yr)	Condensate Fraction	Loading Loss (lb/Mgal)	VOC Hourly PTE (lb/hr)	VOC Annual PTE (T/yr)
TRUCK	Condensate Loading	TRUCK	Condensate Loading	0.60	2.8464	69	58.54	0.0%	9.0	21.0	1.00	2.8316	25.48	0.03
TRUCK	Separated Oil	TRUCK	Separated Oil Loading	0.60	2.8464	69	58.54	0.0%	9.0	4.2	1.00	2.8316	25.48	0.01

1. Calculation method and factors per AP-42, Section 5.2, dated June 2008.
2. True Vapor Pressure, Molecular Weight, and Temperature per EPA Tanks 4.0d Program and found on the following pages.