



**APR 24 2017**

Mr. Rolando I. Trevino  
PG & E Company - Kettlemen Compressor Station  
Attn: Air Permits  
P O Box 7640  
San Francisco, CA 94120

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)  
District Facility # C-904  
Project # C-1152842**

Dear Mr. Trevino:

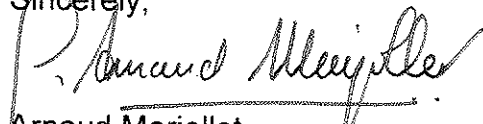
Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. You requested that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. This project authorizes the removal of monthly CO portable analyzer monitoring requirements and the installation of a 1,000 gallon aboveground pipeline liquids storage tank.

After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authorities to Construct with Certificates of Conformity. Please submit your comments within the 30-day public comment period, as specified in the enclosed public notice. Prior to operating with modifications authorized by the Authorities to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

If you have any questions, please contact Mr. Errol Villegas, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,



Arnaud Marjollet  
Director of Permit Services

Enclosures

cc: Tung Le, CARB (w/enclosure) via email  
cc: Gerardo C. Rios, EPA (w/enclosure) via email  
cc: Kou Thao, PG & E (w/enclosure) via email

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# San Joaquin Valley Air Pollution Control District

## Authority to Construct Application Review

Modify Monitoring Requirements for Turbines and Installation of AST for Pipeline Liquids

Facility Name: Pacific Gas and Electric Company – Kettleman Compressor Station  
Mailing Address: P O Box 7640  
San Francisco, CA 94120  
Contact Person: Kou Thao  
Telephone: (559) 481-5983  
E-Mail: [K1td@pge.com](mailto:K1td@pge.com)  
Application #(s): C-904-27-9, -28-9, -29-9 and -32-0  
Project #: C-1152842  
Deemed Complete: April 6, 2017

Date: April 8, 2017  
Engineer: Jesse A. Garcia  
Lead Engineer: Joven Refuerzo

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### I. Proposal

Pacific Gas and Electric Company – Kettleman Compressor Station (PG&E) has requested Authorities to Construct (ATCs) for the modification to three existing natural gas-fired turbines, K-1, K-2 and K-3 listed under permits C-904-27, -28 and -29, respectively, to:

- Remove portable analyzer checks
- Address monitoring device downtime, and
- Clarify the applicability of requirements during normal versus startup and shutdown operating modes.

These proposed modifications will be discussed and analyzed in further detail in the following sections.

Although there is a proposed change to monitoring conditions, the changes to the monitoring conditions are not changes in the method of operation and they do not lessen the stringency of the existing emissions limits; therefore, the proposed changes in monitoring conditions are not considered a "modification" per District Rule 2201.

The current ATCs and permits are included in Appendix B.

There are currently unimplemented ATCs associated with the turbines proposed to be modified; the applicant has indicated that the valid unimplemented ATCs C-904-27-7, -28-7 and -29-7 will be implemented prior to or concurrently with the ATCs issued in this project. Therefore, the following condition will be included on each ATC for the turbines to ensure compliance:

- Authority to Construct (ATC) C-904-XX-7 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct. [District Rule 2201]

PG&E also proposes to permit an existing 1,000 gallon aboveground pipeline liquids storage tank, Tank D-322, and a tanker truck loadout operation, as ATC C-904-32-0. Although the tank is existing, for the purposes of this evaluation, it will be considered a new emissions unit. PG&E amended the original proposal on April 5, to have the tank installed without a pressure/vacuum relief valve.

PG&E has received their Title V Permit. This modification can be classified as a Title V significant modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. PG&E must apply to administratively amend their Title V permit.

## II. Applicable Rules

- Rule 1081 Source Sampling (12/16/93)
- Rule 2201 New and Modified Stationary Source Review Rule (2/18/16)
- Rule 2410 Prevention of Significant Deterioration (6/16/11)
- Rule 2520 Federally Mandated Operating Permits (6/21/01)
- Rule 4001 New Source Performance Standards (4/14/99)
  - Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction, or Modification Commenced After July 23, 1984
  - Subpart GG - Standards of Performance for Stationary Gas Turbines
  - Subpart KKKK - Standards of Performance for Stationary Combustion Turbines
  - Subpart OOOO - Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution
- Rule 4002 National Emissions Standards for Hazardous Air Pollutants (5/20/04)
  - Subpart HH - National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities
  - Subpart HHH - National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities
- Rule 4101 Visible Emissions (2/17/05)
- Rule 4102 Nuisance (12/17/92)
- Rule 4201 Particulate Matter Concentration (12/17/92)
- Rule 4301 Fuel Burning Equipment (12/17/92)
- Rule 4623 Storage of Organic Liquids (5/19/05)
- Rule 4624 Transfer of Organic Liquid (12/20/07)
- Rule 4703 Stationary Gas Turbines (9/20/07)
- Rule 4801 Sulfur Compounds (12/17/92)
- 40 CFR Part 64 Compliance Assurance Monitoring
- CH&SC 41700 Health Risk Assessment
- CH&SC 42301.6 School Notice
- Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)

California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

### III. Project Location

The facility is located at 34453 Plymouth Ave in Avenal, CA. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

### IV. Process Description

The PG&E Kettleman Compressor Station serves to compress natural gas flowing through PG&E pipelines 300 A and B. Depending on the market demands, the gas flowing through this station may represent roughly 40% of PG&E's natural gas supply; in addition, the gas may be flowing from Canada to markets in Central and Southern California or from the Southwestern U.S. to markets in the Bay Area of California.

#### C-904-27, -28 and -29:

Three natural gas-fired gas turbine engines with dry low NO<sub>x</sub> combustors and selective catalytic reduction are used to drive natural gas compressors; no electricity is generated from these engines, and no heat recovery is performed on the turbine exhaust. The proposed project is only to revise monitoring for each of the three gas turbines. There will be no changes to their processing equipment or methods of operation as a result of these monitoring changes.

#### C-904-32:

The proposed Tank D-322 stores pipeline liquids that are collected in the natural gas compressor yard. During transmission, various hydrocarbon liquids accumulate in the pipeline and must be collected and removed. These pipeline liquids are captured in a filter separator and then stored in the proposed tank.

### V. Equipment Listing

#### Pre-Project Equipment Description:

- C-904-27-7: 58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-1) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, AND A IN-STACK NOX AND O<sub>2</sub> MONITORING SYSTEM; ALL DRIVING A NATURAL GAS PIPELINE COMPRESSOR
- C-904-28-7: 58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-2) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, AND A IN-STACK NOX AND O<sub>2</sub> MONITORING SYSTEM; ALL DRIVING A NATURAL GAS PIPELINE COMPRESSOR

C-904-29-7: 58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-3) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, AND A IN-STACK NOX AND O<sub>2</sub> MONITORING SYSTEM; ALL DRIVING A NATURAL GAS PIPELINE COMPRESSOR

Proposed Modification:

C-904-27-9: MODIFICATION OF 58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-1) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, NOX AND O<sub>2</sub> ANALYZERS, DRIVING A NATURAL GAS PIPELINE COMPRESSOR: REMOVE CO PORTABLE ANALYZER READING REQUIREMENTS (NOT REQUIRED BY RULE 4703)

C-904-28-9: MODIFICATION OF 58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-2) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, NOX AND O<sub>2</sub> ANALYZERS, DRIVING A NATURAL GAS PIPELINE COMPRESSOR: REMOVE CO PORTABLE ANALYZER READING REQUIREMENTS (NOT REQUIRED BY RULE 4703)

C-904-29-9: MODIFICATION OF 58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-3) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, NOX AND O<sub>2</sub> ANALYZERS, DRIVING A NATURAL GAS PIPELINE COMPRESSOR: REMOVE CO PORTABLE ANALYZER READING REQUIREMENTS (NOT REQUIRED BY RULE 4703)

C-904-32-0: PIPELINE LIQUID TRANSFER, STORAGE, AND LOADOUT OPERATION CONSISTING OF A 1,000 GALLON CONVAULT ABOVEGROUND STORAGE TANK (D-322) AND TANKER TRUCK LOADOUT EQUIPMENT

Post Project Equipment Description:

C-904-27-9: 58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-1) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, NOX AND O<sub>2</sub> ANALYZERS, DRIVING A NATURAL GAS PIPELINE COMPRESSOR

C-904-28-9: 58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-2) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, NOX AND O<sub>2</sub> ANALYZERS, DRIVING A NATURAL GAS PIPELINE COMPRESSOR

C-904-29-9: 58.14 MMBTU/HR (7,170 HP) SOLAR SOLONOX TAURUS 60-7032S GAS TURBINE ENGINE (K-3) SERVED BY A SOLONOX DRY LOW-NOX COMBUSTION SYSTEM, A SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM WITH AMMONIA INJECTION, NOX AND O2 ANALYZERS, DRIVING A NATURAL GAS PIPELINE COMPRESSOR

C-904-32-0: PIPELINE LIQUID TRANSFER, STORAGE, AND LOADOUT OPERATION CONSISTING OF A 1,000 GALLON CONVAULT ABOVEGROUND STORAGE TANK (D-322) AND TANKER TRUCK LOADOUT EQUIPMENT

## VI. Emission Control Technology Evaluation

### C-904-27, -28 and -29:

Emissions from natural gas-fired turbines include NO<sub>x</sub>, carbon monoxide (CO), particulate matter less than 10 microns in diameter (PM<sub>10</sub>), sulfur oxides (SO<sub>x</sub>), and volatile organic compounds (VOC).

PM<sub>10</sub> emissions are controlled through the use of PUC-quality natural gas, and an air intake filter house. VOC, CO and SO<sub>x</sub> emissions are controlled through the use of an oxidation catalyst and PUC-quality natural gas.

The level of NO<sub>x</sub> formation in a gas turbine is unique (by design factors) to each gas turbine model and operating mode. The primary factors that determine the amount of NO<sub>x</sub> generated are the combustor design, the types of fuel being burned, ambient conditions, operating cycles, and the power output of the turbine.

The design of the combustor is the most important factor influencing the formation of NO<sub>x</sub>. Design parameters controlling air/fuel ratio and the introduction of cooling air into the combustor strongly influence thermal NO<sub>x</sub> formation. Thermal NO<sub>x</sub> formation is primarily a function of flame temperature and residence time. The extent of fuel/air mixing prior to combustion also affects NO<sub>x</sub> formation. Simultaneous mixing and combustion results in localized fuel-rich zones that yield high flame temperatures in which substantial thermal NO<sub>x</sub> production takes place.

NO<sub>x</sub> emissions will be controlled by the use of dry low-NO<sub>x</sub> (DLN) combustors (SoLoNO<sub>x</sub> combustion system), and a Selective Catalytic Reduction (SCR) system.

Premixing air and fuel at a lean ratio approaching the lean flammability limit (approximately 50% excess air) significantly reduces peak flame temperature, resulting in minimum NO<sub>x</sub> formation during combustion. This is known as dry low NO<sub>x</sub> (DLN) combustion. Injecting water or steam into a conventional combustor provides a heat sink that effectively reduces peak flame temperature, thereby reducing thermal NO<sub>x</sub> formation.

Selective Catalytic Reduction systems selectively reduce NO<sub>x</sub> emissions by injecting ammonia (NH<sub>3</sub>) into the exhaust gas stream upstream of a catalyst. Nitrogen oxides, NH<sub>3</sub>, and O<sub>2</sub> react on the surface of the catalyst to form molecular nitrogen (N<sub>2</sub>) and H<sub>2</sub>O. SCR is capable of over 90 percent NO<sub>x</sub> reduction. Titanium oxide is the SCR catalyst material most commonly used, though vanadium pentoxide, noble metals, or zeolites are also used. The ideal operating temperature for a conventional SCR catalyst is 600 to 750 °F. Exhaust gas temperatures greater than the upper limit (750 °F) will cause NO<sub>x</sub> and NH<sub>3</sub> to pass through the catalyst unreacted.

**C-904-32:**

For the proposed tank, PG&E has not proposed any emission control devices.

## **VII. General Calculations**

### **A. Assumptions**

**For the turbines (C-904-27, -28 and -29):**

- The maximum operating schedule is 24 hours per day
- The unit is fired solely on PUC regulated natural gas
- Annual pre-project and post-project potential to emit is calculated based on 8,760 hours of operation per year
- Natural Gas Heating Value: 1,000 Btu/scf (District Practice)
- F-Factor for Natural Gas: 8,578 dscf/MMBtu corrected to 60°F (40 CFR 60, Appendix B)
- The maximum amount of oxides of nitrogen for startup and shutdown shall be limited to 171 ppmv @ 15% O<sub>2</sub> (per current PTO)
- The maximum amount of ammonia in the exhaust (ammonia slip) shall be limited to 10 ppmv @ 15% O<sub>2</sub> (per current PTO)
- Molecular weights of NH<sub>3</sub>: MW = 17 lb/lb-mol

**For the aboveground storage tank and tanker truck loadout (C-904-32):**

- VOC is the only pollutant of concern
- The pipeline liquid stored in the tank is a mixture of several VOC including gasoline range organics (C5-C12), diesel range organics (C10-C28), motor oil range organics (C24-C36), and several other organic compounds. The physical and chemical properties of this liquid are assumed to be similar to crude oil. Therefore, available data for crude oil will be used in the EPA's TANKS program (i.e., liquid molecular weight = 207 lb/lb-mol, vapor molecular weight = 50 lb/lb-mol, and density = 7.1 lb/gal @ 60°F) to estimate the tank emissions.

### **B. Emission Factors**

**For the turbines (C-904-27, -28 and -29):**

Although the turbines are not undergoing an NSR modification, the emissions calculations will be shown for reference purposes only.

Steady State Emission Factors:

The following steady state emission factors were taken from the current permits for these units. Conversions of these emission factors were taken from the application reviews performed for projects C-1084328 and C-1093441 for this facility.

Pollutant	Steady State Emission Factors		
NO <sub>x</sub>	--	0.0295 lb-NO <sub>x</sub> /MMBtu	8 ppmvd NO <sub>x</sub> (@ 15%O <sub>2</sub> )
SO <sub>x</sub>	--	0.0028 lb-SO <sub>x</sub> /MMBtu	--
PM10	0.3 lb-PM10/hr	0.0052 lb-PM10/MMBtu	--
CO	--	0.1121 lb-CO/MMBtu	50 ppmvd CO (@ 15%O <sub>2</sub> )
VOC	--	0.0320 lb-VOC/MMBtu	25 ppmvd VOC (@ 15%O <sub>2</sub> )
NH <sub>3</sub>	--	0.0136 lb-NH <sub>3</sub> /MMBtu	10 ppmvd NH <sub>3</sub> (@ 15%O <sub>2</sub> )

Startup and Shutdown Emission Factors:

The maximum startup and shutdown emission factor for NO<sub>x</sub> emissions was taken from the current permits for these turbines.

Pollutant	Startup and Shutdown Emission Factors	
NO <sub>x</sub>	0.6203 lb-NO <sub>x</sub> /MMBtu	171 ppmvd NO <sub>x</sub> (@ 15%O <sub>2</sub> )

**For the aboveground storage tank and tanker truck loadout (C-904-32):**

The proposed operation is expected to have emissions from the following activities:

Tank emissions

The potential emissions will be estimated using EPA's TANKS 4.0.d program. Therefore, EF2 is not listed here.

Truck loadout process

*Truck loading emissions:*

EPA's AP-42, Section 5.2, lists the following equation to estimate the emissions from loading petroleum liquids:



EF2 = 12.46 SPM/T, where

S = Saturation factor (0.5, submerged loading of a clean cargo tank, AP-42, Table 5.2-1)

P = True vapor pressure of liquid loaded, psia (1.24 psia<sup>1</sup>)

M = Molecular weight of vapors (50 lb/lb-mol)

T = Temperature of bulk liquid loaded, °R (66 + 460 = 526°R)

EF2 = 0.73 lb-VOC/1,000 gal of liquid loaded

*Connect/disconnect hoses during truck loading:*

The liquid drainage is presumed to be 10 mL per disconnect. The entire amount of liquid drained is assumed to be emitted as VOC. Therefore,

$$\begin{aligned} \text{EF2} &= (10 \text{ mL/disconnect})(7.1 \text{ lb-product/gal})(2.6417 \times 10^{-4} \text{ gal/mL}) \\ &= 0.019 \text{ lb-VOC/disconnect} \end{aligned}$$

Fugitive emissions from equipment leaks:

The proposed installation will require additional valves and connectors to divert the condensate liquid. The emission factors for these components are summarized in the following table. These factors are taken from Table 2-1 of EPA's "Protocol for Equipment Leak Emissions Estimates (EPA-453/R-95-017 November 1995)" document.

Component Type	Source Type	VOC Emission Factor
		lb/hr/source
Valves	Gas	0.01316
	Light Liquid	0.00889
	Heavy Liquid	0.00051
Connectors	Gas	0.00403
	Light Liquid	0.00403
	Heavy Liquid	0.00403

<sup>1</sup>TVP is calculated using the method explained in Appendix B of Rule 4623 and using the proposed RVP of 2.3 psia and liquid storage temperature of 66°F from TANKS program.

$$\text{Calculated TVP} = (\text{RVP}) e^{[C_0(\text{RTEMP} - \text{ITEMP})]} = (2.3) e^{[-6.439,2(1/(66+459.69) - 1/559.69)]} = 1.093 \text{ psia};$$

$$C_f = C_F = (0.04) \times (\text{RVP}) + 0.1 = (0.04) \times (1.09) + 0.1 = 0.144 \text{ psia}$$

$$\text{Corrected TVP} = \text{Calculated TVP} + C_f;$$

$$\text{Corrected TVP} = 1.093 \text{ psia} + 0.144 \text{ psia} = 1.24 \text{ psia}$$

### C. Calculations

#### 1. Pre-Project Potential to Emit (PE1)

##### For each turbine (C-904-27, -28 and -29):

As stated above, although the turbines are not undergoing an NSR modification, the emissions calculations will be shown here for reference purposes only.

- a.) The maximum startup and/or shutdown of the gas turbine is two hours per day and will not exceed 171 ppmvd NO<sub>x</sub> @ 15% O<sub>2</sub>.

$$58.14 \text{ MMBtu/hr} \times \left[ 0.6203 \frac{\text{lb}}{\text{MMBtu}} (\text{or } 171 \text{ ppmvd NO}_x) \times \frac{2 \text{ hr}}{\text{startup/shutdown}} \right] = 72.1 \frac{\text{lb-NO}_x}{\text{startup/shutdown}}$$

Maximum daily emissions for NO<sub>x</sub> occurs when each gas turbine undergoes a two hour startup and/or shutdown and 22 hours operating at full load.

$$\text{NO}_x \text{ PE}_{\text{max}} = [\text{Heat Input (MMBtu/hr)} \times \text{EF}_{\text{startup}} (\text{lb/MMBtu}) \times 2 \text{ hours/day}] + [\text{Heat Input (MMBtu/hr)} \times \text{EF}_{\text{steady state}} (\text{lb/MMBtu}) \times 22 \text{ hours/day}]$$

$$\text{NO}_x \text{ PE}_{\text{max}} = [58.14 \text{ MMBtu/hr} \times 0.6203 \text{ lb-NO}_x/\text{MMBtu} \times 2 \text{ hour/day}] + [58.14 \text{ MMBtu/hr} \times 0.0295 \text{ lb-NO}_x/\text{MMBtu} \times 22 \text{ hours/day}]$$

$$\text{NO}_x \text{ Daily PE}_{\text{max}} = 109.9 \text{ lb-NO}_x/\text{day}$$

$$\text{NO}_x \text{ Annual PE}_{\text{max}} = [\text{Heat Input (MMBtu/hr)} \times \text{EF}_{\text{startup}} (\text{lb/MMBtu}) \times 2 \text{ hours/day}] + [\text{Heat Input (MMBtu/hr)} \times \text{EF}_{\text{steady state}} (\text{lb/MMBtu}) \times 22 \text{ hours/day}] \times 365 \text{ days/year}$$

$$\text{NO}_x \text{ Annual PE}_{\text{max}} = [58.14 \text{ MMBtu/hr} \times 0.6203 \text{ lb-NO}_x/\text{MMBtu} \times 2 \text{ hour/day}] + [58.14 \text{ MMBtu/hr} \times 0.0295 \text{ lb-NO}_x/\text{MMBtu} \times 22 \text{ hours/day}] \times 365 \text{ day/year}$$

$$\text{NO}_x \text{ Annual PE}_{\text{max}} = 40,099 \text{ lb-NO}_x/\text{year}$$

- b.) Maximum daily emissions for SO<sub>x</sub>, PM<sub>10</sub>, CO, VOC and NH<sub>3</sub> occur when each gas turbine operates twenty-four (24) hours at full load.

The PE for each pollutant is calculated with the following equation:

- PE = EF (lb/MMBtu) × Heat Input (MMBtu/hr) × Op. Sched. (hr/day or hr/year)

Pollutant	Daily PE			
	EF (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE (lb/day)
SO <sub>x</sub>	0.0028	58.14	24	3.9
PM <sub>10</sub>	0.0052	58.14	24	7.3
CO	0.1121	58.14	24	156.4
VOC	0.0320	58.14	24	44.7
NH <sub>3</sub>	0.0136	58.14	24	19.0

Pollutant	Annual PE			
	EF (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/yr)	Annual PE (lb/year)
SO <sub>x</sub>	0.0028	58.14	8,760	1,426
PM10	0.0052	58.14	8,760	2,648
CO	0.1121	58.14	8,760	57,093
VOC	0.0320	58.14	8,760	16,298
NH <sub>3</sub>	0.0136	58.14	8,760	6,927

Pre-Project Potential to Emit (PE1) Summary							
Permits	Pollutants	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC	NH <sub>3</sub>
	C-904-27	(lb/day)	109.9	3.9	7.3	156.4	44.7
(lb/year)		40,099	1,426	2,648	57,093	16,298	6,927
C-904-28	(lb/day)	109.9	3.9	7.3	156.4	44.7	19.0
	(lb/year)	40,099	1,426	2,648	57,093	16,298	6,927
C-904-29	(lb/day)	109.9	3.9	7.3	156.4	44.7	19.0
	(lb/year)	40,099	1,426	2,648	57,093	16,298	6,927

**For the aboveground storage tank and tanker truck loadout (C-904-32):**

Since this is a new operation, PE1 = 0 for all pollutants.

**2. Post Project Potential to Emit (PE2)**

**For each turbine (C-904-27, -28 and -29):**

As stated above, the turbines are not undergoing an NSR modification and the applicant is not proposing any change to the emission factors, heat input rating of the turbines, or hours of operation; therefore, the PE2 = PE1 for all pollutants and no additional calculations are required.

**For the aboveground storage tank and tanker truck loadout (C-904-32):**

**Tank emissions**

EPA's TANKS 4.0.d program is used to determine daily and annual VOC emissions. A custom chemical data is made for pipeline liquid using the following information:

Product: Pipeline Liquid  
Liquid molecular weight: 207 g/mol  
Vapor molecular weight: 50 g/mol  
RVP = 2.3 (per applicant)

Per applicant, maximum filling rate will be limited to 1,000 gal/day and 12,000 gal/year. This information along with the chemical data (above) will be used in the TANKS 4.0.d program to estimate the potential emissions.

*Daily emissions:*

To estimate daily emissions, it is assumed that 30,000 gallons (1,000 x 30 days in July) of organic liquid is loaded into the tank in a month for July, which is considered to be the hottest month in the San Joaquin Valley. The TANKS 4.0.d results are:

$$\begin{aligned} \text{PE2 (working loss)} &= 44.74 \text{ lb-VOC/month} \\ \text{PE2 (breathing loss)} &= 5.23 \text{ lb-VOC/month} \end{aligned}$$

Therefore, the working and breathing losses are:

$$\begin{aligned} \text{PE2 (working loss)} &= (44.74 \text{ lb-VOC/month}) (\text{month}/30 \text{ days}) \\ &= 1.49 \text{ lb-VOC/day} \end{aligned}$$

$$\begin{aligned} \text{PE2 (breathing loss)} &= (5.23 \text{ lb-VOC/month})(\text{month}/30 \text{ days}) \\ &= 0.17 \text{ lb-VOC/day} \end{aligned}$$

$$\begin{aligned} \text{Total PE2} &= \text{PE2 (working loss)} + \text{PE2 (breathing loss)} \\ &= 1.5 \text{ lb-VOC/day} + 0.2 \text{ lb-VOC/day} \\ &= 1.7 \text{ lb-VOC/day} \end{aligned}$$

*Annual emissions:*

To estimate the annual emissions, it is assumed that 12,000 gallons of organic liquid is loaded into a tank over 12 months. The TANKS results are:

$$\text{PE2} = 49 \text{ lb-VOC/year}$$

Note that printouts from TANKS 4.0d program are included in Appendix E of this document.

Truck loadout process

*Truck loading emissions:*

Per applicant, the maximum loadout rates would be 1,000 gallons/day and 12,000 gallons/year. Thus,

$$\begin{aligned} \text{PE2} &= (0.73 \text{ lb-VOC}/1,000 \text{ gal of liquid loaded})(1,000 \text{ gal/day}) \\ &= 0.7 \text{ lb-VOC/day} \end{aligned}$$

$$\begin{aligned} \text{PE2} &= (0.73 \text{ lb-VOC}/1,000 \text{ gal of liquid loaded})(12,000 \text{ gal/year}) \\ &= 9 \text{ lb-VOC/year} \end{aligned}$$

*Fugitive emissions from equipment leaks:*

The potential emissions from the new components will be estimated using the following equations.

$$\begin{aligned} \text{PE2} &= \text{VOC (lb/hr/source)} \times \text{component count} \times 24 \text{ hr/day} \\ &= \text{VOC (lb/hr/source)} \times \text{component count} \times 24 \text{ hr/day} \times 5 \text{ events/year} \end{aligned}$$

Component Type	Source Type	VOC	Component Count	PE2	
		lb/hr/source		lb/day	lb/year
Valves	Gas	0.01316	0	0.0	0
	Light Liquid	0.00889	0	0.0	0
	Heavy Liquid	0.00051	0	0.0	0
Connectors	Gas	0.00403	0	0.0	0
	Light Liquid	0.00403	2	0.0	1
	Heavy Liquid	0.00403	0	0.0	0
			Total:	0.0	1

*Connect/disconnect hoses during truck loading:*

Per applicant, the loading hose will be disconnected from the tank and tanker truck after completing the liquid transfer. So, there will be two disconnects per loading event. The maximum loadout events would be 1 event/day and 5 events/year. Thus,

$$\begin{aligned}
 \text{PE2} &= (0.019 \text{ lb-VOC/disconnect})(2 \text{ disconnect/event})(1 \text{ event/day}) \\
 &= 0.04 \text{ lb-VOC/day} \\
 &\approx 0.0 \text{ lb-VOC/day}
 \end{aligned}$$

$$\begin{aligned}
 \text{PE2} &= (0.019 \text{ lb-VOC/disconnect})(2 \text{ disconnect/event})(5 \text{ events/year}) \\
 &= 0.3 \text{ lb-VOC/year} \\
 &\approx 0 \text{ lb-VOC/year}
 \end{aligned}$$

Fugitive emissions from equipment leaks:

The potential emissions from the new components will be estimated using the following equations.

$$\begin{aligned}
 \text{PE2} &= \text{VOC (lb/hr/source)} \times \text{component count} \times 24 \text{ hr/day} \\
 &= \text{VOC (lb/hr/source)} \times \text{component count} \times 8,760 \text{ hr/year}
 \end{aligned}$$

Component Type	Source Type	VOC	Component Count	PE2	
		lb/hr/source		lb/day	lb/year
Valves	Gas	0.01316	0	0.0	0
	Light Liquid	0.00889	31	6.6	2,414
	Heavy Liquid	0.00051	0	0.0	0
Connectors	Gas	0.00403	0	0.0	0
	Light Liquid	0.00403	20	1.9	706
	Heavy Liquid	0.00403	0	0.0	0
			Total:	8.5	3,120

**Summary:**

Operation/Process	PE2 (lb/day)	PE2 (lb/year)
Tank emissions	1.7	49
Truck loadout process		
Truck loading	0.7	9
Loadout fugitives	0.0	1
Hose disconnects	0.0	0
Equipment leaks	8.5	3,120
Total:	10.9	3,179

**3. Pre-Project Stationary Source Potential to Emit (SSPE1)**

Pursuant to District Rule 2201, the SSPE1 is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of Emission Reduction Credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions (AER) that have occurred at the source, and which have not been used on-site.

As discussed above, the tank and loadout operation, unit -32, is the only unit triggering Rule 2201 requirements. This unit only emits VOCs and facility emissions are already above the Offset and Major Source Thresholds for VOC emissions; therefore, SSPE1 calculations are not necessary.

**4. Post Project Stationary Source Potential to Emit (SSPE2)**

Since facility emissions are already above the Offset and Major Source Thresholds for VOC emissions, SSPE2 calculations are not necessary.

**5. Major Source Determination**

**Rule 2201 Major Source Determination:**

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

This source is an existing Major Source for VOC emissions and will remain a Major Source for VOC. No change in other pollutants are proposed or expected as a result of this project.

**Rule 2410 Major Source Determination:**

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii). Therefore the PSD Major Source threshold is 250 tpy for any regulated NSR pollutant. From the SSPE2 calculated in project C-1102936, the PSD Major Source Determination is summarized in the following table:

PSD Major Source Determination (tons/year)						
	NO2	VOC	SO2	CO	PM	PM10
Estimated Facility PE before Project Increase	70	24	2	86	4	4
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source ? (Y/N)	N	N	N	N	N	N

As shown above, the facility is not an existing PSD major source for any regulated NSR pollutant expected to be emitted at this facility.

**6. Baseline Emissions (BE)**

The BE calculation (in lb/year) is performed pollutant-by-pollutant for each unit within the project to calculate the QNEC, and if applicable, to determine the amount of offsets required.

Pursuant to District Rule 2201, BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201.

Since the aboveground storage tank and loadout operation are considered new emissions units, BE = PE1 = 0 for all pollutants.

**7. SB 288 Major Modification**

SB 288 Major Modification is defined in 40 CFR Part 51.165 as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act."

Since this facility is a major source for VOC, the project's PE2 is compared to the SB 288 Major Modification Thresholds in the following table in order to determine if the SB 288 Major Modification calculation is required.

<b>SB 288 Major Modification Thresholds</b>			
<b>Pollutant</b>	<b>Project PE2 (lb/year)</b>	<b>Threshold (lb/year)</b>	<b>SB 288 Major Modification Calculation Required?</b>
VOC	3,179*	50,000	No

\* Only the emissions from the new unit are applicable towards the SB 288 threshold since the existing turbines are not being modified per District Rule 2201 as explained above.

Since none of the SB 288 Major Modification Thresholds are surpassed with this project, this project does not constitute an SB 288 Major Modification.

### **8. Federal Major Modification**

District Rule 2201 states that a Federal Major Modification is the same as a "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

Since this source is not included in the 28 specific source categories specified in 40 CFR 51.165, the increases in fugitive emissions are not included in the Federal Major Modification determination.

Page 6 of the District's policy APR-1150 "Implementation of Rule 2201 for SB288 Major Modifications and Federal Major Modifications" states, "For purposes of determining if a new or modified emission unit is part of an Federal Major Modification, if the annual emission increase (calculated using the procedures below) for the emission unit when divided by 365 is less than or equal to 0.5 lb/day, such an increase shall be rounded to 0. New or modified emission units with emission increases that round to 0 shall not constitute a Federal Major Modification."

The determination of Federal Major Modification is based on a two-step test. For the first step, only the non-fugitive emission *increases* are counted. Emission decreases may not cancel out the increases for this determination.

#### **Step 1**

For new emissions units, the increase in non-fugitive emissions is equal to the PE2 for each new unit included in this project.

#### Tank emissions:

The average emissions increase is determined to be 0.1 lb-VOC/day (49 lb-VOC/yr ÷ 365 days/yr), which is below the 0.5 lb/day threshold. Thus, this increase is equated to zero.



Tank loadout process:

*Truck loading emissions:*

The average emissions increase is determined to be 0.0 lb-VOC/day (9 lb-VOC/yr ÷ 365 days/yr), which is below the 0.5 lb/day threshold. Thus, this increase is equated to zero.

*Loadout fugitives:*

Page 2 of the District's policy APR-1150 "Implementation of Rule 2201 for SB288 Major Modifications and Federal Major Modifications" states that "...fugitive emissions will be included to determine if a stationary source is major source or a modification is an SB 288 Major Modification or a Federal Major Modification, only if the stationary source is one of the specific source categories listed in 40 CFR 51.165."

Natural gas processing facilities are not included as one of the source categories in 40 CFR 51.165. Therefore, the fugitive emissions increase from loadout fugitive emissions will not be counted.

*Connect/disconnect hoses during truck loading:*

The average emissions increase is determined to be 0.0 lb-VOC/day (0 lb-VOC/yr ÷ 365 days/yr), which is below the 0.5 lb/day threshold. Thus, this increase is equated to zero.

Fugitive emissions from equipment leaks:

As explained above, fugitive emissions from this natural gas processing facility will not be counted towards the NEI for Federal Major Modification purposes. Therefore, the fugitive emissions increase from equipment leaks will not be counted.

Summary:

Since the total emissions increase does not exceed 0 lb/yr threshold for Federal Major Modification, this project is not a Federal Major Modification.

**9. Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination**

Rule 2410 applies to any pollutant regulated under the Clean Air Act, except those for which the District has been classified nonattainment. The pollutants which must be addressed in the PSD applicability determination for sources located in the SJV and which are emitted in this project are: (See 52.21 (b) (23) definition of significant)

- NO<sub>2</sub> (as a primary pollutant)
- SO<sub>2</sub> (as a primary pollutant)
- CO
- PM
- PM<sub>10</sub>

**I. Project Emissions Increase - New Major Source Determination**

The post-project potentials to emit from all new and modified units are compared to the PSD major source thresholds to determine if the project constitutes a new major source subject to PSD requirements.

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). The PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

Note that fugitive emissions are not included here, as natural gas processing was not one of the source categories listed in 40 CFR 51.165.

<b>PSD Major Source Determination: Potential to Emit (tons/year)</b>						
	<b>NO2</b>	<b>VOC</b>	<b>SO2</b>	<b>CO</b>	<b>PM</b>	<b>PM10</b>
Total PE from New and Modified Units	0	0.0	0	0	0	0
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	N	N	N	N	N	N

As shown in the table above, the potential to emit for the project, by itself, does not exceed any PSD major source threshold. Therefore Rule 2410 is not applicable and no further analysis is required.

**10. Quarterly Net Emissions Change (QNEC)**

The QNEC is calculated solely to establish emissions that are used to complete the District’s PAS emissions profile screen. Detailed QNEC calculations are included in Appendix D.

**VIII. Compliance Determination**

**Rule 2201 New and Modified Stationary Source Review Rule**

Section 3.25 defines a “modification” as an action including at least one of the following items:

- 3.25.1.1 Any change in hours of operation, production rate, or method of operation of an existing emissions unit, which would necessitate a change in permit conditions.
- 3.25.1.2 Any structural change or addition to an existing emissions unit which would necessitate a change in permit conditions. A Replacement Emissions Unit shall not be considered to be a structural change.

- 3.25.1.3 An increase in emissions from an emissions unit caused by a modification of the Stationary Source when the emissions unit is not subject to a daily emissions limitation.
- 3.25.1.4 Addition of any new emissions unit which is subject to District permitting requirements.
- 3.25.1.5 A change in a permit term or condition proposed by an applicant to obtain an exemption from an applicable requirement to which the source would otherwise be subject.

The proposed changes to the existing turbines (C-904-27, -28, -29) do not fall into any of the above items; therefore, they are not considered a "modification" per Rule 2201.

However, the proposed tank and loadout operation (C-904-32) are considered a new source and are subject to this Rule.

#### **A. Best Available Control Technology (BACT)**

##### **1. BACT Applicability**

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions\*:

- a. Any new emissions unit with a potential to emit exceeding two pounds per day,
- b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

\*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

##### **a. New emissions units – PE > 2 lb/day**

As seen in Section VII.C.2 above, the applicant is proposing to operate a new aboveground storage tank and tanker truck loading operation.

##### Tank emissions:

The potential emissions are not greater than 2.0 lb/day for VOC emissions.

Tank loadout process:

*Truck loading emissions and Connect/disconnect hoses during truck loading:*

For each emissions unit, the potential emissions are not greater than 2.0 lb/day for VOC emissions. Therefore, these operations did not trigger BACT for VOC emissions.

Fugitive emissions from equipment leaks:

The potential emissions from each emissions units (valve or connector) are not greater than 2.0 lb/day for VOC emissions.

Since no emissions unit has emissions greater than 2.0 lbs/day, BACT is not triggered for new emissions units.

**b. Relocation of emissions units – PE > 2 lb/day**

As discussed in Section I above, there are no emissions units being relocated from one stationary source to another; therefore BACT is not triggered.

**c. Modification of emissions units – AIPE > 2 lb/day**

As discussed in Section I above, there are no modified emissions units associated with this project. Therefore BACT is not triggered.

**d. SB 288/Federal Major Modification**

As discussed in Sections VII.C.7 and VII.C.8 above, this project does not constitute an SB 288 or Federal Major Modification. Therefore BACT is not triggered for any pollutant.

**B. Offsets**

**1. Offset Applicability**

Offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The applicant has conceded that the facility has VOC emissions exceeding the offset threshold.

**2. Quantity of Offsets Required**

As seen above, the facility has conceded that the VOC emissions exceed the offset threshold. Therefore offset calculations will be required for this project.

The quantity of offsets in pounds per year for VOC is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) =  $(\Sigma[PE2 - BE] + ICCE) \times DOR$ , for all new or modified emissions units in the project,

Where,

PE2 = Post Project Potential to Emit, (lb/year)

BE = Baseline Emissions, (lb/year)

ICCE = Increase in Cargo Carrier Emissions, (lb/year)

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, Located at a Major Source.

otherwise,

BE = HAE

The facility is proposing to install a new operation; therefore BE = 0. Also, there are no increases in cargo carrier emissions; therefore offsets can be determined as follows:

Offsets Required (lb/year) =  $([PE2 - BE] + ICCE) \times DOR$

PE2 (VOC) = 3,179 lb/year

BE (VOC) = 0 lb/year

ICCE = 0 lb/year

The project is not a Federal Major Modification; however, since the original banking project originated more than 15 miles from this stationary source, the distance offset ratio of 1.5:1 will be used. The amount of VOC ERCs that need to be withdrawn is:

Offsets Required (lb/year) =  $([3,179 - 0] + 0) \times 1.5$   
=  $3,179 \times 1.5$   
= 4,769 lb VOC/year

Calculating the appropriate quarterly emissions to be offset is as follows:

Quarterly offsets required (lb/qtr) =  $(4,769 \text{ lb NO}_x/\text{year}) \div (4 \text{ quarters/year})$   
= 1,192.25 lb/qtr

The applicant has stated that the facility plans to use ERC certificate S-4742-1 to offset the increases in VOC emissions associated with this project. The above certificate has available quarterly VOC credits as follows:

	<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
ERC #S-4742-1	1,200	1,200	1,200	1,200

As seen above, the facility has sufficient credits to fully offset the quarterly VOC emissions increases associated with this project.

**Proposed Rule 2201 (offset) Conditions:**

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 1,192 lb, 2nd quarter - 1,192 lb, 3rd quarter - 1,192 lb, and fourth quarter - 1,193 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201]
- ERC Certificate Number S-4742-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

**C. Public Notification**

**1. Applicability**

Public noticing is required for:

- a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
- b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- c. Any project which results in the offset thresholds being surpassed, and/or
- d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.
- e. Any project which results in a Title V significant permit modification

**a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications**

New Major Sources are new facilities, which are also Major Sources. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

As demonstrated in Sections VII.C.7 and VII.C.8, this project does not constitute an SB 288 or Federal Major Modification; therefore, public noticing for SB 288 or Federal Major Modification purposes is not required.

**b. PE > 100 lb/day**

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. As seen in Section VII.C.2 above, this project does not include a new emissions unit which has daily emissions greater than 100 lb/day for any pollutant, therefore public noticing for PE > 100 lb/day purposes is not required.

**c. Offset Threshold**

The SSPE1 and SSPE2 are compared to the offset thresholds in the following table.

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
VOC	>20,000	>20,000	20,000 lb/year	No

As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

**d. SSIPE > 20,000 lb/year**

Public notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table.

SSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
VOC	>20,000	>20,000	3,179	20,000 lb/year	No

As demonstrated above, the SSIPEs for all pollutants were less than 20,000 lb/year; therefore public noticing for SSIPE purposes is not required.

**e. Title V Significant Permit Modification**

As shown in the discussion of Rule 2520 below, this project constitutes a Title V significant modification. Therefore, public noticing for Title V significant modifications is required for this project.

## 2. Public Notice Action

As discussed above, public noticing is required for this project for being a Title V significant modification. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and Environmental Protection Agency (EPA) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATCs in this project.

### D. Daily Emission Limits (DELs)

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

#### **Proposed Rule 2201 (DEL) Conditions:**

##### **For each turbine (C-904-27, -28 and -29):**

Since there are no changes to the maximum daily emissions, process rate, fuel use or emission factors, the existing DEL conditions from the current permits will be carried over to the proposed ATCs issued in this project.

##### **For the aboveground storage tank and tanker truck loadout (C-904-32):**

###### Tank emissions:

- The Reid vapor pressure (RVP) of the organic liquid stored in the tank shall not exceed 2.3 psia. [District Rules 2201]
- The organic liquid transferred into the tank shall not exceed either of the following limits: 1,000 gallons/day or 12,000 gallons/year (based on a 12-month rolling basis). [District Rule 2201]
- VOC emissions from transferring and storage of organic liquid in the tank shall not exceed either of the following limits: 1.7 lb/day or 49 lb/year (based on a 12-month rolling basis). [District Rule 2201]

###### Tank loadout process:

###### Truck loading emissions:

- VOC emissions from tanker truck loading operation shall not exceed 0.73 lb/1,000 gallons of pipeline condensate liquid loaded. [District Rule 2201]
- The organic liquid loading into tanker truck(s) shall not exceed either of the following limits: 1,000 gallons/day or 12,000 gallons/yr (12-month rolling basis). [District Rules 2201 and 4624]



*Connect/disconnect hoses during truck loading:*

- The organic liquid drainage from disconnections associated with the tanker truck loadout equipment shall not exceed 10 mL per disconnect. [District Rule 2201]
- The total number of disconnects shall not exceed either of the following limits: 2 disconnects/day or 10 disconnects/year (based on a 12-month rolling basis). [District Rule 2201]

Fugitive emissions from equipment leaks:

- Fugitive VOC emissions from components (i.e., valves and connectors located within 60 feet of piping to the D-322 tank) used to route the organic liquid into the tank shall not exceed either of the following limits: 8.5 lb/day or 3,121 lb/year<sup>2</sup>. [District Rule 2201]
- Fugitive VOC emissions shall be calculated using the EPA "Protocol for Equipment Leak Emissions Estimates (EPA-453/R-95-017 (November 1995), Table 2-1, Synthetic Organic Chemical Manufacturing Industry (SOCMI) Average Emission Factors. [District Rule 2201]
- Except as otherwise provided in this permit, all piping, valves, and fittings under this permit shall be constructed and maintained in a leak-free condition. Leak free condition is defined as a condition without a gas leak or a liquid leak. [District Rule 2201]
- Gas leak is a reading in excess of 10,000 parts per million by volume (ppmv), as methane, above background on a portable hydrocarbon detection instrument that is calibrated with methane in accordance with the test method in Section 6.4.8 of Rule 4623. [District Rule 2201]
- Liquid Leak is dripping of organic liquid at a rate of more than 3 drops per minute. [District Rule 2201]
- Upon detection of a leaking component covered under this permit, the operator shall affix to that component a weatherproof readily visible tag with the date and time of leak detection, the date and time of leak measurement, and for gas leaks, the leak concentration in ppmv. The tag shall remain affixed to the component until the component is repaired or replaced. [District Rule 2201]
- All equipment that are found leaking shall be repaired or replaced within 72 hours of detection. The repaired or replaced equipment must be re-inspected. [District Rule 2201]

**E. Compliance Assurance**

**1. Source Testing**

For the existing turbines, C-904-27-9, -28-9, -29-9, there will be no additional source testing and the existing source test conditions from the current permits will be carried over to the proposed ATCs issued in this project.

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<sup>2</sup> 3,121 lb-VOC/year = 1 lb-VOC/year from loadout components + 3,120 lb-VOC/year from tank components

For the new permit unit, C-904-32-0, pursuant to District Policy APR 1705, source testing is not required to demonstrate compliance with Rule 2201.

## 2. Monitoring

For the existing permit units C-904-27-9, -28-9, -29-9:

As discussed above, these units are not being modified per District Rule 2201; however, the monitoring requirement will be discussed in further detail under the compliance section of District Rule 4703 and 40 CFR Part 64 below.

For the new permit unit C-904-32-0:

### Tank emissions:

PG&E will be required to determine RVP and then TVP at the actual temperature of the liquid within 60-days of initial startup and at least once every 24 months thereafter. This testing is consistent with the applicable requirements from similar tanks subject to District Rule 4623 to ensure continued compliance.

- The owner or operator shall determine TVP within 60 days of initial startup and at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in the tank. The records of TVP testing shall be submitted within 45 days after the date of testing. The records shall include the tank identification number, permit number, type of stored organic liquid, TVP of the stored organic liquid, test methods used, and a copy of the test results. [District Rule 2201]
- TVP shall be determined at actual storage temperature of the organic liquid in the tank. [District Rule 2201]
- TVP of the organic liquid shall be determined by measuring the RVP using ASTM D 323-94 (Test Method for Vapor Pressure for Petroleum Products), and converting the RVP to TVP at the tank's maximum organic liquid storage temperature. The conversion of RVP to TVP shall be done in accordance with the procedures in Appendix B. Appendix B is an excerpt from the oil and gas section of "ARB Technical Guidance Document to the Criteria and Guidelines Regulation for AB 2588", dated August 1989. Should the permittee want to use different methodology, then that methodology should be first approved by the District and or the EPA. [District Rule 2201]

### Tank loadout process:

#### *Truck loading emissions:*

The truck loading emissions are estimated using EPA's AP-42 calculation methodology. Therefore, no initial or periodic testing is required.

#### *Connect/disconnect hoses during truck loading:*

PG&E will also be required to measure the average organic liquid drainage (mL) from three consecutive disconnects within 60-days of initial startup. This measurement will verify compliance with the 10 mL drainage proposed by PG&E. Periodic testing is not