San Joaquin Valley
Air Pollution Control District

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Mr. Andrew Whittome, Project Manager
Pastoria Energy Facility, LLC
39789 Edmonston Pumping Plant Road
PO Box 866
Lebec, CA 93243-0866

Re: Notice of a Preliminary Determination of Compliance (DOC)
Project Number: 1052027 – Pastoria Energy Facility Expansion (05-AFC-1)

Dear Mr. Whittome:

Enclosed for your review and comments is the District's preliminary Determination of Compliance for a 164 MW GE 7FA simple-cycle, gas turbine engine/generator, at Tejon Ranch, 30 mi S of Bakersfield, and 6.5 mi E of Grapevine, Rancho El Tejon.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day public comment period that begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Richard Karrs of Permit Services at (661) 326-6954.

Sincerely,

David Warner
Director of Permit Services

DW:RWK/ls

Enclosures

c: Thomas E. Goff, Permit Services Manager

David L. Crow
Executive Director/Air Pollution Control Officer

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BAKERSFIELD CALIFORNIAN

NOTICE OF DETERMINATION OF COMPLIANCE

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District is proposing to issue a Preliminary Determination of Compliance for 164 MW simple-cycle, gas turbine engine/generator at the Pastoria Energy Facility, located on Tejon Ranch, 30 miles south of Bakersfield and 6.5 miles east of Grapevine, CA. The analysis of the regulatory basis for this action, Project #S1052027, and of the resulting effect on ambient air quality, is available for public inspection at the District office at the address below. Written comments on this project must be submitted within 30 days of the publication date of this notice to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, 2700 M STREET, SUITE 275, BAKERSFIELD, CALIFORNIA 93301.**

DETERMINATION OF COMPLIANCE EVALUATION

Pastoria Energy Facility, LLC
California Energy Commission
Application for Certification Docket #: 05-AFC-01

Facility Name:	Pastoria Energy Faciilty, LLC
Mailing Address:	PO Box 866 Lebec, CA 93243-0866
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E-Mail:	NMatthews@SierraResearch.com
Engineer:	Richard Karrs, Senior Air Quality Engineer
Lead Engineer:	Tom Goff, Permit Services Manager
Date:	
Project #:	S1052027
Application #'s:	S-3636-14-0
Received:	May 4, 2005
Preliminary DOC:	
Final DOC:	

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ATTACHMENT A - PDOC Permit Conditions
ATTACHMENT B - GTE Emissions Data
ATTACHMENT C - Referenced District BACT Guidance Document
ATTACHMENT D - Top Down BACT Analysis
ATTACHMENT E - Health Risk/Ambient Air Quality Analysis
ATTACHMENT F - PM10/NOx Interpollutant Offset Analysis
ATTACHMENT G - Compliance Certification

I. PROPOSAL:

Pastoria Energy Facility, LLC (PASTORIA) is seeking approval from the San Joaquin Valley Air Pollution Control District (the "District") for an expansion of the existing "merchant" electrical power generation facility, that received California Energy Commission and District approval in 1999 (99-AFC-01). The original facility, which has completed construction and initial commissioning, is rated at 750 MW, and consists of three natural gas-fired gas turbine engine-generators (GTEs) each with a heat recovery steam generator (HRSG) operating in combined cycle mode with two steam turbines. The facility also includes two cooling towers, a diesel engine driven firewater pump and a natural gas-fired emergency IC engine. The Pastoria expansion project proposes the installation of a 164 MW ("F Class') natural gas-fired gas turbine engine-generator operating in simple cycle mode.

The Pastoria expansion will be incorporated into the 31-acre original plant site. Except for the GTE and associated equipment (selective catalytic reduction (SCR) exhaust gas NOx treatment unit, exhaust stack, step up transformer and 230 kV switch gear), no additional equipment is proposed. Existing water and natural gas facilities and supplies are adequate. Additional cooling capacity is not required as the unit operates in simple cycle mode.

The Pastoria Energy Facility expansion is subject to approval by the California Energy Commission (CEC). Pursuant to SJVAPCD Rule 2201, Section 5.8, the Determination of Compliance (DOC) review is functionally equivalent to an Authority to Construct (ATC) review. The Determination of Compliance (DOC) will be issued and submitted to the CEC contingent upon SJVAPCD approval of the project.

The California Energy Commission (CEC) is the lead agency for this project for the requirements of the California Environmental Quality Act (CEQA).

Additionally, the Pastoria Energy Facility is subject to Prevention of Significant Deterioration requirements by EPA Region IX.

Draft permit conditions have been included as Attachment A.

II. APPLICABLE RULES:

Rule 1080 Stack Monitoring (12/17/92)
Rule 1081 Source Sampling (12/16/93)
Rule 1100 Equipment Breakdown (12/17/92)
Rule 2010 Permits Required (12/17/92)
Rule 2201 New and Modified Stationary Source Review Rule (4/20/05)
Rule 2520 Federally Mandated Operating Permits (6/21/01)
Rule 2540 Acid Rain Program (11/13/97)

Rule 2550 Federally Mandated Preconstruction Review for Major Sources of Air Toxics (6/18/98)
Rule 4001 NSPS Subpart GG - Standards of Performance for Stationary Gas Turbines (4/14/99)
Rule 4002 National Emissions Standards for Hazardous Air Pollutants (5/20/04) Subpart YYYY
Rule 4101 Visible Emissions (11/15/01)
Rule 4102 Nuisance (12/17/92)
Rule 4201 Particulate Matter Concentration (12/17/92)
Rule 4301 Fuel Burning Equipment (12/17/92)
Rule 4703 Stationary Gas Turbines (4/25/02)
Rule 4801 Sulfur Compounds (12/17/92)
Rule 8011 General Requirements (11/15/01)
Rule 8021 Construction, Demolition, Excavation, Extraction and Other Earthmoving Activities (11/15/01)
Rule 8031 Bulk Materials (11/15/01)
Rule 8041 Carryout and Trackout (11/15/01)
Rule 8051 Open Areas (11/15/01)
Rule 8061 Paved and Unpaved Roads (11/15/01)
Rule 8071 Unpaved Vehicle/Equipment Traffic Areas (11/15/01)
Rule 8081 Agricultural Sources (11/15/01)
California Environmental Quality Act (CEQA)
California Health & Safety Code (CH&S), Sections 41700 (Health Risk Analysis), 2301.6 (School Notice), and 44300 (Air Toxic "Hot Spots")

III. PROJECT LOCATION:

The Pastoria Energy Facility is located on a 31 acre site on the Tejon Ranch, 30 miles south of Bakersfield and 6.5 miles east of Interstate Highway 5, Kern County. The location is part of the historic El Tejon land grant, at Section 18, Township 10N, Range 18W, San Bernardino Base and Meridian (projected).

The proposed location is not within 1,000' of a K-12 school.

IV. PROCESS DESCRIPTION:

Simple-Cycle Combustion Turbine Generator

The natural gas-fired General Electric 7FA-Class simple-cycle gas turbine engine-generator (GTE) will be equipped with dry Low NO_X combustors and a selective catalytic reduction (SCR) system with ammonia injection. The GTE will drive an electrical generator to produce approximately 164 MW of electricity. Dilution air will be added ahead or the SCR unit to cool the exhaust to within the operating temperature range of the SCR unit, approximately 800°F.

Pastoria does not wish to be restricted to a specific number of hours at full load operation or startups/shutdowns per calendar quarter. Actual emissions from the facility will vary depending on electricity demand. A hypothetical operating scenario has been developed for purposes of demonstrating that the project will comply with SJVAPCD emission offset requirements.

S-3636-14-0 Pastoria Energy Facility – Expansion GTE Hypothetical Operating Scenario					
	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual
Number of Startup/Shutdown Hours	75	75	75	75	300
Number of Full Load Hours	2,115	2,115	2,115	2,115	2,115
Total Hours	2,190	2,190	2,190	2,190	8,760

The GTE will utilize dry low NO_X (DLN) combustor, SCR with ammonia injection, and good combustion practices to achieve the following emission rates:

NO_X: 2.5 ppmvd @ 15% O_2
VOC: 1.3 ppmvd @ 15% O_2
CO: 6.0 ppmvd @ 15% O_2
SO_X: 0.002 lb/MMBtu
PM_{10}: 9.0 lb/hr

Continuous emissions monitoring systems (CEMs) will sample, analyze, and record NO_X, CO, and O_2 concentrations in the exhaust gas.

V. EQUIPMENT LISTING:

S-3636-14-0: 164 MW NOMINALLY RATED GENERAL ELECTRIC 7FA NATURAL GAS FIRED GAS TURBINE ENGINE/ELECTRICAL GENERATOR #4 WITH DRY LOW NOX COMBUSTORS AND SELECTIVE CATALYTIC REDUCTION (SCR)

VI. EMISSION CONTROL TECHNOLOGY EVALUATION:

The GTE will be equipped with a dry low NO_X combustor and will exhaust into a Selective Catalytic Reduction [SCR] system with ammonia injection for the control of NOx emissions. The use of dry low NO_X combustor and a SCR system with ammonia injection can achieve a NO_X emission rate of 2.5 ppmvd @ 15% O_2. CO emissions of 6 ppmvd and VOC emissions of 1.3 ppmvd (both @ 15% O2) have been demonstrated using good combustion practices for this make and model of gas turbine (See discussion in top-down BACT analysis, Attachment D.)

NO_X is the major pollutant of concern when combusting natural gas. Virtually all gas turbine NO_X emissions originate as NO. This NO is further oxidized in the exhaust system or later in the atmosphere to form the more stable NO_2 molecule. There are two mechanisms by which NO_X is formed in turbine combustors: 1) the oxidation of atmospheric nitrogen found in the combustion air (thermal NO_X and prompt NO_X), and 2) the conversion of nitrogen chemically bound in the fuel (fuel NO_X).

Thermal NO_X is formed by a series of chemical reactions in which oxygen and nitrogen present in the combustion air dissociate and subsequently react to form oxides of nitrogen. Prompt NO_X, a form of thermal NO_X, is formed in the proximity of the flame front as intermediate combustion products such as HCN, H, and NH are oxidized to form NO_X. Prompt NO_X is formed in both fuel-rich flame zones and dry low NO_X (DLN) combustion zones. The contribution of prompt NO_X to overall NO_X emissions is relatively small in conventional near-stoichiometric combustors, but this contribution is an increasingly significant percentage of overall thermal NO_X emissions in DLN combustors. For this reason prompt NO_X becomes an important consideration for DLN combustor designs, and establishes a minimum NO_X level attainable in lean mixtures.

Fuel NO_X is formed when fuels containing nitrogen are burned. Molecular nitrogen, present as N_2 in some natural gas, does not contribute significantly to total NO_X formation. With excess air, the degree of fuel NO_X formation is primarily a function of the nitrogen content in the fuel. When compared to thermal NO_X, fuel NO_X is not currently a major contributor to overall NO_X emissions from stationary gas turbines firing natural gas.

The level of NO_X formation in a gas turbine, and hence the NO_X emissions, is unique (by design factors) to each gas turbine model and operating mode. The primary factors that determine the amount of NO_X 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_X. Design parameters controlling air/fuel ratio and the introduction of cooling air into the combustor strongly influence thermal NO_X formation. Thermal NO_X formation is primarily a function of flame temperature and residence time. The extent of fuel/air mixing prior to combustion also affects NO_X formation. Simultaneous mixing and combustion results in localized fuel-rich zones that yield high flame temperatures in which substantial thermal NO_X production takes place. Injecting water or steam into a conventional combustor provides a heat sink that effectively reduces peak flame temperature, thereby reducing thermal NO_X formation. 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_X formation during combustion. This is known as dry low NO_X (DLN) combustion.

Selective Catalytic Reduction systems selectively reduce NO_X emissions by injecting ammonia (NH_3) into the exhaust gas stream upstream of a catalyst. Nitrogen oxides, NH_3, and O_2 react on the surface of the catalyst to form molecular nitrogen (N_2) and H_2O. SCR is capable of over 90 percent NO_X 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 the specific catalyst proposed for the Pastoria Expansion GTE is 800° F. The Pastoria expansion project proposal calls for adding dilution air to reduce the exhaust gas temperature accordingly. Ammonia slip will be limited to 10 ppmvd @ 15% O_2.

Carbon monoxide is formed during the combustion process due to incomplete oxidation of the carbon contained in the fuel. Carbon monoxide formation can be limited by ensuring complete and efficient combustion of the fuel. High combustion temperatures, adequate excess air and good air/fuel mixing during combustion minimize CO emissions. Therefore, good combustion practices and careful tuning are required with dry low NOx combustion to achieve low CO emissions without employing an oxidation catalyst.

Uncontrolled CO emissions from the GE 7FA are expected to be less than 6 ppmv, based on information from the manufacturer and on the performance demonstrated by Pastoria Energy Facility GTE (Unit 3) and two GE 7FA peaker units that operated without oxidation catalysts at the Sunrise Power Facility in Kern County. CO emissions of less than 6.0 ppmv are expected at all operating scenarios.

High combustion temperatures, adequate excess air, good air/fuel mixing during combustion, and the use of high quality fuel and inlet fuel scrubbers are being proposed to minimize VOC emissions. Based on the source test results from Pastoria and Sunrise Facilities referenced above, VOC emissions are expected to be less than 1.3 ppmv.

The GTE will operate with inlet air-cooling. Inlet air temperature and density directly affect turbine performance. The hotter and drier the inlet air temperature, the lower the efficiency and capacity of the turbine. Conversely, colder air improves the efficiency and reduces emissions by reducing the amount of fuel required to achieve the required turbine output. The inlet air cooler will allow the turbine to operate in a more efficient manner than it would without it. The increased efficiency will reduce the amount of fuel necessary to achieve the required power output. The reduction in fuel consumption will result in lower combustion contaminant emissions.

VII. GENERAL CALCULATIONS:

A. Assumptions

- The expansion turbine will undergo initial commissioning, which includes activities

defined as, but not limited to, all testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and construction contractor to insure safe and reliable steady state operation of the gas turbines, CEM and emissions control systems and associated electrical delivery systems. Initial commissioning is a one-time event, lasting over a period of up to three weeks.

- For the initial commissioning period, Pastoria has proposed the following maximum hourly and daily emissions for NOx, CO and VOC. (Maximum PM_{10} and SO_X emissions rates during the commissioning period are the same as during full load firing at worst case ambient conditions.)

Pollutant	Proposed Limit	Basis
NOx	308 lb/hr	Derived from permitted limit for Los Medanos Energy Center (616 lb/hr for two units)
NOx	3200 lb/day	Derived from CEM data during commissioning of Moss Landing units 1-4
VOC	273 lb/hr	Based on maximum allowable startup /shutdown emissions for PEF units 1-3
VOC	355 lb/day	Based on maximum allowable daily startup /shutdown emissions for PEF units 1-3
CO	2,527 lb/hr	Derived from permitted limit for Los Medanos Energy Center (5053.8 lb/hr for two units)
CO	10,824 lb/day	Calculated based on 12 hrs of uncontrolled emissions at the maximum allowable emissions rate during startup for the PEF expansion – 902 lb/hr.

- Actual measured emissions during the commissioning period will accrue towards the annual emissions limits.

- BACT emission concentration limits of 2.5 ppmvd @ 15% O_2, 1.3 ppmvd @ 15% O_2 and 6.0 ppmvd @ 15% O_2 are proposed for NO_X, VOC and CO respectively, at all operating loads and all ambient conditions (except during start-ups and shutdowns).

- The applicant proposes NO_X, CO and VOC mass emission rates of 16.25 lb/hr, 23.75 lb/hr and 2.95 lb/hr, respectively, at 100% load and 35 °F (worst case ambient temperature).

- The applicant proposes a PM_{10} mass emission rate of 9.0 lb/hr, at 100% load and

35 °F (worst case ambient temperature), based on the vendor's guarantee for both the filterable and condensable portions of PM_{10}.

- The applicant proposed a SO_X emissions rate of 3.50 lb/hr as a worst-case emissions rate at 100% load and 35 °F. This is the same rate that was approved for the initial Pastoria Energy Facility (units 1,2, and 3). This rate approximates the rate calculated using the maximum heat input of 1791.1 MMBtu/hr, the natural gas heating value, 1,000 Btu/scf (hhv), and the maximum permitted natural gas sulfur content of 0.75 gr S/100 scf.

  (0.75 ~~gr S~~/100 ~~dscf~~ x 1 ~~lb S~~/7000 ~~gr~~ x 64 lb SO_X/32 ~~lb S~~ x 1 ~~scf~~/1000 ~~Btu~~ x 10^6 ~~Btu~~/MMBtu)
  = 0.0021 lb/MMBtu

  (0.0021 lb/MMBtu) x (1791.1 MMBtu/hr) = 3.76 lb/hr

- The maximum hourly non-commissioning emissions will occur when the GTE is in start-up mode.
- Execpt for VOC, the applicant has proposed the same maximum daily emissions that were approved for the initial Pastoria Energy Facility, units S-3636-1. '2 and '3: 450 lb/day NOx, 84 lb/day SOx, 2113 lb/day CO and 216 lb/day PM10. The applicant has proposed maximum daily VOC emissions of 96.83 lb/day. The proposed daily emission rates represent two hours of startup and twenty-two (22) hours operating at full load and 35 °F.
- The applicant has proposed maximum annual emissions based on 300 hours per year of operation in startup mode and 8460 hours per year of operation at maximum capacity and a worst-case ambient temperature of 35 ° F.

B. Emission Factors

The maximum air contaminant mass emission rates (lb/hr), concentrations (ppmvd @ 15% O_2), and startup and shutdown emissions rates (lb/hr) estimated by the manufacturer (see Attachment B for manufacturer's emissions data) for the proposed GTE are summarized below:

Maximum Full Load Emission Rates and Concentrations (@ 100% Load & 35 °F)						
	NO_X	CO	VOC	PM_{10}	SO_X	NH_3
Mass Emission Rates (lb/hr)	16.25[1]	23.75[1]	2.95[1]	9.0	3.5	24.06
ppmvd @ 15% O_2 limits	2.5[1]	6.0[1]	1.3[1]	--	--	10.0

[1] Compliance with the emission limits will not be required during short-term excursions, limited to a cumulative total of 10 hours per rolling 12-month period (NOx) and combustion tuning events, limited to no more than 6 hours per calendar year (NOx, CO and VOC).

Maximum Startup and Shutdown Emissions					
	NO_X	CO	VOC	PM_{10}	SO_X
Mass Emission Rate (lb/hr)	80	902	16	9.0	3.5

C. Calculations:

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

Section 3.26 of Rule 2201 defines the potential to emit (PE) as the maximum capacity of an emissions unit to emit a pollutant under its physical and operational design. The criteria pollutant potentials to emit for each emission unit is presented below:

As this is a new unit, the pre-project potential to emit (PE1) is equal to zero.

2. Post Project Potential to Emit (PE2):

a. Maximum Hourly PE

The maximum hourly potential to emit for NO_X, CO, and VOC will occur when the unit is operating under start-up mode. Maximum hourly emissions for PM_{10}, SO_X, and NH_3 will occur when the unit is operating at full load. Start up emissions of PM_{10}, SO_X, and NH_3 are no higher than during full load operation. The maximum hourly emissions are summarized in the table below:

Maximum Hourly Startup Emission Rates (lb/hr)						
	NO_X	CO	VOC	PM_{10}	SO_X	NH_3
Mass Emission Rates	80	902	16	9.0	3.5	24.06

b. Maximum Daily PE

Maximum daily emissions for NO_X, CO, and VOC occur when the unit undergoes one two (2) hour period of startup and twenty-two (22) hours operating at full load. The results are summarized in the table below:

	Startup Emissions (lb/hr – average over 2 hrs)	Full Load Emissions (lb/hr)	Maximum Daily Emissions (lb/day)
NO_X	46.25	16.25	450.0
CO	795.25	23.75	2113.0
VOC	16.00	2.95	96.9
PM_{10}	N/A[2]	9.00	216.0
SO_X	N/A[2]	3.50	84.0
NH_3	N/A[2]	24.06	577.4

c. Maximum Annual and Quarterly PE

The maximum annual PE is the total of 300 hours per year of worst-case hourly startup emissions and 8460 hours per year of full load emissions. Quarterly emissions are the annual totals multiplied by the number of days in the respective quarter, either 90, 91 or 92), and divided by 365 days.

For example, for NOx

16.25 lb/hr x (8460 hrs/yr) + 80 lb/hr x (300 hrs/yr) ≈ 161,480 lb/yr[3]

The results are summarized in the table below:

Maximum Annual and Quarterly PE						
	NO_X	CO	VOC	PM_{10}	SO_X	NH_3
Annual PE (lb/yr)	161,480	471,492	29,730	78,840	30,616	210,766
Q1 (lb/qtr)	39,817	116,258	7,331	19,440	7,549	51,970
Q2 (lb/qtr)	40,260	117,550	7,412	19,656	7,633	52,547
Q3 (lb/qtr)	40,702	118,842	7,494	19,872	7,717	53,125
Q4 (lb/qtr)	40,702	118,842	7,494	19,872	7,717	53,125

3. Quarterly Delta Potential to Emit (ΔPE):

The quarterly delta potential to emit is used to complete the emission profile for each emissions unit and is calculated as follows:

ΔPE (lb/qtr) = PE2 (lb/qtr) – PE1 (lb/qtr)
Since the pre-project potential to emit (PE1) is equal to zero, ΔPE will be equivalent to the PE2 calculated above in Section VII.C.2.

[2] There is no difference between startup and full load hourly emissions for PM_{10}, SO_x and NH_3
[3] Proposed by the applicant. Annual emissions totals of NOx, CO, SOx and VOC are not exact due to rounding.

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

Pursuant to Section 4.9 of District Rule 2201, the Pre-project Stationary Source Potential to Emit (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 that have occurred at the source, and which have not been used on-site.

Pre Project Stationary Source Potential to Emit (SSPE1)					
Permit Unit	NO_X	CO	VOC	PM_{10}	SO_X
S-3636-1-3	114,828	406,722	75,873	74,781	28,260
S-3636-2-3	114,828	406,722	75,873	74,781	28,260
S-3636-3-3	114,828	406,722	75,873	74,781	28,260
S-3636-4-3	0	0	0	8,059	0
S-3636-5-3	0	0	0	4,059	0
S-3636-7-2	368	724	46	0	0
S-3636-12-0	889	46	17	11	27
S-3636-13-0	0	0	0	3577	0
Pre-project SSPE (SSPE1)	345,741	1,220,936	227,682	240,049	84,807

5. Post-Project Stationary Source Potential to Emit (SSPE2)

Pursuant to Section 4.10 of District Rule 2201, the Post-project Stationary Source Potential to Emit (SSPE2) is the post-project annual PE of all units at the Stationary Source.

Post Project Stationary Source Potential to Emit (SSPE2)					
Permit Unit	NO_X	CO	VOC	PM_{10}	SO_X
S-3636-1-3	114,828	406,722	75,873	74,781	28,260
S-3636-2-3	114,828	406,722	75,873	74,781	28,260
S-3636-3-3	114,828	406,722	75,873	74,781	28,260
S-3636-4-3	0	0	0	8,059	0
S-3636-5-3	0	0	0	4,059	0
S-3636-7-2	368	724	46	0	0
S-3636-12-0	889	46	17	11	27
S-3636-13-0	0	0	0	3577	0
S-3636-14-0	161,480	471,492	29,730	78,840	30,616
Post-project SSPE (SSPE2)	507,221	1,692,428	257,412	318,889	115,423

6. Major Source Determination

Pursuant to Section 3.24 of District Rule 2201, a major source is a stationary source with post-project emissions or a Post-project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values. As shown in the table below, Pastoria Energy Facility is a major source for NOx, CO, VOC and PM_{10}.

Major Source Determination					
Permit Unit	NO_X	CO	VOC	PM_{10}	SO_X
Post-project SSPE (SSPE2)	507,221	1,692,428	257,412	318,889	115,423
Major Source Threshold	100,000	200,000	100,000	140,000	140,000
Major Source?	Yes	Yes	Yes	Yes	No

7. Baseline Emissions (BE)

The BE calculation (in lbs/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.

BE = Pre-project Potential to Emit 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 Section 3.23

As the subject GTE is a new emissions unit, BE = PE1 = 0 for all criteria pollutants.

8. Contemporaneous Increase in Permitted Emissions (CIPE) for Major Modification Determination

A Major Modification (Title 1 Modification) occurs if the Post-Project Stationary Source Potential to Emit (SSPE2) exceeds the Major Source Thresholds (as defined in Rule 2201) and the Contemporaneous Increase in Permitted Emissions (CIPE), is equal to or greater than one or more of the following threshold values:

Calculating the CIPE is required for an existing Major Source to determine if the current project has emissions increases above Major Modification thresholds.

For an existing Major Source:

Major Modification CIPE Thresholds	
Pollutant	CIPE (lb/year)
NO_X	50,000
SO_X	30,000
PM_{10}	30,000
VOC	50,000

Based on the PE2 values calculated above, the Pastoria Energy Faclity expanison poject will have a CIPE exceeding the above listed threhold values for NOx, PM10 and SOx, therefore, the project is a Major Modification.

VIII. COMPLIANCE:

Rule 1080 Stack Monitoring (12/17/92)

This rule grants the APCO the authority to request the installation and use of continuous emissions monitors (CEMs), and specifies performance standards for the equipment and administrative requirements for recordkeeping, reporting, and notification.

The GTE will be equipped with operational CEMs for NO_X, CO, and O_2. Provisions included in the operating permit are consistent with the requirements of this Rule. Compliance with the requirements of this Rule is anticipated.

Proposed Rule 1080 Conditions:

- The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080]

- Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080]

- Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080]

- Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and compliance source testing are both

performed, in accordance with EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080]

- Permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080]

- Permittee shall submit a written report to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions; nature and cause of excess (averaging period used for data reporting shall correspond to the averaging period for each respective emission standard); corrective actions taken and preventive measures adopted; applicable time and date of each period during a CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rule 1080]

Rule 1081 Source Sampling (12/16/93)

This rule requires adequate and safe facilities for use in sampling to determine compliance with emissions limits, and specifies methods and procedures for source testing and sample collection.

The requirements of this rule will be included in the operating permits. Compliance with this Rule is anticipated.

Proposed Rule 1081 Conditions:

- The exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NOx, CO, and O2 analyzer during District inspections. The sampling ports shall be located in accordance with the CARB regulation titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Emission Monitoring and Testing. [District Rule 1081]

- Source testing to measure startup NOx, CO, and VOC mass emissions rates has been successfully conducted for unit #3, S-3636-3-3. This testing certified the CEM relative accuracy (RATA) in accordance with 40 CFR 60, Appendix B. RATA testing of the CEMs to certify startup emissions rates for at least one of the four Pastoria Energy Facility turbines is required at least once every seven years. [District Rule 1081]

- Source testing to measure the NOx, CO, and VOC emission rates (lb/hr and ppmvd @ 15% O2) shall be conducted within 90 days after initial operation and at least once every twelve months thereafter. [District Rules 1081 and 4703]

- Source testing to measure the PM10 emission rate (lb/hr) and the ammonia emission rate shall be conducted within 90 days after initial operation and at least once every twelve months thereafter. [District Rule 1081]

- Compliance with natural gas sulfur content limit shall be demonstrated within 60 days after the end of the commissioning period and periodically thereafter as required by 40 CFR 60 Subpart GG and 40 and 40 CFR 75. [District Rules 1081, 2540, and 4001]

- Compliance demonstration (source testing) shall be District witnessed, or authorized and samples shall be collected by a California Air Resources Board certified testing laboratory. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

- The following test methods shall be used: PM10 - EPA Method 5 (front half and back half) or 201 and 202a, NOx - EPA Method 7E or 20, CO - EPA Method 10 or 10B, O2 - EPA Method 3, 3A, or 20, VOC - EPA Method 18 or 25, ammonia - BAAQMD ST-1B, and fuel gas sulfur content - ASTM D3246. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. [District Rules 1081, 4001, and 4703]

Rule 1100 Equipment Breakdown (12/17/92)

This rule defines a breakdown condition and the procedures to follow if one occurs. The corrective action, the issuance of an emergency variance, and the reporting requirements are also specified.

The requirements of this Rule will be included in the operating permits. Compliance with this rule is anticipated.

Proposed Rule 1100 Conditions:

- Permittee shall notify the District of any breakdown condition as soon as reasonably possible, but no later than one hour after its detection, unless the owner or operator demonstrates to the District's satisfaction that the longer reporting period was necessary. [District Rule 1100, 6.1]

- The District shall be notified in writing within ten days following the correction of any breakdown condition. The breakdown notification shall include a description of the equipment malfunction or failure, the date and cause of the initial failure, the estimated emissions in excess of those allowed, and the methods utilized to restore normal operations. [District Rule 1100, 7.0]

Rule 2010 Permits Required (12/17/92)

This rule requires any person building, altering, or replacing any operation, article, machine, equipment, or other contrivance, the use of which may cause the issuance of air contaminants, to first obtain authorization from the District in the form of an application for DOC. By submission of this application for DOC, Pastoria Energy Facility LLC is complying with the requirements of this rule.

Rule 2201 New and Modified Stationary Source Review Rule (06/21/01)

A. BACT:

1. BACT Applicability

Pursuant to Sections 4.1.1 and 4.1.2, BACT shall be applied to a new, relocated, or modified emissions unit if the new or relocated unit has a Potential to Emit (PE) exceeding two pounds in any one day or the modified emissions unit results in an Adjusted Increase in Permitted Emissions (AIPE) exceeding 2 lb/day for NO_X, CO, VOC, PM_{10}, or SO_X. For CO emissions, the CO Post-project Stationary Source Potential to Emit (SSPE2) must also exceed 200,000 lb/year to trigger BACT.

As seen in Section VII.C.2.b of this evaluation, the applicant is proposing to install a new gas turbine engine generator with PEs greater than 2 lb/day for NO_X, CO, VOC, PM_{10}, and SO_X. BACT is triggered for NO_X, VOC, PM_{10}, and SO_X criteria pollutants since the PEs are greater than 2 lbs/day. BACT is triggered for CO since the SSPE2 for CO is greater than 200,000 lbs/year, as demonstrated in Section VII.C.5 of this document.

The PE of ammonia is greater than two pounds per day for the GTE. However, the ammonia emissions are required for the operation of the SCR system, which is BACT

for NO_X. The emissions from a control device that is determined by the District to be BACT are not subject to BACT.

BACT Guideline 3.4.7 from the District's BACT Clearinghouse is applicable to the GTE installation [Gas Turbine ≥ to 50 MW, Uniform Load, without Heat Recovery]. A copy of Guideline 3.4.7 is included as Attachment C.

3. Top-Down Best Available Control Technology (BACT) Analysis

Per Permit Services Policies and Procedures for BACT, a Top-Down BACT analysis shall be performed as a part of the application review for each application subject to the BACT requirements pursuant to the District's NSR Rule.

A top down BACT analysis is included as Attachment D.

4. BACT Summary:

BACT has been satisfied by the following:

NO_X: 2.5 ppmv @ 15% O_2 (1-hour rolling average, except during startup/shutdown) with Dry Low NO_X Combustors, SCR with ammonia injection and natural gas fuel

CO: 6.0 ppmv @ 15% O_2 (3-hour rolling average, except during startup/shutdown) with good combustion practices and natural gas fuel

VOC: 1.3 ppmv @ 15% O_2 (3-hour rolling average, except during startup/shutdown) with good combustion practices and natural gas fuel

PM_{10}: Air inlet filter cooler, lube oil vent coalescer, and PUC regulated quality natural gas fuel with no more than 0.75 grain S/100 dscf

SO_X: PUC regulated quality natural gas fuel with no more than 0.75 grain S/100 dscf

B. Offsets:

1. Offset Applicability:

Pursuant to Section 4.5.3, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the Post-project Stationary Source Potential to Emit (SSPE2) equals to or exceeds emissions of 20,000 lbs/year for NO_X and VOC,

200,000 lbs/year for CO, 54,750 lbs/year for SO_X and 29,200 lbs/year for PM_{10}. As seen in the table below, the facility's SSPE2 is greater than the offset thresholds for NO_X, CO, VOC, PM_{10} and SOx emissions. Therefore, offset calculations are necessary.

Offset Determination					
	NO_X	CO	VOC	PM_{10}	SO_X
Pre-project SSPE (SSPE1)	345,741	1,220,936	227,682	240,049	84,807
Post-project SSPE (SSPE2)	507,221	1,692,428	257,412	318,889	115,423
Offset Threshold	20,000	200,000	20,000	29,200	54,750
Offsets Triggered	Yes	Yes	Yes	Yes	Yes

2. Quantity of Offsets Required:

As seen above, the SSPE2 is greater than the offset thresholds for NO_X, CO, VOC, PM_{10}, and SOx; therefore offset calculations will be required for this project.

Per Sections 4.7.1 and 4.7.3, the quantity of offsets in pounds per year for NO_X 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)
OR = Offset Ratio, determined pursuant to Section 4.8 (Distance Offset Ratio) or (Interpollutant Offset Ratio) pursuant to Section 4.13.3

BE = Pre-project Potential to Emit 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)

The facility is proposing to install a new emissions unit; therefore Baseline Emissions are equal to zero. Also, there is only one emissions unit associated with this project and there are no increases in cargo carrier emissions; therefore offsets can be determined as follows:

Offsets Required (lb/year) = PE2 x OR

For NOx, VOC and SOx, the applicant is proposing to use emissions reduction credits that were generated at locations greater than 15 miles from the location of the Pastoria Energy Facility; therefore, a distance-offset ratio of 1.5:1.0 is required. For PM_{10}, the applicant is proposing the use of NOx emission reduction credits to offset PM_{10} at an offset ratio of 2.72:1.0. The District has previously approved the use of this ratio for the Pastoria Energy Facility, finding that it satisfied the requirements set forth in Section 4.13.3 for the use of interpollutant offsets. (See discussion below on the use of interpollutant offsets.)

The following tables summarize the offset requirements for the Pastoria Energy Facility expansion, listing the annual and quarterly PE2, the required offset ratio, the amounts of offsets required and the Emission Reduction Credit certificates proposed for use in this project.

The CO emissions increase in this project is exempt from offset requirements under the provisions set forth in Section 4.6.1.

NOx- Offsets Required and Proposed Credits					
		NOx	NOx	NOx	NOx
		Qtr1	Qtr2	Qtr3	Qtr4
PE2 (lb/qtr)		39,817	40,260	40,370	40,370
Offset Ratio		1.5	1.5	1.5	1.5
Offsets Required (lb/qtr)		59,726	60,389	61,053	61,053
NOx Offsets Required to Offset PM_{10} @ 2.72:1.0 (lb/qtr). See the PM10 offset table below.		52,877	53,464	54,052	54,052
Total Offsets Required (lb/qtr)		112,603	113,853	115,105	115,105
NOx ERC Cert S1554-2		109,935	121,484	127,922	117,272
NOx ERC Cert S1543-2		10,354	8,381	11,018	11,467
NOx Credits Remaining		7,686	16,012	23,835	13,634

VOC - Offsets Required and Proposed Credits					
		VOC	VOC	VOC	VOC
		Qtr1	Qtr2	Qtr3	Qtr4
PE2 (lb/qtr)		7,331	7,412	7,494	7,494
Offset Ratio		1.5	1.5	1.5	1.5
Offsets Required (lb/qtr)		10,996	11,118	11,241	11,241
VOC ERC Cert S-444-1		47,635	37,534	40,666	32,156
VOC ERC Cert S-1666-1		0	0	0	9
VOC Credits Remaining		36,639	26,416	29,425	20,924

PM - Offsets Required and Proposed Credits					
		PM_{10}	PM_{10}	PM_{10}	PM_{10}
		Qtr1	Qtr2	Qtr3	Qtr4
PE2 (lb/qtr)		19,440	19,656	19,872	19,872
Offset Ratio (NOx for PM10)		2.72	2.72	2.72	2.72
NOx Offsets Required to Offset PM_{10} @ 2.72:1.0 (lb/qtr)		52,877	53,464	54,052	54,052

SOx - Offsets Required and Proposed Credits					
		SO_x	SO_x	SO_x	SO_x
		Qtr1	Qtr2	Qtr3	Qtr4
PE2 (lb/qtr)		7,549	7,633	7,717	7,717
Offset Ratio		1.5	1.5	1.5	1.5
Offsets Required (lb/qtr)		11,324	11,450	11,575	11,575
SO_x ERC Cert S-1344-5		25,521	30,054	14,242	12,127
SO_x Credits Remaining		14,197	18,604	2,667	552

As seen above, the facility has sufficient ERC's to fully offset the emissions increases from the Pastoria Energy Facility expansions project.

Section 4.6 Emission Offset Exemptions:

Pursuant to Section 4.6.1, "Emission offsets shall not be required for increases in carbon monoxide in attainment areas if the applicant demonstrates to the satisfaction of the APCO that the Ambient Air Quality Standards are not violated in the areas to be affected, and such emissions will be consistent with Reasonable Further Progress, and will not cause or contribute to a violation of Ambient Air Quality Standards (AAQS)."

The Technical Services Section of the San Joaquin Valley Unified Air Pollution Control District performed a CO modeling run, using the EPA ISCST3 air dispersion model, to determine if the CO emissions from the new emissions unit would exceed the State and Federal AAQS (Attachment E). Modeling of the worst case 1 hour and 8 hour CO impacts were performed. These values were added to the worst case ambient concentration (background) measured and compared to the ambient air quality standards. Results of the modeling are presented below:

Ambient Modeling Results for CO		
	1 hr std	8 hr std
AAQS (ug/m^3)	23,000	10,000
Worst case ambient (background) (ug/m^3)	4,777	3,029
Modeled impact (ug/m^3)	333	7
Modeled ambient CO (ug/m^3)	5,109	3,036

This modeling demonstrates that the proposed increase in CO emissions will not cause a violation of the CO ambient air quality standards. Therefore, the increase in CO emissions is exempt from offsets pursuant to Section 6.4.1.

Section 4.13.3 – Interpollutant Offsets

The use of interpollutant offsets may be allowed by the APCO on a case-by-case basis provided the applicant demonstrates that the proposed emissions increase will not cause or contribute to a violation of an Ambient Air Quality Standard. The APCO, in allowing the use of interpollutant offsets, shall base his approval on an air quality analysis and shall impose an offset ratio equal to or greater than that required by this rule. As set forth in Section 4.13.3.2, emissions of PM10 may be offset by PM10 precursors. The applicant is proposing the use of the oxides of nitrogen (NOx) to offset the PM10 emissions. As defined in Section 3.29, nitrogen oxides are a precursor to the sulfate fraction of PM10.

The District has demonstrated through ambient air quality monitoring that the authorized PM_{10} emissions increase from the Pastoria Energy Facility will not cause or contribute to a violation of either the 24-hour or annual ambient air quality standard for PM10.

Previously, La Paloma Generating Company in project #980654 and Pastoria Energy Facility in project 99123, established, and the District concurred, that sufficient quantities of PM10 ERCs were not available at reasonable cost to fully offset project PM10 emissions. La Paloma Generating and Pastoria Energy Facility were approved to offset the project PM10 emission increases with NO_X ERCs. The use of NOx to offset PM10 is allowed in Rule 2201 section 4.2.5.3, as approved by the APCO. Section 4.2.5.3 specifically allows interpollutant offsets between PM10 and PM10 precursors.

The use of NO_X ERCs to offset PM10 emission increases has the added air quality benefit of helping to reduce ozone formation in addition to PM10 formation, especially during the summer ozone season (violations of the 24 hour PM10 AAQS typically occur in the winter). In the summer, when particulate levels are low and the levels of ozone are high, the contribution of NO_X to particulate formation is less important, but contribution of NO_X to ozone formation is more important.

Project #980654 for La Paloma Generating Company LLC's power plant located near McKittrick, California established an interpollutant offset ratio of 2.22 lbs NO_X for 1 lb PM10 (2.22 : 1). In the initial permitting of the Pastoria Energy Facility, the District determined that the same 2.22:1.0 interpollutant ratio was appropriate for the Pastoria Energy Facility. The determination was based on the proximity of the Pastoria Energy Facility to La Paloma, approximately 50 miles to the southeast, and that the two facilities were subject to the same general meteorological conditions.

Pastoria has proposed to use the same interpollutant ratio for the expansion project. An updated offset analysis, prepared by Sierra Research and included in Attachment F, arrived at a similar ratio to that originally approved: 2.16:1.0. Thus, the ratio proposed by Pastoria is slightly higher than the ratio arrived at using the updated analysis and appropriate for this project. The updated offset analysis used the Chemical Mass Balance (CMB) model results prepared by the District using inputs from the Bakersfield, Golden State Avenue Monitoring Site for the period February 2000 through January 2001 and the 1999 emissions inventory information. The analysis used the monitoring data available from the nearest monitoring station to the Pastoria site and a methodology consistent with past District practice to arrive at a ratio of tons of NOx reductions needed to reduce one ton of particulate matter. From the ambient CMB modeling data, that relationship was given as the organic carbon PM concentration to the ammonia nitrate PM concentration, normalized to the respective inventory values of organic carbon PM10 and NOx. The District has reviewed the analysis and found it acceptable.

Based on the original and updated interpollutant offset analyses, a ratio of 2.22 to NOx to offset 1.0 ton PM10 is acceptable. As Pastoria is proposing to use banked NOx credits that were achieved at a location greater than 15 miles from the location of their proposed use, New Source Review (Section 4.7.3) requires that a distance-offset ratio of 1.5 be applied to the quantity of offsets required.

When both a distance and an interpollutant offset ratio apply, the accepted District practice is to apply the ratios independently. This means that the excess offsets required due to distance and interpollutant trading are determined independently and then added to the emissions increase to be offset. Therefore, to offset PM10 emissions with NOx credits generated > 15 miles from the location of their use, the following relationship holds:

NOx (lb/yr) = PM10 emission increase (lb/yr) + (1.5 - 1.0) x PM emissions increase (lb/yr)
+ (2.22 - 1.0) x PM10 emissions increase (lb/yr)

NOx (lb/yr) = 2.72 x PM10 emissions increase (lb/yr)

3. Actual Emission Reductions

There are no actual emissions reductions (AERs) proposed as a result of this application. AER = 0.

C. Public Notification:

1. Applicability

District Rule 2201, section 5.4, requires a public notification for the affected pollutants from the following types of projects:

- New Major Sources
- Title I modifications
- New emission units with a PE > 100 lb/day of any one pollutant (IPE Notifications)
- Modifications with SSPE1 below an offset threshold and SSPE 2 above an offset threshold on a pollutant by pollutant basis (Existing Facility - Offset Threshold Notification)
- New stationary sources with SSPE2 exceeding offset thresholds (New Facility - Offset Threshold Notification)
- Any permitting action with a SSIPE exceeding 20,000 lb/yr for any one pollutant. (SSIPE Notice)

a. New Major Source Notice Determination:

New Major Sources are new facilities, which are also Major Sources.

The source is an existing major source and not a new major source. Therefore, public noticing is not required for this project under this provision.

b. Major Modification Determination:

As discussed above in Section VII. 8, the Pastoria Energy Facility expansion results in increases in emissions exceeding the Major Source thresholds for NOx, SOx, and PM10. Thus, the project results in a Major Modification and public noticing is required.

c. PE Notification:

Applications which include a new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. The potential to emit for each unit is summarized in the tables below.

Post-Project Potential to Emit: (S-3636-14-0)						
Permit Unit	NO_X (lb/day)	CO (lb/day)	VOC (lb/day)	PM_{10} (lb/day)	SO_X (lb/day)	NH_3 (lb/day)
S-3636-1-0	450.0	2113.0	96.9	216.0	84.0	577.4
Threshold (lb/day)	100	100	100	100	100	100
Notification Required?	**Yes**	**Yes**	No	**Yes**	No	**Yes**

According to the tables above, permit unit S-3636-14-0 will have a Potential to Emit greater than 100 lbs/day for NO_X, CO, PM_{10} and NH_3 emissions. Therefore, public noticing will be required for PE > 100 lbs/day purposes.

d. Existing Facility - Offset Threshold Notification

The existing Pastoria Energy Facility exceeds the offset thresholds values for all air contaminants; therefore, public noticing under this provision is not possible.

e. New Facility - Offset Threshold Notification

The facility is not a new Stationary Source; therefore, public noticing under this provision is not possible.

f. SSIPE Notification:

A notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/yr of any affected pollutant. As shown in section VII.C.7 of this document, the PE2 for NO_X, CO, VOC, PM_{10}, SO_X, and NH_3 will be more than 20,000 pounds per year. Therefore, a SSIPE notification is required for NO_X, CO, VOC, PM_{10}, SO_X, and NH_3.

2. Public Notice Requirements

Section 5.5 details the actions to be taken by the District when pubic noticing is triggered according to the application types above. The project will be publicly noticed in accordance with the requirements of Section 5.5.

C. Daily Emission Limits:

Daily emissions limitations (DELs) and other enforceable conditions are required by Section 3.17 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.17.1 and 3.17.2, 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.

The DELs for the subject GTE for NO_X, CO, VOC, PM_{10}, SO_X, and NH_3 will consist of lb/day limits and/or emission factors.

Proposed Rule 2201 (DEL) Conditions:

- Emission rates from GTE, except during startup and shutdown periods, shall not exceed any of the following: NOx (as NO2) 16.25 lb/hr and 2.5 ppmvd @ 15% O2; VOC (as methane) 2.95 lb/hr and 1.3 ppmvd @ 15% O2; CO 23.75 lb/hr and 6.0 ppmvd @ 15% O2; PM10 9.0 lb/hr or SOx (as SO2) 3.5 lb/hr. NOx (as NO2) emission limits are one hour rolling averages. All other emission limits are three hour rolling averages. [District Rules 2201, 4001, and 4703]

- Emissions from this unit, on days when a startup and/or shutdown occurs, shall not exceed the following limits: NOx (as NO2) 450 lb/day; VOC 96.9 lb/day; CO 2113 lb/day; PM10 216 lb/day; or SOx (as SO2) 84 lb/day. [District Rule 2201]

- The ammonia (NH3) emissions shall not exceed 10 ppmvd @ 15% O2 averaged over a 24 hour rolling average. [District Rule 2201]

F. Compliance Assurance

1. Source Testing

District Rule 4703 requires NO_X and CO emission testing on an annual basis. The District Source Test Policy (APR 1705 10/09/97) requires annual testing for all pollutants controlled by catalysts. The control equipment will include a SCR system. Ammonia slip is an indicator of how well the SCR system is performing and PM_{10} emissions are a good indicator of how well the inlet air cooler/filter are performing.

Therefore, source testing for NO_X, VOC, CO, PM_{10}, and ammonia slip will be required within 90 days of initial operation and at least once every 12 months thereafter.

Also, source testing of NO_X, CO, and VOC startup emissions is required for one of the four Pastoria Energy Facility GTE's initially and not less than every seven years thereafter. If CEM data is not certifiable to determine compliance with NO_X and CO startup emission limits, then source testing to measure startup NO_X and CO mass emission rates shall be conducted at least once every 12 months. This testing will serve two purposes: to validate the startup emission estimates used in the emission calculations and to verify that the CEMs accurately measure startup emissions.

The unit will be equipped with CEMs for NO_X, CO, and O_2. Each CEM will have two ranges to allow accurate measurements of NO_X and CO emissions during startup. The CEMs must meet the installation, performance, relative accuracy, and quality assurance requirements specified in 40 CFR 60.13 and Appendix B (referenced in the CEM requirements of Rule 4703) and the acid rain requirements in 40 CFR Part 75.

40 CFR Part 60 subpart GG requires fuel nitrogen content testing. The District will accept the NO_X source testing required by District Rule 4703 as equivalent to fuel nitrogen content testing.

40 CFR Part 60 subpart GG requires that fuel sulfur content be monitored. Refer to the monitoring section of this document for a discussion of the fuel sulfur testing requirements.

2. Monitoring

District Rule 4703 requires the monitoring of NO_X emissions. The applicant has proposed a CEMS for NO_X.

CO monitoring is not specifically required by any applicable Rule or Regulation. Nevertheless, due to erratic CO emission concentrations during start-up and shutdown periods, it is necessary to limit the CO emissions on a pound per hour basis. Therefore, a CO CEMS is necessary to show compliance with the CO limits of this permit. The applicant has proposed a CO CEMS.

40 CFR Part 60 Subpart GG requires monitoring of the fuel consumption. Fuel consumption monitoring will be required.

40 CFR Part 60 Subpart GG requires monitoring of the fuel nitrogen content. As stated in the Subpart GG compliance section of this document, the District will allow the annual NO_X source test to substitute for this requirement.

40 CFR Part 60 Subpart GG requires monitoring of the fuel sulfur content. The gas is supplied from a regulated interstate pipeline (Kern River/Mojave) and has a maximum sulfur content of 0.75 gr/scf. Compliance with the gas sulfur content limit will be demonstrated initially within 60 days of start up and periodically as required by 40 CFR 60 Subpart GG and 40 CFR 75.

3. Recordkeeping

The applicant will be required to keep records of all of the parameters that are required to be monitored. Refer to section VIII.F.2 of this document for a discussion of the parameters that will be monitored.

4. Reporting

40 CFR Part 60 Subpart GG requires that the facility report the use of fuel with a sulfur content of more than 0.8% by weight. Such reporting will be required.

40 CFR Part 60 Subpart GG requires the reporting of exceedences of the NO_X emission limit of the permit. Such reporting will be required.

Rule 2520 *Federally Mandated Operating Permits (06/21/01)*

This project will be subject to Rule 2520 (Title V) because it will meet the following criteria specified in section 2.0:

- Section 2.2 states, "Any source that emits or has the potential to emit 100 tons per year of any air contaminant." The facility has the potential to emit greater than 100 tons per year of NO_X, CO, and PM_{10}.

- Section 2.3 states, "Any major source." The facility will be a major source for NO_X, CO, VOC, and PM_{10}.

- Section 2.4 states, "Any emissions unit, including an area source, subject to a standard or other requirement promulgated pursuant to section 111 (NSPS) or 112 (HAPs) of the CAA..." The GTE is subject to NSPS.

- Section 2.5 states "A source with an acid rain unit for which application for an acid rain permit is required pursuant to Title IV (Acid Rain Program) of the CAA." The GTE is subject to the acid rain program.

- Section 2.6 states, "Any source required to have a preconstruction review permit pursuant to the requirements of the prevention of significant deterioration (PSD) program under Title I of the Federal Clean Air Act." This facility is required to obtain a PSD permit from the EPA.

Pursuant to Rule 2520 section 5.3.1, Pastoria Energy Facility must submit a Title V application within 12 months of commencing operations. No action is required at this time.

Proposed Rule 2520 Condition:

- Permittee shall submit an application to comply with SJVUAPCD District Rule 2520 - Federally Mandated Operating Permits within twelve months of commencing operation. [District Rule 2520]

Rule 2540 *Acid Rain Program (11/13/97)*

The proposed GTE is subject to the acid rain program as phase II units, i.e. it will be installed after 11/15/90 and has a generator nameplate rating greater than 25 MW.

The acid rain program will be implemented through a Title V operating permit. Federal regulations require submission of an acid rain permit application at least 24 months before the later of 1/1/2000 or the date the unit expects to generate electricity. The Pastoria Expansion project anticipates beginning commercial operation in 2006.

The acid rain program requirements for this facility are relatively minimal. Monitoring of the NO_X and SO_X emissions and a relatively small quantity of SO_X allowances (from a national SO_X allowance bank) will be required as well as the use of a NO_X CEM.

Proposed Rule 2540 Condition:

- Permittee shall submit an application to comply with SJVUAPCD District Rule 2540 - Acid Rain Program. [District Rule 2540]

Rule 2550 *Federally Mandated Preconstruction Review for Major Sources of Air Toxics (6/18/98)*

Section 2.0 states, "*The provisions of this rule shall only apply to applications to construct or reconstruct a major air toxics source with Authority to Construct issued on or after June*

28, 1998." The applicant has provided the following analysis for Noncriteria pollutants/HAPs.

Noncriteria pollutants are compounds that have been identified as pollutants that pose a significant health hazard. Nine of these pollutants are regulated under the Federal New Source Review program: lead, asbestos, beryllium, mercury, fluorides, sulfuric acid mist, hydrogen sulfide, total reduced sulfur, and reduced sulfur compounds.[4]

In addition to these nine compounds, the federal Clean Air Act lists 189 substances as potential hazardous air pollutants (Clean Air Act Sec. 112(b)(1)). The SJVAPCD has also published a list of compounds it defines as potential toxic air contaminants (Toxics Policy, May 1991; Rule 2-1-316). Any pollutant that may be emitted from the project and is on the federal New Source Review List, the federal Clean Air Act list, and/or the SJVAPCD toxic air contaminant list has been evaluated.

Noncriteria pollutant emission factors for the analysis of emissions from the gas turbines were obtained from AP-42 (Table 3.1-3, 4/00, and Table 3.4-1 of the Background Document for Section 3.1), from the California Air Resources Board's *California Air Toxics Emissions Factors* (CATEF) database for gas turbines, and from source tests on a similar turbine. Specifically, factors for all pollutants except formaldehyde, hexane, propylene, and naphthalene and other PAHs were taken from AP-42. AP-42 did not contain factors for hexane or propylene, and did not include speciated data for PAHs. Factors for these pollutants and for naphthalene were taken from the CATEF database (mean values). The emission factor for formaldehyde reflects the 25 ppbvd MACT limit.

Hazardous Air Pollutant Emissions
Pastoria Energy Facility – Expansion and Total Facility

Hazardous Air Pollutant	CATEF Emission Factor (lb/MMSCF)[a]	Maximum Hourly Emissions per Turbine (lb/hr)[b]	Maximum Annual Emissions per Turbine (tpy)[c]	Maximum Annual Emissions Four Turbines (tpy)[d]
Acetaldehyde	4.08E-02	7.09E-02	0.31	1.240
Acrolein	6.54E-03	1.14E-02	0.0498	0.199
Benzene	1.23E-03	2.14E-02	0.0937	0.375
1,3-Butadiene	4.39E-04	7.63E-04	0.00334	0.013
Ethyl benzene	3.26E-02	5.67E-02	0.25	1.000
Formaldehyde	6.35E-02	0.11	0.48	1.920
Hexane	2.59E-01	0.45	1.97	7.880
Naphthalene	1.33E-03	2.31E-03	0.0101	0.040

[4] These pollutants are regulated under federal and state air quality programs; however, they are evaluated as noncriteria pollutants by the California Energy Commission (CEC).

Polycyclic aromatic hydrocarbons (PAH)	1.79E-04	3.11E-04	0.00136	0.005
Anthracene				
Benzo(a)anthracene				
Benzo(a)pyrene				
Benzo(b)fluoranthrene				
Benzo(k)fluoranthrene				
Chrysene				
Dibenz(a,h)anthracene				
Indeno(1,2,3-cc)pyrene				
Propylene oxide	2.96E-02	4.68E-02	0.20	0.800
Toluene	1.33E-01	0.23	1.01	4.040
Xylenes	6.53E-02	0.11	0.50	2.0
Total			**4.89**	**19.56**

(a) From AP-42 and CATEF databases and formaldehyde MACT standard.
(b) Based on a maximum hourly turbine fuel use of 1,837 MMBtu/hr and fuel HHV of 1,056.4 Btu/scf. (1.74 MMscf/hr)
(c) Based on 8760 hour/yr of operation.
(d) Total HAPS for four GTEs.

As demonstrated above, each individual HAP emission rate is below 10 tons per year and the total HAP emissions rate is below 25 tons per year for the Pastoria Energy Facility. As such, the Pastoria Energy Facility will not be a major air toxics source and the provisions of this rule do not apply.

Rule 4001 *New Source Performance Standards*

40 CFR 60 – Subpart GG

40 CFR Part 60 Subpart GG applies to all GTE with a heat input greater than 10.7 gigajoules per hour (10.2 MMBtu/hr) that commence construction, modification, or reconstruction after 10/03/77. Therefore, this subpart applies to the new GTE installation proposed for Pastoria.

§60.332: Standards for Nitrogen Oxides

Paragraph (a) states, NO_X emissions from the GTE with a minimum heat input rating of 250 MMBtu/hr are limited by the following equation:

NO_X (% by vol @ 15% O_2) 1 hr avg = 0.0075(14.4/Y)+ F

Please note that the most stringent NPSP NO_X standard occurs at the maximum heat rate (depending on ambient temperature) at full load.

NSPS NO_X limit:

Y = max heat rate @ lhv	=	9,020 Btu/kW hr (peak load @ 63.9 F)
	=	9.020 Btu/W hr* 1.0542 kJ/Btu
	Y =	9.509 kJ/W hr (less than 14.4 kJ/W hour)
NO_X % by vol @ 15% O2	=	0.0075 *14.4/9.509 + 0
	=	0.0114 = 114 ppmv @ 15% O2

Pastoria Energy Facility is proposing a NO_X concentration limit of 2.5 ppmv @ 15% O_2 (1 hr average) as required by BACT. Therefore, compliance with the NSPS NO_X standard is expected.

§60.333: Standards for Sulfur Dioxide

Paragraphs (a) and (b) define the applicable SO_X limits as follows:

SO_X	=	0.015% by vol @ 15% O_2
	=	150 ppmv @ 15% O_2
or		fuel S $\leq$ 0.8% by weight.

SO_X emissions are based on combusting natural gas with a fuel sulfur content of 0.75 gr/100 scf, which is equivalent to in a SO_X emission concentration of approximately 0.38 ppmv @ 15% O2. The percent sulfur by weight of natural gas of 0.75 gr-S/100 scf natural gas is 0.002527%, determined as follows (assuming a 100 scf sample comprised of methane at 60 °F):

$$\left(\frac{0.75\,\text{gr}-\text{S}}{100\,\text{ft}^3-\text{NG}}\right)\times\left(\frac{\text{lb}-\text{S}}{7000\,\text{gr}-\text{S}}\right)\times\left(\frac{\text{ft}^3-\text{NG}}{0.0424\ \text{lb}-\text{NG}}\right) = 2.527\times10^{-5}\,\frac{\text{lb}-\text{S}}{\text{lb}-\text{NG}}$$

Both SO_X emissions and fuel sulfur content are less than that required by Subpart GG. Recordkeeping and reporting of the fuel sulfur content is required as specified in section 60.334 (b)(2). Reporting will be performed using an alternative custom reporting schedule.

Reporting and notifications, and initial compliance testing will be required as specified in 40 CFR, Subpart A. Compliance is expected.

§60.334: Monitoring of Operations

Paragraph (b) states, *"The owner or operator of any stationary gas turbine subject to the provisions of this subpart shall monitor sulfur content and nitrogen content of the fuel*

being fired in the turbine." As discussed Section VIII.F.1 and VIII.F.2 of this FDOC, compliance is expected.

Paragraph (c)(2) states, "*Any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8 percent*" sulfur dioxide, the facility is required to submit a semiannual report to the District. As discussed Section VIII.F.4 of this PDOC such reporting will be required, and compliance is expected.

Rule 4002 National Emissions Standards for Hazardous Air Pollutants (NESHAP) (5/20/04)

Pursuant to Section 2.0, "*All sources of hazardous air pollution shall comply with the standards, criteria, and requirements set forth therein;*" therefore, the requirements of this rule applies to the Pastoria Energy Facility. But there are no applicable requirements for a non-major HAPs source; therefore no actions are necessary to show compliance with this rule.

Rule 4101 Visible Emissions (11/15/02)

Per Section 5.0, no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity).

The GTE lube oil vents will be limited by permit condition to not have visible emissions, except for three minutes in any hour, greater than 5% opacity as a BACT requirement and the exhaust stack emissions will be limited by permit condition to no greater than 20% opacity except for three minutes in any hour. Therefore compliance is expected.

Proposed Rule 4101 Conditions:

- No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]

- Combustion turbine generator (CTG) and electrical generator lube oil vents shall be equipped with mist eliminators. Visible emissions from lube oil vents shall not exhibit opacity of 5% or greater, except for up to three minutes in any hour. [District Rules 2201 and 4101]

Rule 4102 Nuisance (12/17/92)

Section 4.0 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a

result of these operations, provided the equipment is well maintained as required by permit conditions. Therefore, compliance with this rule is expected.

A. California Health & Safety Code 41700 (Health Risk Analysis)

A Health Risk Assessment (HRA) is required for any increase in hourly or annual emissions of hazardous air pollutants (HAPs). HAPs are limited to substances included on the list in CH&SC 44321 and that have an OEHHA approved health risk value. The installation of the GTE S-3636-14 at the Pastoria Energy Facility results in increases in emissions of HAPs.

A health risk screening assessment was performed for the proposed project and is included in Attachment E. The acute and chronic hazard indices were less than 1.0 and the cancer risk was less than one in a million. Under the District's risk management policy, Policy TOX 1, TBACT is not required for the proposed GTE. The project risk parameters are summarized below:

Screen HRA Summary				
	Acute Hazard Index	Chronic Hazard Index	70 yr Cancer Risk	T-BACT Required?
S-3636-14 (Unit #4)	0.03	0.16	0.8×10^{-6}	**NO**

- No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
- During startup or shutdown, GTE exhaust emissions shall not exceed any of the following limits: NOx (as NO2) - 80 lb/hr, VOC - 16 lb/hr, or CO - 902 lb/hr, based on three hour averages. [District Rules 2201 and 4102]

Rule 4201 *Particulate Matter Concentration (12/17/92)*

Section 3.1 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot.

PM Emissions = 9 lb/hr
Heat Input at 60% load and 110 °F = 1083.4 MMBtu/hr
EPA F-Factor for natural gas combustion = 8710 dscf/MMBtu
Assume 12.55% O_2 in exhaust
Exhaust Gas Flow, dscfm = 1083.4 MMBtu/hr x 8710 dscf/MMBtu x (20.9%/20.9%-12.55%) x 1 hr/60 min = 393,655 dscfm

Grain Loading = $\frac{(9\ lb/hr \times 1\ hour/60\ min \times 7000\ grains/lb)}{393{,}655\ dscf/min} = 0.0027\ gr/dscf$

As shown above, PM emissions for the proposed GTE will be less than 0.1 gr/dscf. Compliance is expected.

Proposed Rule 4201 Condition:

- Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

Rule 4301 Fuel Burning Equipment (12/17/92)

The GTE produces power mechanically, i.e. the products of combustion pass across the power turbine blades that cause the turbine shaft to rotate. The turbine shaft is coupled to an electrical generator shaft which is rotated to produce electricity. Because the GTE produces power by mechanical means, it does not meet the definition of fuel burning equipment. Rule 4301 does not apply to the GTE proposed in this project.

Rule 4703 Stationary Gas Turbines (4/25/02)

Sections 5.1.1 and 5.2 set forth the Tier II emission requirements of this rule. NO_X emissions from stationary GTE systems greater than 10 MW operating in simple cycle mode with more than 877 hrs/yr of operation must not exceed 3 ppmv NOx at 15% O2 and 25 ppmv CO @ 15% O2. (As the final compliance date for the standard option for this class of turbine was April 30, 2005, new GTE constructed after that date must meet the more stringent enhanced NOx emissions option.)

During normal operation the GTE will have emissions not exceeding 2.5 ppmv NOx @ 15% O_2 and 6.0 ppmv CO @ 15% O2. These limits are less than the emissions allowed by Rule 4703.

Monitoring and recordkeeping:

Sections 6.2 and 6.3 contain the following monitoring, recordkeeping, and source testing requirements.

- 6.2.1 Except for units subject to Section 6.2.3, for GTE without exhaust-gas NO_X control devices; install, operate, and maintain continuous emissions monitoring equipment for NO_X and oxygen or install and maintain an APCO-approved alternate monitoring scheme.

- 6.2.4 Maintain records for inspection at any time for a period of five years.

- 6.2.5 Correlate control system operating parameters with NO_X emissions. This requirement applies to the selective catalytic reduction system. This information may be used by the APCO to determine compliance when the continuous emissions monitoring system not operating properly.

- 6.2.6 Maintain an operating log that includes, on a daily basis, the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation, type and quantity of fuel used (liquid/gas).

- 6.3.1 Provide source test information annually regarding the exhaust gas NO_X and CO concentrations, and, if used as a basis for Tier 1 emission limit calculations, the demonstrated percent efficiency (EFF) of the GTE.

The facility must demonstrate compliance annually with the NO_X and CO emission limits using the following test methods:

- Oxides of nitrogen emissions for compliance tests shall be determined by using EPA Method 7E or EPA Method 20.

- Carbon monoxide emissions for compliance tests shall be determined by using EPA Test Methods 10 or 10B.

- Oxygen content of the exhaust gas shall be determined by using EPA Methods 3, 3A, or 20.

- HHV and LHV of gaseous fuels shall be determined by using ASTM D3588-91, ASTM 1826-88, or ASTM 1945-81.

These requirements will be included as permit conditions. Therefore, compliance with this rule is expected.

Proposed Rule 4703 Conditions:

- Emission rates from this unit, except during startup and shutdown periods, shall not exceed any of the following: NOx (as NO2) 16.25 lb/hr and 2.5 ppmvd @ 15% O2; VOC (as methane) 2.95 lb/hr and 1.3 ppmvd @ 15% O2; CO 23.75 lb/hr and 6.0 ppmvd @ 15% O2; PM10 9.0 lb/hr; or SOx (as SO2) 3.495 lb/hr. NOx (as NO2) emission limits are one hour rolling averages. All other emission limits are three hour rolling averages. [District Rules 2201, 4001, and 4703]

- The permittee shall submit to the District information correlating the NOx control system operating parameters to the associated measured NOx output. The information must be sufficient to allow the District to determine compliance with the NOx emission limits of this permit during times that the CEMS is not functioning properly. [District Rule 4703]

- The GTE exhaust shall be equipped with continuous emission monitors (CEMS) for NOx, CO, and O2. Continuous emissions monitor(s) shall meet the requirements of 40 CFR part 60, Appendices B and F (for CO), and 40 CFR part 75 (for NOx and O2), and of the District-approved monitoring protocol, and shall be capable of monitoring emissions during normal operating conditions, and during startups and shutdowns provided the CEM(s) pass the relative accuracy requirement for startups and shutdowns specified herein. If relative accuracy of CEM(s) cannot be demonstrated during startup conditions, CEM results during startup and shutdown events shall be replaced with startup emission rates obtained from source testing to determine compliance with emission limits contained in this document. [District Rules 2201, 4001, and 4703]

- Source testing to measure the NOx, CO, and VOC emission rates (lb/hr and ppmvd @ 15% O2) shall be conducted within 90 days after initial operation and at least once every twelve months thereafter. [District Rules 1081 and 4703]

- The following test methods shall be used: PM10 - EPA Method 5 (front half and back half) or 201 and 202a, NOx - EPA Method 7E or 20, CO - EPA Method 10 or 10B, O2 - EPA Method 3, 3A, or 20, VOC - EPA Method 18 or 25, ammonia - BAAQMD ST-1B, and fuel gas sulfur content - ASTM D3246. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. [District Rules 1081, 4001, and 4703]

- The permittee shall maintain the following records: date and time, duration, and type of any startup, shutdown, or malfunction; performance testing, evaluations, calibrations, checks, adjustments, any period during which a continuous monitoring system or monitoring device was inoperative, and maintenance of any continuous emission monitor. [District Rules 2201 and 4703]

- The permittee shall maintain the following records: hours of operation, fuel consumption (scf/hr and scf/rolling twelve month period), continuous emission monitor measurements, calculated ammonia slip, and calculated NOx mass emission rates (lb/hr and lb/twelve month rolling period). [District Rules 2201 and 4703]

Rule 4801 Sulfur Compounds (12/17/92)

Per Section 3.1, a person shall not discharge into the atmosphere sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding in concentration at the point of discharge: 0.2 % by volume calculated as SO_2 on a dry basis averaged over 15 consecutive minutes:

The sulfur of the natural gas fuel is 0.75 gr/100 dscf.

This fuel sulfur content results in a SO_X emission concentration of approximately 0.38 ppmv @ 15% O2. Therefore, SO_X emissions are not expected to exceed 2000 ppmvd, and compliance is expected.

Rule 8011 General Requirements (11/15/01)

The definitions, exemptions, requirements, administrative requirements, recordkeeping requirements, and test methods set forth in this rule are applicable to all rules under Regulation VIII (Fugitive PM10 Prohibitions) of the Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District.

Rule 8021 Construction, Demolition, Excavation, Extraction and Other Earthmoving* Activities *(11/15/01)

The purpose of this rule is to limit fugitive dust emissions from construction, demolition, excavation, and other earthmoving activities. It requires the use of control measures to maintain visible dust emissions (VDE) under the 20% opacity requirement.

The major earth moving work at the Pastoria Energy Facility has been completed and the installation of the S-3636-14 (unit #4) is not expected to cause any significant dust. Through the use of dust control measures (e.g., water, approved chemical stabilizers, etc.) during installation of unit #4, opacity will be maintained below 20% per Rule 8021 requirements. Compliance with the requirements of this rule is anticipated.

Rule 8031 Bulk Materials (11/15/01)

Pursuant to Section 2.0, this rule is applicable to the outdoor handling, storage, and transport of any bulk material. The major earth moving work and site preparation at the Pastoria Energy Facility has been completed and the storage of bulk materials onsite is not expected. Compliance with this rule is expected.

Rule 8041 Carryout and Trackout (11/15/01)

Pursuant to Section 2.0, this rule is applicable to all sites that are subject to Rule 8021 (Construction, Demolition, Excavation, Extraction, and other Earthmoving Activities), Rule 8031 (Bulk Materials), and Rule 8071 (Unpaved Vehicle and Equipment Traffic Areas) where carryout or trackout has occurred or may occur. The road into the Pastoria Energy Facilty is paved, as are all major traffic areas on the site. Significant carryout and trackout are not expected for the Pastoria expansion and compliance is expected with the requirements of the rule.

Rule 8051 Open Areas (11/15/01)

Pursuant to Section 2.0, this rule is applicable to any open area having 3.0 acres or more of disturbed surface area, that has remained undeveloped, unoccupied, unused or vacant for more than seven days. An disturbed open area of 3.0 acres or greater is not expected for the Pastoria expansion. Compliance with this rule is expected.

Rule 8061 Paved and Unpaved Roads (11/15/01)

Pursuant to Section 2.0, this rule applies to any new or existing public or private paved or unpaved road, road construction project, or road modification project. There is no road construction expected for the Pastoria expansion. Compliance with this rule is expected.

Rule 8071 Unpaved Vehicle/Equipment Traffic Areas (11/15/01)

Pursuant to Section 2.0, this rule applies to any unpaved vehicle/equipment traffic area of 1.0 acre or larger. There are no new unpaved vehicle/equipment traffic areas expected for the Pastoria expansion project. Compliance with the requirements of the rule is expected.

Rule 8081 Agricultural Sources (11/15/01)

Pursuant to Section 2.0, this rule applies to off-field agricultural sources. Pastoria has no associated off-field agricultural sources. Compliance with the requirements of the rule is expected.

California Environmental Quality Act (CEQA)

The California Energy Commission (CEC) is the lead Agency for CEQA. Generally, the District cannot make its final decision on it's Determination of Compliance until CEQA has been satisfied. For power generating projects that qualify for expedited processing

(per District policy), the Determination of Compliance will be issued if the District's analysis and public notice is completed prior to CEQA approval. If the Determination of Compliance is issued prior to CEQA approval, the ATCs will include the following condition:

- The permittee shall not begin actual onsite construction of the equipment authorized by this Determination of Compliance until the lead agency satisfies the requirements of the California Environmental Quality Act (CEQA). [California Environmental Quality Act]

California Health & Safety Code, Section 42301.6 (School Notice)

As discussed in Section III of this evaluation, this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

California Health & Safety Code, Section 44300 (Air Toxic "Hot Spots")

Section 44300 of the California Health and Safety Code requires submittal of an air toxics "Hot Spot" information and assessment report for sources with criteria pollutant emissions greater than 10 tons per year. However, Section 44344.5 (b) states that a new facility shall not be required to submit such a report if all of the following conditions are met:

1. The facility is subject to a district permit program established pursuant to Section 42300.

2. The district conducts an assessment of the potential emissions or their associated risks, and finds that the emissions will not result in a significant risk.

3. The district issues a permit authorizing construction or operation of the new facility.

A health risk screening assessment was performed for the proposed project. A copy of that assessment is included in Attachment E. The acute and chronic hazard indices are less than 1.0 and the cancer risk is less than one in a million, which are the thresholds of significance for toxic air contaminants. This project qualifies for exemption by satisfying the criteria listed above.

IX. RECOMMENDATION:

Compliance with all applicable rules and regulations is expected. Issue the Preliminary Determination of Compliance for the Pastoria Energy Facility expansion subject to the conditions presented in Attachment A.

X. BILLING INFORMATION:

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-3636-14	3020-08B-I	164,000 kW	$11,323.00

ATTACHMENT A

PDOC CONDITIONS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102] N

2. The permittee shall not begin actual onsite construction of the equipment authorized by this Determination of Compliance until the lead agency satisfies the requirements of the California Environmental Quality Act (CEQA). [California Environmental Quality Act] N

3. The permittee shall notify the District of the date of initiation of construction no later than 30 days after such date, the date of anticipated startup not more than 60 days nor less than 30 days prior to such date, and the date of actual startup within 15 days after such date. [District Rule 4001] N

4. Selective catalytic reduction (SCR) system shall serve the gas turbine engine (GTE). Permittee shall submit SCR catalyst design details to the District at least 30 days prior to commencement of construction. [District Rule 2201] N

5. Permittee shall submit continuous emission monitor design, installation, and operational details to the District at least 30 days prior to commencement of construction. [District Rule 2201] N

6. Permittee shall minimize the emissions from GTE to the maximum extent possible during the commissioning period. Conditions #6 through #16 shall apply only during the commissioning period as defined below. Unless otherwise indicated, Conditions #17 through #66 shall only apply after the commissioning period has ended. [District Rule 2201] N

7. Commissioning activities are defined as, but not limited to, all testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and the construction contractor to insure safe and reliable steady state operation of the GTE and all ancillary equipment. [District Rule 2201] N

8. Commissioning period shall commence when all mechanical, electrical, and control systems are installed and individual system startup has been completed, or when the GTE is first fired, whichever occurs first. The commissioning period shall terminate when the GTE has successfully completed initial performance testing and is available for commercial operation. [District Rule 2201] N

9. At the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the combustors of this unit shall be tuned to minimize emissions. [District Rule 2201] N

10. At the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the Selective Catalytic Reduction (SCR) system shall be installed, adjusted, and operated to minimize emissions from this unit. [District Rule 2201] N

11. The permittee shall submit a plan to the District at least four weeks prior to the first firing of this unit, describing the procedures to be followed during the commissioning period. The plan shall include a description of each commissioning activity, the anticipated duration of each activity in hours, and the purpose of the activity. The activities described shall include, but not limited to, the tuning of the combustors, the installation and operation of the SCR systems, the installation, calibration, and testing of the NOx and CO continuous emissions monitors, and any activities requiring the firing of this unit without abatement by the SCR system. [District Rule 2201] N

12. Emission rates from this unit during the commissioning period shall not exceed any of the following limits: NOx (as NO2) 308 lb/hr or 3,200 lb/day; VOC (as methane) 273 lb/hr or 355 lb/day; CO 2527 lb/hr or 10,824 lb/day; PM10 216 lb/day; or SOx (as SO2) 84 lb/day. [District Rule 2201] N

13. During the commissioning period, the permittee shall demonstrate compliance with condition #12 through the use of properly operated and maintained continuous emissions monitors and recorders as specified in this permit. The monitored parameters for this unit shall be recorded at least once every 15 minutes (excluding normal calibration periods or when the monitored source is not in operation). [District Rule 2201] N

14. The continuous monitors specified in this permit shall be installed, calibrated, and operational prior to the first firing of this unit. After first firing, the detection range of the CEMS shall be adjusted as necessary to accurately measure the resulting range of NOx and CO emission concentrations. [District Rule 2201] N

15. Firing of GTE without abatement of emissions by the SCR system shall be minimized to the extent possible. Such operation of this unit without abatement shall be limited to discrete commissioning activities that can only be properly executed without the SCR system catalyst in place. [District Rule 2201] N

16. The total mass emissions of NOx, CO, VOC, PM10, and SOx that are emitted during the commissioning period shall accrue towards the consecutive twelve month emission limits specified in condition #39. [District Rule 2201] N

17. The permittee shall submit to the District information correlating the NOx control system operating parameters to the associated measured NOx output. The information must be sufficient to allow the District to determine compliance with the NOx emission limits of this permit during times that the CEMS is not functioning properly. [District Rule 4703] N

18. GTE and electrical generator lube oil vents shall be equipped with mist eliminators. Visible emissions from lube oil vents shall not exhibit opacity of 5% or greater, except for up to three minutes in any hour. [District Rules 2201 and 4101] N

19. GTE exhaust design shall provide space for additional selective catalytic reduction catalyst if required to meet NOx emission limit. [District Rule 2201] N

20. The GTE shall be equipped with a continuous monitoring system to measure and record fuel consumption. [District Rules 2201 and 4001] N

21. Exhaust duct downstream of the SCR unit shall be equipped with continuously recording emissions monitors (CEMS) for NOx, CO, and O2. All CEMS shall be dedicated to this unit. NOx and O2 CEMS shall meet the requirements of 40 CFR Part 75 and CO CEMS shall meet the requirements of 40 CFR Part 60. CEMS shall be capable of monitoring emissions during normal operating conditions and during startups and shutdowns. If, as determined by District source test staff, the accuracy of CEMS during startup events is not demonstrated, CEMS results during startup and shutdown events shall be replaced with startup emission rates obtained during source testing to determine compliance with emission limits in conditions 36, 38 and 39. [District Rule 2201] N

22. Exhaust duct shall be equipped with a continuously recording emission monitor upstream of the SCR unit for measuring the NOx concentration for the purposes of calculating ammonia slip. Permittee shall check, record, and quantify the calibration drift (CD) at two concentration values at least once daily (approximately 24 hours). The calibration shall be adjusted whenever the daily zero or high-level CD exceeds 5%. If either the zero or high-level CD exceeds 5% for five consecutive daily periods, the analyzer shall be deemed out-of-control. If either the zero or high-level CD exceeds 10% during any CD check, analyzer shall be deemed out-of-control. If the analyzer is out-of-control, the permittee shall take appropriate corrective action and then repeat the CD check. [District Rule 2201] N

23. The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080] N

24. Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080] N

25. The exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NOx, CO, and O2 analyzer during District inspections. The sampling ports shall be located in accordance with the CARB regulation titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Emission Monitoring and Testing. [District Rule 1081] N

26. Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District Rule 2201] N

27. Permittee shall monitor and record exhaust gas temperature at selective catalytic reduction catalyst inlet. [District Rule 2201] N

28. GTE shall be fired exclusively on natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as S) per 100 dry scf of natural gas. [District Rule 2201] N

29. Startup is defined as the period beginning with GTE initial firing until the unit meets the lb/hr and ppmv emission limits in condition 31. Shutdown is defined the period beginning with initiation of GTE shutdown sequence and ending with cessation of firing of the GTE. Startup and shutdown durations shall not exceed one hour per occurrence. [District Rule 2201 and 4001] N

30. Ammonia shall be injected when the selective catalytic reduction system catalyst temperature exceeds the minimum operating temperature recommended by the SCR manufacturer. Permittee shall monitor and record catalyst temperature during periods of startup. [District Rule 2201] N

31. Emission rates from GTE, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) 16.25 lb/hr and 2.5 ppmvd @ 15% O2; VOC 2.95 lb/hr and 1.3 ppmvd @ 15% O2; CO 23.75 lb/hr and 6 ppmvd @ 15% O2 or ammonia 10 ppmvd @15% O2. NOx (as NO2) emission limit is a one-hour average. Ammonia emission limit is a twenty-four hour rolling average. All other emission limits are three-hour rolling averages. [District Rules 2201, 4001, and 4703] N

32. Compliance with NOx emissions limitations specified in condition #31 shall not be required during short-term excursions limited to a cumulative total of 10 hours per rolling 12-month period. Short-term excursions are defined as 15-minute periods designated by the owner/operator (and approved by the APCO) that are the direct result of transient load conditions, not to exceed four consecutive 15-minute periods, when the 15-minute average NOx concentration exceeds 2.5 ppmvd @ 15% O2. The maximum 1-hour average NOx concentration for periods that include short-term excursions shall not exceed 30 ppmvd @ 15% O2. [District Rule 2201] N

33. Examples of transient load conditions include, but are not limited to the following: (1) initiation/shutdown of GTE inlet air cooling and (2) rapid GTE load changes. All emissions during short-term excursions shall accrue towards the hourly, daily, and annual emissions limitations of this permit and shall be included in all calculations of hourly, daily, and annual mass emission rates as required by this permit. [District Rule 2201] N

34. Compliance with NOx, CO and VOC emissions limitations specified in condition #31 shall not be required during excursions for combustor tuning. Combustor tuning excursion is defined as that period following the replacement of a combustor that is required for testing, tuning and calibration as recommended by the manufacturer to insure safe and reliable steady state operation of the GTE. Excursions for combustor tuning shall be limited to one continuous 6 hour period per calendar year. [District Rule 2201] N

35. Emission rates from GTE during combustor tuning shall not exceed any of the following: NOx (as NO2) 300 lb/hr and 600 lb/period; VOC 48 lb/hr and 96 hours/period; and CO 2514 lb/hr and 2514 lb/period. Hourly emissions are on a one-hour average basis. [District Rules 2201] N

36. Emission rates from the GTE shall not exceed either of the following: PM10 9.0 lb/hr and SOx (as SO2) 3.495 lb/hr. Emission limits are three-hour rolling averages. [District Rules 2201 and 4001] N

37. During startup or shutdown GTE exhaust emissions shall not exceed any of the following: NOx (as NO2) 80 lb; VOC 16 lb; or CO 902 lb in any one hour. [California Environmental Quality Act and District Rule 4102] N

38. On any day when a startup or shutdown occurs, emission rates from GTE shall not exceed any of the following: PM10 216 lb/day; SOx (as SO2) 84 lb/day; NOx (as NO2) 450 lb/day; VOC 96.9 lb/day; or CO 2,113 lb/day. [District Rule 2201] N

39. Annual emissions from GTE, calculated on a twelve consecutive month rolling basis, shall not exceed any of the following: PM10 78,840 lb/year ; SOx (as SO2) 30,616 lb/year; NOx (as NO2) 161,480 lb/year; VOC 29,730 lb/year; or CO 471,492 lb/year. [District Rule 2201] N

40. Combined annual emissions of all hazardous air pollutants (HAPs) from GTE, calculated on a twelve consecutive month rolling basis, shall not exceed 6 tons/year. Combined annual emissions of any single HAP from GTE, calculated on a twelve consecutive month rolling basis, shall not exceed 2.5 tons/year. [District Rule 4002] N

41. Each one-hour period shall commence on the hour. Each one-hour period in a three-hour rolling average will commence on the hour. The three-hour average will be compiled from the three most recent one-hour periods. Each one-hour period in a twenty-four-hour average for ammonia slip will commence on the hour. The twenty-four-hour average will be calculated starting and ending at twelve-midnight. [District Rule 2201] N

42. Daily emissions will be compiled for a twenty-four hour period starting and ending at twelve-midnight. Each month in the twelve-consecutive-month rolling average emissions shall commence at the beginning of the first day of the month. The twelve-consecutive-month rolling average emissions to determine compliance with annual emissions limitations shall be compiled from the twelve most recent calendar months. [District Rule 2201] N

43. Prior to initial operation, permittee shall provide emission reduction credits to offset the calendar quarter emissions increases set forth below, at the distance offset ratio specified in Rule 2201 (4/20/05 version) Table 4.2 and the interpollutant offset ratio specified in this permit, PM10 - Q1: 19,440 lb, Q2: 19,656 lb, Q3: 19,872 lb and Q4: 19,872 lb; SOx (as SO2) - Q1: 7,549 lb, Q2: 7,633 lb, Q3: 7,717 lb and Q4: 7,717 lb; NOx (as NO2) - Q1: 39,817 lb, Q2: 40,260 lb, Q3: 40,702 lb, and Q4: 40,702 lb; and VOC - Q1: 7,331 lb, Q2: 7,412 lb, Q3: 7,494 lb and Q4: 7,494 lb. [District Rule 2201] N

44. ERC Certificate Numbers S-1554-2 and S-1543-2 (or certificates split from these certificates) shall be used to supply the required NOx and PM10 offsets, ERC Certificate Number S-444-1 and S-1666-1(or a certificates split from these certificates) shall be used to supply the required VOC offsets and ERC Certificate Number S-1334-5 (or a certificate split from this certificate) shall be used to supply the required SOx, unless a revised offsetting

proposal is received and approved by the District, upon which this Determination of Compliance shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Determination of Compliance. [District Rule 2201] N

45. NOx ERCs may be used to offset PM10 emission increases at a ratio of 2.42 lb NOx : 1 lb PM10 for reductions occurring within 15 miles of this facility, and at 2.72 lb NOx : 1 lb PM10 for reductions occurring greater than 15 miles from this facility [District Rule 2201] N

46. Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O2 = ((a-(bxc/1,000,000)) x 1,000,000 / b) x d, where a = ammonia injection rate(lb/hr)/17(lb/lb. mol), b = dry exhaust gas flow rate (lb/hr)/(29(lb/lb. mol), c = change in measured NOx concentration ppmv at 15% O2 across catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. Alternatively, permittee may utilize a continuous in-stack ammonia monitor, acceptable to the District, to monitor compliance. At least 60 days prior to using a NH3 CEM, the permittee must submit a monitoring plan for District review and approval [District Rule 4102] N

47. Compliance with NOx, CO and VOC short term emission limits (ppmv @ 15% O2 and lb/hr) shall be demonstrated within 90 days of initial operation of GTE and once every twelve months thereafter by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm at full load conditions. [District Rule 2201] N

48. Compliance with PM10 (lb/hr) and ammonia (ppmvd @ 15% O2) emissions rates shall be demonstrated within 90 days of initial operation of GTE and at least once every 12 months thereafter. [District Rule 2201] N

49. Source testing to measure startup NOx, CO, and VOC mass emission rates for this GTE shall be demonstrated upon initial operation and at least every seven years thereafter by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. CEMS shall be operated during startup source testing. District source test staff shall evaluate CEMS results with source test results to assess the accuracy of CEMS during startups events. If, in the judgement of the District source staff, the reliability of CEMS results has not been demonstrated during startup testing for NOx and CO, more frequent source testing to measure startup NOx and CO mass emissions rates may be required. [District Rule 1081] N

50. Initial and annual compliance with the HAPS emissions limit (6 tpy all HAPS or 2.5 tpy any single HAP) shall be by the VOC emissions rate for GTE determined during initial and annual compliance source testing and the correlation between VOC emissions and HAP(S). [District Rule 4002] N

51. Compliance with natural gas sulfur content limit shall be demonstrated within 60 days of initial operation of the GTE and periodically as required by 40 CFR 60 Subpart GG and 40 CFR 75. [District Rules 1081, 2540, and 4001] N

52. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. Official test results and field data collected by source tests required by conditions on this permit shall be submitted to the District within 60 days of testing. [District Rule 1081] N

53. The following test methods shall be used: PM10 EPA method 5 (front half and back half); NOx EPA Method 7E or 20; CO EPA method 10 or 10B; O2 EPA Method 3, 3A, or 20; VOC EPA method 18 or 25; ammonia BAAQMD ST-1B; and fuel gas sulfur content ASTM D3246. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. [District Rules 1081, 4001, and 4703] N

54. The permittee shall maintain hourly records of NOx, CO, and ammonia emission concentrations (ppmv @ 15% O2), and hourly, daily, and twelve month rolling average records of NOx and CO mass emissions rates. Using annual and startup VOC source test results, permittee shall maintain hourly, daily and twelve month rolling average records of VOC mass emission rates. [District Rule 2201] N

55. The permittee shall maintain records of SOx lb/hr, lb/day, and lb/twelve month rolling average emissions. SOx emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations. [District Rule 2201] N

56. Permittee shall maintain the following records for the GTE: occurrence, duration, and type of any startup, shutdown, short term excursion, combustor tuning event, or malfunction; performance testing; emission measurements; total daily and rolling twelve month average hours of operation; hourly quantity of fuel used and gross three hour average operating load. [District Rules 2201 & 4703] N

57. Permittee shall maintain the following records for the continuous emissions monitoring system (CEMS): performance testing, evaluations, calibrations, checks, maintenance, adjustments, and any period during which a CEMS was inoperative. [District Rules 2201 & 4703] N

58. Permittee shall provide notification and record keeping as required under 40 CFR, Part 60, Subpart A, 60.7. [District Rule 4001] N

59. All records required to be maintained by this permit shall be maintained for a period of five years and shall be made readily available for District inspection upon request. [District Rule 2201] N

60. Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3. 3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080] N

61. The permittee shall notify the District of any breakdown condition as soon as reasonably possible, but no later than one hour after its detection, unless the owner or operator demonstrates to the Districts satisfaction that the longer reporting period was necessary. [District Rule 1100] N

62. The District shall be notified in writing within ten days following the correction of any breakdown condition. The breakdown notification shall include a description of the equipment malfunction or failure, the date and cause of the initial failure, the estimated emissions in excess of those allowed, and the methods utilized to restore normal operations. [District Rule 1100] N

63. Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] N

64. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F . [District Rule 1080] N

65. The permittee shall submit a written report to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred . [District Rule 1080] N

66. Permittee shall submit an application to comply with Rule 2540 - Acid Rain Program 24 months before the unit commences operation. [District Rule 2540] N

ATTACHMENT B

GTE Emissions Data

Table A-1
PEF Expansion Project
Emissions and Operating Parameters for Expansion CTG
Rev. July 05

Case	1) Hot Base	2) Hot Low	3) Avg. Base	4) Avg. Low	5) Cold Base	6) Cold Low
Ambient Temp, F	102	102	66	66	35	35
GT Load	100	50	100	50	100	50
GT heat input, MMBtu/hr (HHV)	1642.0	1,067.20	1719.5	1116.7	1791.1	1159.2
Stack flow, lb/hr *(no dilution air)*	3,325,000	2,295,000	3,484,000	2,325,000	3,635,000	2,369,000
Stack flow, lb/hr (w/ dilution air)	*5,133,507*	*4,083,507*	*5,398,809*	*4,239,809*	*5,673,770*	*3,278,938*
Stack flow, acfm *(w/ dilution air)*	2,933,650	2,249,983	3,009,083	2,276,233	3,072,833	2,300,917
Stack temp, F	830	784	798	755	766	723
Stack exhaust, vol %						
O2 (dry)	13.65%	14.24%	13.80%	14.02%	13.86%	13.91%
CO2 (dry)	4.18%	3.85%	4.09%	3.97%	4.06%	4.03%
H2O	9.55%	8.26%	8.42%	7.93%	7.64%	7.59%
Emissions						
NOx, ppmvd @ 15% O2	2.5	2.5	2.5	2.5	2.5	2.5
NOx, lb/hr	14.90	9.68	15.60	10.13	16.25	10.52
NOx, lb/MMBtu	0.0091	0.0091	0.0091	0.0091	0.0091	0.0091
SO2, ppmvd @ 15% O2	0.402	0.402	0.402	0.402	0.402	0.402
SO2, lb/hr	3.33	2.17	3.49	2.27	3.50	2.35
SO2, lb/MMBtu	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020
CO, ppmvd @ 15% O2	6.00	6.00	6.00	6.00	6.00	6.00
CO, lb/hr	21.77	14.15	22.80	14.81	23.75	15.37
CO, lb/MMBtu	0.0133	0.0133	0.0133	0.0133	0.0133	0.0133
VOC, ppmvd @ 15% O2	***1.3***	***1.3***	***1.3***	***1.3***	***1.3***	***1.3***
VOC, lb/hr	***2.70***	***1.76***	***2.83***	***1.84***	***2.95***	***1.91***
VOC, lb/MMBtu	***0.0016***	***0.0016***	***0.0016***	***0.0016***	***0.0016***	***0.0016***
PM10, lb/hr	9.0	9.0	9.0	9.0	9.0	9.0
PM10, lb/MMBtu	0.0055	0.0084	0.0052	0.0081	0.0050	0.0078
PM10, gr/dscf	0.00157	0.00222	0.00147	0.00219	0.00140	0.00215
NH3, ppmvd@15% O2	10.0	10.0	10.0	10.0	10.0	10.0
NH3, lb/hr	22.06	14.34	23.10	15.00	24.06	15.58

added →

Table A-2
PEF Expansion Project
Detailed Calculations for Maximum Hourly, Daily, and Annual Criteria Pollutant Emissions for Expansion CTG
VOC Emission Rates Revised 5/05; Annual NOx Emissions Corrected 6/05

	Base Load			Startup			NOx		SOx (1)		CO		VOC		PM10	
							Base Load	Startup (2)	Base Load	Startup	Base Load	Startup (2)	Base Load	Startup (2)	Base Load	Startup
Equipment	max. hour	hrs/day	hrs/yr	max. hour	hrs/day	hrs/yr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Expansion CTG, baseload	0	22	8460	0	0	0	***16.25***	0.00	3.495	0.00	23.75	0.00	2.95	0.00	9.00	0.00
Expansion CTG, startups	0	0	0	1	2	300	0.00	80.00	0.00	3.495	0.00	902.00	0.00	16.00	0.00	9.00

	NOx			SOx			CO			VOC			PM10		
	Max	Max	Total	Max	Max	Total	Max	Max	Total	Max	Max	Total	Max	Max	Total
Equipment	lb/hr	lb/day	lb/yr	lb/hr	lb/day	lb/yr	lb/hr	lb/day	lb/yr	lb/hr	lb/day	lb/yr	lb/hr	lb/day	lb/yr
Expansion CTG, baseload	0.00	357.51	137,480	0.00	76.89	29,568	0.00	522.41	200,892	0.00	***64.83***	***24,930***	0.00	198.00	76,140
Expansion CTG, startups	80.00	92.49	24,000	3.50	6.99	1,049	902.00	1590.59	270,600	16.00	32.00	4,800	9.00	18.00	2,700
Total	80.00 lb/hr	450.00 lb/day	***161,480*** lb/yr	3.50 lb/hr	84.00 lb/day	30,616 lb/yr	902.00 lb/hr	2113.00 lb/day	471,492 lb/yr	16.00 lb/hr	***96.83*** lb/day	***29,730*** lb/yr	9.00 lb/hr	216.00 lb/day	78,840 lb/yr

Notes:

1. Startup emission rates for the simple cycle turbine are identical to those for the previously permitted combined cycle turbines.
2. Hourly SOx emission rate for the simple cycle turbine is identical to the emission limit for the existing combined cycle turbines.

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ATTACHMENT C

Referenced District BACT Guidance Document - 3.4.7

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 3.4.7*

Last Update: October 1, 2002

Emission Unit: Gas Turbine - ≥ 50 MW , Uniform Load, without Heat Recovery

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
NOx	5.0 ppmvd** @ 15% O_2, based on a three-hour average (high temp SCR, or equal).	1. 2.5 ppmvd** @ 15% O_2, based on a one-hour average (high temperature Selective Catalytic Reduction (SCR), or equal). 2. 3.0 ppmvd** @ 15% O_2, based on a three-hour average (high temp SCR, or equal).	
CO	6.0 ppmvd** @ 15% O_2, based on a three-hour average (Oxidation catalyst, or equal).		
VOC	2.0 ppmvd** @ 15% O_2, based on a three-hour average (Oxidation catalyst, or equal).	1. 0.6 ppmvd** @ 15% O_2, based on a three-hour average (Oxidation catalyst). 2. 1.3 ppmvd** @ 15% O_2, based on a three-hour average (Oxidation catalyst, or equal).	
PM10	Air inlet cooler/filter, lube oil vent coalescer (or equal) and either PUC-regulated natural gas, LPG, or non-PUC-regulated gas with ≤ 0.75 grams S/100 dscf.		
SOx	PUC-regulated natural gas, LPG, or Non-PUC-regulated gas with ≤ 0.75 grams S/100 dscf.		

**** Except during startup and shutdown**

This is a Summary Page for this Class of Source - Permit Specific BACT Determinations on Next Page(s)

ATTACHMENT D

TOP DOWN BACT ANALYSIS

ATTACHMENT E

Health Risk/Ambient Air Quality Analysis

San Joaquin Valley Air Pollution Control District
Risk Management Review

To: Richard Karrs, AQE – Permit Services

From: Glenn Reed, SrAQS – Technical Services

Date: May 31, 2005

Facility Name: Pastoria Energy Facility

Location: Lebec

Application #(s): S-3636-14-0

Project #: S-1050207

A. RMR SUMMARY

RMR Summary			
Categories	**160 MW Gas Turbine (Unit 14-0)**	**Project Totals**	**Facility Totals**
Prioritization Score	NA[1]	NA[1]	>1
Acute Hazard Index	0.03	0.03	0.05
Chronic Hazard Index	0.16	0.16	0.18
Maximum Individual Cancer Risk (10^{-6})	0.8	0.8	4.51
T-BACT Required?	**No**		
Special Permit Conditions?	**No**		

[1]No prioritization score was calculated because previous prioritization scores for the facility exceeded 1.0.

Proposed Permit Conditions

To ensure that human health risks will not exceed District allowable levels; the following permit conditions must be included for:

Unit # 14-0

No special conditions are required.

B. RMR REPORT

I. Project Description

Technical Services received a request on May 31, 2005, to perform an Ambient Air Quality Analysis and a Risk Management Review for a General Electric 7FA gas turbine generator rated at 568 bhp operating in simple cycle mode with selective catalytic reduction (SCR) for control of emissions of oxides of nitrogen.

II. Analysis

Since the previous total facility prioritization score was greater than one, this proposed unit was not prioritized. Technical Services performed a refined health risk assessment. Emissions calculated using Ventura County Emission Factors for Turbines fired with natural gas were input into the HARP model. Ammonia slip emissions from the SCR unit were added to the emissions from the combustion of natural gas in the turbine. ISCST3 was used, with the parameters outlined below and meteorological data for 1963 from Bakersfield to determine the maximum dispersion factor at a comprehensive array of receptors. These dispersion factors were input into the HARP model to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Analysis Parameters Unit 14-0			
Source Type	Point	**Location Type**	Rural
Stack Height (m)	39.93	**Closest Receptor (m)**	NA
Stack Diameter. (m)	6.93	**Type of Receptor**	NA
Stack Exit Velocity (m/s)	38.4	**Max Hours per Year**	8,760
Stack Exit Temp. (°K)	680.78	**Fuel Type**	Natural Gas
Burner Rating (MMBtu/hr)	1,791		

The applicant provided a full range of receptors for modeling. Although none of these were residential or business receptors, they were used for the modeling. Thus, the predicted risks are for the point of maximum impact rather than the maximum exposed individual.

Technical Services also performed modeling for criteria pollutants CO, NOx, SOx and PM_{10}; as well as a RMR. The emission rates used for criteria pollutant modeling were 902 lb/hr CO, 80 lb/hr NOx, 3.5 lb/hr SOx, and 9.0 lb/hr PM_{10}. The engineer supplied the maximum fuel rate for the IC engine used during the analysis.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*
Values are in $\mu g/m^3$

Diesel ICE	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO_x	Pass	X	X	X	Pass
SO_x	Pass	Pass	X	Pass	Pass
PM_{10}	X	X	X	Pass[1]	Pass[1]

*Results were taken from the attached PSD spreadsheet.
[1]The maximum predicted concentration for emissions of these criteria pollutants from the proposed unit are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

III. Conclusion

The acute and chronic indices are below 1.0 and the cancer risk factor associated with the gas-fired turbine is less than 1.0 in a million. **In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).**

To ensure that human health risks will not exceed District allowable levels; the permit conditions listed on page 1 of this report must be included for this proposed unit.

The emissions from the proposed equipment will not cause or contribute significantly to a violation of the State and National AAQS.

These conclusions are based on the data provided by the applicant and the project engineer. Therefore, this analysis is valid only as long as the proposed data and parameters do not change.

Attachments:

A. RMR request from the project engineer
B. Additional information from the applicant/project engineer
C. Summary of highest cancer, chronic, and acute risks (PMI/MEI report from HARP)
D. AAQA spreadsheet

AAQA for Pastoria Energy Facility (S-3636)
All Values are in ug/m^3

	NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
SRCGP1	2.211E+01	1.037E-01	3.326E+02	7.349E+00	1.291E+00	9.617E-01	1.683E-01	2.576E-02	4.329E-01	6.635E-02
Background	1.588E+02	4.017E+01	4.777E+03	3.029E+03	5.062E+01	2.398E+01	1.066E+01	5.330E+00	9.500E+01	4.400E+01
Facility Totals	1.809E+02	4.027E+01	5.109E+03	3.036E+03	5.191E+01	2.494E+01	1.083E+01	5.356E+00	9.543E+01	4.407E+01
AAQS	470	100	23000	10000	655	1300	105	80	50	30
	Pass	**Pass**	**Pass**	**Pass**	**Pass**	**Pass**	**Pass**	**Pass**	**Fail**	**Fail**

EPA's Significatance Level (ug/m^3)

NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
0.0	1.0	2000.0	500.0	0.0	25.0	5.0	1.0	5.0	1.0

AAQA Emission (g/sec)

Device	NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
SRCGP1	1.01E+01	2.36E+00	1.14E+02	6.78E+00	4.41E-01	4.41E-01	4.41E-01	4.40E-01	1.13E+00	1.13E+00

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ATTACHMENT F

PM10/NOx Interpollutant Offset Analysis

Attachment AQ-29

PM10 Interpollutant Offset Ratio Analysis
Pastoria Energy Facility Expansion Project

PM10

	Notes	Units	Estimate	Uncertainty
"Vegetative Burning" Total	1	$\mu g/m^3$	6.31	2.28
Industry Component (30%)	2	$\mu g/m^3$	1.89	
Regional Background (20%)	3	$\mu g/m^3$	0.38	
Industry minus Background		$\mu g/m^3$	1.51	
County Contribution	4	$\mu g/m^3$	0.76	
Organic Carbon PM10 Inventory - Kern County	5	ton/day	7.90	
County Impact		$\mu g/m^3$ per ton	0.10	0.13

Nitrate

Ammonium Nitrate	6	$\mu g/m^3$	14.90	1.30
Regional Background	7	$\mu g/m^3$	1.00	
Ammonium Nitrate minus Background		$\mu g/m^3$	13.90	
County Contribution	8	$\mu g/m^3$	6.95	
NOx Inventory - Kern County	9	ton/day	156.45	
County Impact		$\mu g/m^3$ per ton	0.04	0.05
Tons of NOx to Equal Effect of 1 ton PM10	10		2.16	2.70

1. Per SJVUAPCD and CARB, PM10 emissions from stationary industrial combustion sources are included in the Vegetative Burning category from Chemical Mass Balance modeling performed for the SJVUAPCD 2003 PM10 Attainment Plan (Bakersfield - Golden State monitoring station).
2. Per SJVUAPCD, 30% of this category is attributed to stationary industrial combustion sources.
3. Per SJVUAPCD, regional background is estimated to be 20% of net concentration after previous adjustment to Vegetative Burning category.
4. Contribution from sources within Kern County is 50% of net concentration after previous adjustments to Vegetative Burning category.
5. Organic carbon PM10 inventory for Kern County that contributes to this monitoring location; from SIP inventory with updates and adjustments based on CCOS study.
6. Ammonium nitrate category from Chemical Mass Balance modeling performed for the SJVUAPCD 2003 PM10 Attainment Plan (Bakersfield - Golden State monitoring station).
7. Per SJVUAPCD, regional background of ammonium nitrate is estimated to be 1 $\mu g/m^3$.
8. Contribution from sources within Kern County is 50% of net concentration after previous adjustment to Vegetative Burning category.
9. 1999 NOx inventory for Kern County that contributes to this monitoring location; from SIP inventory with updates and adjustments based on CCOS study.
10. PM10 County Impact divided by Ammonium Nitrate County Impact.

ATTACHMENT G

Compliance Certification

CALPINE

DUBLIN OFFICE
4160 DUBLIN BOULEVARD, SUITE 150
DUBLIN, CALIFORNIA 94568-3139
925.479.6600
925.479.7300 (FAX)

Certification Pastoria Expansion Project

I, Barbara McBride, on behalf of Calpine Corporation, hereby certify under penalty of perjury as follows:

1. I am authorized to make this certification on behalf of Calpine Corporation.
2. This certification is made pursuant to the Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District.
3. To the best of the undersigned's knowledge, all major stationary sources owned or operated by Calpine Corporation in the State of California are either in compliance or on a schedule of compliance with all applicable state and federal emission limitations and standards.

Delta Energy Center
Los Medanos Energy Center
Los Esteros Critical Energy Facility
Metcalf Energy Center
Pastoria Energy Facility
Sutter Power Plant
Gilroy Power Plant
King City Power Plant
Pittsburg Power Plant (at Dow Chemical)
Greenleaf 1
Greenleaf 2
Agnews Power Plant
Watsonville Power Plant
Aidlin Geothermal Power Plant
Bear Canyon Geothermal Power Plant
Sonoma Geothermal Power Plant
West Ford Flat Geothermal Power Plant
McCabe Geothermal Power Plant
Ridgeline Geothermal Power Plant
Fumarole Geothermal Power Plant
Eagle Rock Geothermal Power Plant
Cobb Creek Geothermal Power Plant
Big Geysers Geothermal Power Plant
Sulphur Springs Geothermal Power Plant
Quicksilver Geothermal Power Plant
Lake View Geothermal Power Plant
Socrates Geothermal Power Plant
Calistoga Geothermal Power Plant
Grant Geothermal Power Plant
And supporting Steam Fields
Gilroy Energy Center
King City Energy Center
Lambie Energy Center
Goosehaven Energy Center
Creed energy Center
Wolfskill Energy Center
Yuba City Energy Center
Feather River Energy Center
Riverview Energy Center

Each of the statements herein is made in good faith. Accordingly, it is Calpine Corporation's understanding in submitting this certification that the SJVUAPCD shall take no action against Calpine Corporation or any of its employees based on any statement made in this certification.

Barbara McBride
Director Safety, Health and Environment
Calpine Corporation

Dated: 5/3/05

City of Ripon
Public Works Department
1210 S. Vera Avenue
Ripon, CA 95366
(209) 599-2151
Fax (209) 599-2183

Fax Transmittal Sheet

Date: 8-29-05 From: Norma

To: Air Pollution Control Title:

Fax # (209) 599-2183

Attention: Cynthia Echavarria

We are sending you:

Description:

_Per Your Request _For your Information _Per Our Conversation
_For Your Approval _Take Appropriate Action _Review & Comment
_Please Answer _Review & Return

TOTAL NUMBER OF PAGES 16 (including cover sheet)

Original transmittal will not follow: ___

Original transmittal will follow: ___ via mail ___ other

REMARKS/RESPONSE:

This fax is intended for the use of the individual or entity to which it is addressed, and may contain information that is privileged, confidential and exempt from disclosure under applicable law. If you are not the intended recipient, any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return the original fax to us at the above address via U.S. mail. Thank you.

SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

1990 E. Gettysburg Ave., Fresno, CA 93726

(559) 230 - 6000

WORKSHEET FOR THE ANNUAL EMISSION INVENTORY : 2004

CITY OF RIPON
259 N WILMA
RIPON CA, 95366

FACILITY ID# : **N-4769**

TAD #:

SIC #:
PHONE #: #Error
TOXID:

SITE ADDRESS : 444 DOAK BLVD, RIPON

Is this information considered;

[ ] CONFIDENTIAL
[ ] NOT CONFIDENTIAL

Note: All requests for confidentiality must be supported by a written justification (Title 17, section 91010, California Administrative Code)

WorkSheet for Permit # : N-4769-1-0

B & L SYSTEMS, MODEL BLP 200/75, NATURAL GAS FIRED ANIMAL REMAINS INCINERATOR THAT CONSISTS OF A 0.3 MMBTU/HR PRIMARY BURNER AND A 0.8 MMBTU/HR SECONDARY BURNER (AFTERBURNER).

PROCESS HEATERS - INCLUDING BOILERS, STEAM GENERATORS, ETC.

PROCESS HEATERS

Annual Fuel Data:

Primary Fuel (circle one) NG, Diesel, LPG, Other:_____

Annual Usage: _____

Units (circle one) SCF, BTU, Therms, Gals, Other:_____

Secondary Fuel (circle one) NG, Diesel, LPG, Other:_____

Annual Usage: _____

Units (circle one) SCF, BTU, Therms, Gals, Other:_____

Materials Processed/Handled	Annual Quantity	Units

Describe Control Equipment for This Unit:

_____

Control Efficiency for Each Pollutant:

NOx____% SOx____% CO____% VOC____% PM10____%

Operating Schedule:

For Equipment with Regular Operating Schedules:

Hours/Day:____ Days/Week: 1 Weeks/Year:____

For Equipment that has not operated regularly:

Estimated Annual Operating Hours: 300

Distance to Nearest Residence from Equipment > 1000 (feet)

Distance to Nearest Business from Equipment 200 (feet)

Comments:_____

FACILITY WIDE RELATIVE MONTHLY ACTIVITY

If the facility has the same operating schedule year round, then please check the box next to the Default Monthly Activity. Otherwise provide the relative monthly activity expressed in percentage that the facility operates each month. Note: 100%/12 =8.3%.

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
☐ DEFAULT MONTHLY ACTIVITY	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
MONTHLY RELATIVE ACTIVITY												

Daily Activity

Please indicate with a circles the normal operating schedule:

Hours per day: 1 2 3 4 5 (6) 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Days per week: Sunday Monday Tuesday Wednesday Thursday Friday Saturday

ONE DAY per week

Signature: Ted [illegible] **Date :** 8-25-05

General Information

1. Has the Emission Factor for any Permited Unit changed in the previous year (source test or modified / corrected permit emission factor)? Please List:

Permit Number :	Pollutant :	Emission Factor :	Units :

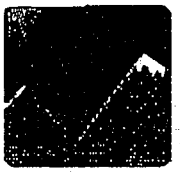
2. Were any malfunctions or breakdowns of process or control equipment experienced which effect emissions ?

☐ Yes Duration of Event(s) :

☒ No

Describe malfunction/breakdown quantity of emission and pollutant emitted :

Questionnaire Answered By, Title	Tod Johnston Public Works Dir
Signature	
Telephone Number	()-(209) 599-2151
Contact Person	Linda Johnston CSO Sup.
Telephone Number	()-(209) 599-2102



SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

1990 E. Gettysburg Ave., Fresno, CA 93726

(559) 230 - 6000

WORKSHEET FOR THE ANNUAL EMISSION INVENTORY : 2004

CITY OF RIPON

259 N WILMA

RIPON CA, 95366

FACILITY ID# : **N-3482**

TAD #:

SIC #:

PHONE #: #Error

TOXID:

SITE ADDRESS : HUGHES LANE (WELL #10), RIPON

Is this information considered;

[ ] CONFIDENTIAL

[ ] NOT CONFIDENTIAL

Note: All requests for confidentiallty must be supported by a written justification (Title 17, section 91010, California Administrative Code)

WorkSheet for Permit # : N-3482-1-0

465 HP CUMMINS MODEL #NTA855-G2 TURBOCHARGED AND AFTERCOOLED DIESEL FIRED IC ENGINE POWERING A 300 KW EMERGENCY GENERATOR.

COMBUSTION EQUIPMENT

Annual Process Data for Fuel Combustion Equipment:

Primary Fuel (circle one or specify) : NG, LPG, (CARB Diesel), Jet Fuel,

Combination (Duel Fuel) (specify)_____,

Alternative fuel (specify)_____,

Additive (specify)_____

Annual Usage: 10

Units (circle one) SCF, BTU, Therms, (Gals), Other: _____

Secondary Fuel (circle one) NG, LPG, CARB Diesel, Jet Fuel,

Combination (Duel Fuel)(specify)_____ _____,

Alternative fuel (specify)_____,

Additive (specify)_____,

Annual Usage: _____

Units (circle one) SCF, BTU, Therms, Gals, Other: _____

Describe Control Equipment for This Unit (Circle applicable):_____

_____

Control Efficiency for Each Pollutant:

NOx_____% **SOx**_____% **CO**_____% **VOC**_____% **PM10**_____%

Operating Schedule:

For Equipment with Regular Operating Schedules:

Hours/Day:_____ **Days/Week:** 1 **Weeks/Year:**_____

For Equipment that has not operated regularly:

Estimated annual operating hours: 10

If seasonal, months of year operated and typical hours per month operated_____

Distance to Nearest Residence from Equipment 50 (feet)

Distance to Nearest Business from Equipment 50 (feet)

Distance to Nearest School Grounds from Equipment > 1000 (feet)

Comments:

FACILITY WIDE RELATIVE MONTHLY ACTIVITY

If the facility has the same operating schedule year round, then please check the box next to the Default Monthly Activity. Otherwise provide the relative monthly activity expressed in percentage that the facility operates each month. Note: 100%/12 =8.3%.

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
☐	DEFAULT MONTHLY ACTIVITY	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
	MONTHLY RELATIVE ACTIVITY												

Daily Activity

Please indicate with a circles the normal operating schedule:

Hours per day: (10Min) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Days per week: Sunday (Monday) Tuesday Wednesday Thursday Friday Saturday

Signature: _____ **Date :** 8-25-05

General Information

1. Has the Emission Factor for any Permited Unit changed in the previous year (source test or modified / corrected permit emission factor)? Please List:

Permit Number :	Pollutant :	Emission Factor :	Units :

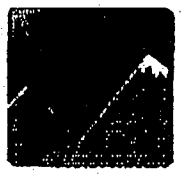
2. Were any malfunctions or breakdowns of process or control equipment experienced which effect emissions ?

☐ Yes Duration of Event(s) :

☒ No

Describe malfunction/breakdown quantity of emission and pollutant emitted :

Questionnaire Answered By, Title	
Signature	
Telephone Number (209) 599-2151	( ) -
Contact Person TED JOHNSTON	PUBLIC WORK DIRECTOR
Telephone Number	( ) -



SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

1990 E. Gettysburg Ave., Fresno, CA 93726

(559) 230 - 6000

WORKSHEET FOR THE ANNUAL EMISSION INVENTORY : 2004

CITY OF RIPON

259 N WILMA AVE

RIPON CA, 95366

FACILITY ID# : **N-3673**

TAD #:

SIC #:

PHONE #: #Error

TOXID:

SITE ADDRESS : JACK TONE & FRONTAGE ROAD, RIPON

Is this information considered;

[ ] CONFIDENTIAL

[ ] NOT CONFIDENTIAL

Note: All requests for confidentiality must be supported by a written justification (Title 17, section 91010, California Administrative Code)

WorkSheet for Permit # : N-3673-1-0

ONE (1) 96 BHP CATERPILLAR MODEL #CDO60 TURBOCHARGED DIESEL FIRED IC ENGINE USED TO POWER A 60 KW EMERGENCY GENERATOR.

COMBUSTION EQUIPMENT

Annual Process Data for Fuel Combustion Equipment:

Primary Fuel (circle one or specify) : NG, LPG, (CARB Diesel), Jet Fuel,

Combination (Duel Fuel) (specify)_____,

Alternative fuel (specify)_____,

Additive (specify)_____.

Annual Usage: 10

Units (circle one) SCF, BTU, Therms, (Gals,) Other: _____

Secondary Fuel (circle one) NG, LPG, CARB Diesel, Jet Fuel,

Combination (Duel Fuel)(specify)_____,

Alternative fuel (specify)_____,

Additive (specify)_____.

Annual Usage: 10

Units (circle one) SCF, BTU, Therms, Gals, Other: _____

Describe Control Equipment for This Unit (Circle applicable):_____

_____

Control Efficiency for Each Pollutant:

NOx____% **SOx**____% **CO**____% **VOC**____% **PM10**____%

Operating Schedule:

For Equipment with Regular Operating Schedules:

Hours/Day:_____ **Days/Week:** 1 **Weeks/Year:**_____

For Equipment that has not operated regularly:

Estimated annual operating hours: 10

If seasonal, months of year operated and typical hours per month operated_____

Distance to Nearest Residence from Equipment 21050 (feet)
Distance to Nearest Business from Equipment 300 (feet)
Distance to Nearest School Grounds from Equipment 21000 (feet)
Comments:

FACILITY WIDE RELATIVE MONTHLY ACTIVITY

If the facility has the same operating schedule year round, then please check the box next to the Default Monthly Activity. Otherwise provide the relative monthly activity expressed in percentage that the facility operates each month. Note: 100%/12 =8.3%.

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
☐ DEFAULT MONTHLY ACTIVITY	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
MONTHLY RELATIVE ACTIVITY												

Daily Activity

Please indicate with a circles the normal operating schedule:

Hours per ~~day:~~ (10 min) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Days per week: Sunday Monday Tuesday (Wednesday) Thursday Friday Saturday

Signature: [signature] **Date :** 5-25-05

General Information

1. Has the Emission Factor for any Permited Unit changed in the previous year (source test or modified / corrected permit emission factor)? Please List:

Permit Number :	Pollutant :	Emission Factor :	Units :

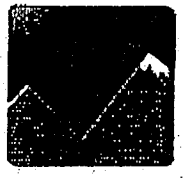
2. Were any malfunctions or breakdowns of process or control equipment experienced which effect emissions ?

☐ Yes Duration of Event(s) :

☒ No

Describe malfunction/breakdown quantity of emission and pollutant emitted :

Questionnaire Answered By, Title	TED JOHNSTON
Signature	
Telephone Number	()- 209 599-2151
Contact Person	TED JOHNSTON
Telephone Number	()- 209 599-2151



SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

1990 E. Gettysburg Ave., Fresno, CA 93726

(559) 230 - 6000

WORKSHEET FOR THE ANNUAL EMISSION INVENTORY : 2004

CITY OF RIPON

259 N WILMA AVE

RIPON CA, 95366

FACILITY ID# : **N-2942**

TAD #:

SIC #:

PHONE #: #Error

TOXID:

SITE ADDRESS : END OF FRONTAGE (WELL 9), RIPON

Is this information considered;

[ ] CONFIDENTIAL

[ ] NOT CONFIDENTIAL

Note: All requests for confidentiality must be supported by a written justification (Title 17, section 91010, California Administrative Code)

WorkSheet for Permit # : N-2942-1-0

272 HP CATERPILLAR MODEL 3306 1A DIESEL-FIRED EMERGENCY IC ENGINE POWERING AN ELECTRICAL GENERATOR

COMBUSTION EQUIPMENT

Annual Process Data for Fuel Combustion Equipment:

Primary Fuel (circle one or specify) : NG, LPG, (CARB Diesel,) Jet Fuel,

Combination (Duel Fuel) (specify)_____,

Alternative fuel (specify)_____,

Additive (specify)_____.

Annual Usage: _____

Units (circle one) SCF, BTU, Therms, Gals, Other: _____

Secondary Fuel (circle one) NG, LPG, CARB Diesel, Jet Fuel,

Combination (Duel Fuel)(specify)_____,

Alternative fuel (specify)_____,

Additive (specify)_____.

Annual Usage: 10

Units (circle one) SCF, BTU, Therms, (Gals,) Other: _____

Describe Control Equipment for This Unit (Circle applicable):_____

_____

Control Efficiency for Each Pollutant:

NOx_____% **SOx**_____% **CO**_____% **VOC**_____% **PM10**_____%

Operating Schedule:

For Equipment with Regular Operating Schedules:

Hours/Day:_____ **Days/Week:** 1 **Weeks/Year:**_____

For Equipment that has not operated regularly:

Estimated annual operating hours: 10

If seasonal, months of year operated and typical hours per month operated_____

_____

Distance to Nearest Residence from Equipment 50 (feet)
Distance to Nearest Business from Equipment >1000 (feet)
Distance to Nearest School Grounds from Equipment >1000 (feet)
Comments:

FACILITY WIDE RELATIVE MONTHLY ACTIVITY

If the facility has the same operating schedule year round, then please check the box next to the Default Monthly Activity. Otherwise provide the relative monthly activity expressed in percentage that the facility operates each month. Note: 100%/12 =8.3%.

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
☐ DEFAULT MONTHLY ACTIVITY	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
MONTHLY RELATIVE ACTIVITY												

Daily Activity

Please indicate with a circles the normal operating schedule:

10 MIN

Hours per day: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Days per week: Sunday Monday Tuesday Wednesday Thursday Friday Saturday

Signature: [signature] **Date :** 8-25-05

General Information

1. Has the Emission Factor for any Permited Unit changed in the previous year (source test or modified / corrected permit emission factor)? Please List:

Permit Number :	Pollutant :	Emission Factor :	Units :

2. Were any malfunctions or breakdowns of process or control equipment experienced which effect emissions ?

☐ Yes Duration of Event(s) :

☒ No

Describe malfunction/breakdown quantity of emission and pollutant emitted :

Questionnaire Answered By, Title	TED JOHNSTON
Signature	
Telephone Number	()- (209) 599-2151
Contact Person	SAME.
Telephone Number	()-