



# San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT



JUL 22 2010

Mr. William Fall  
Chevron U.S.A. Inc.  
P.O. Box 1392  
Bakersfield, CA 93302

**Re: Notice of Preliminary Decision - ATC / Certificate of Conformity  
Facility # S-1129  
Project # S-1102475**

Dear Mr. Fall:

Enclosed for your review and comment is the District's analysis of an application for Authority to Construct for Chevron U.S.A. Inc. McKittrick Oilfield, Heavy Oil Western Source, Bakersfield, CA. A 1,250 bhp diesel-fired emergency standby Blackstart electrical generator will be installed.

After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the Authority to Construct will be issued to the facility with a Certificate of Conformity. Prior to operating with modifications authorized by the Authority to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

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

If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,

David Warner  
Director of Permit Services

Enclosures

c: Sudeshna Bakshi, Permit Services

Seyed Sadredin  
Executive Director/Air Pollution Control Officer

Northern Region  
4800 Enterprise Way  
Modesto, CA 95356-8718  
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)  
1990 E. Gettysburg Avenue  
Fresno, CA 93726-0244  
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region  
34946 Flyover Court  
Bakersfield, CA 93308-9725  
Tel: 661-392-5500 FAX: 661-392-5585



JUL 22 2010

Mike Tollstrup, Chief  
Project Assessment Branch  
Air Resources Board  
P O Box 2815  
Sacramento, CA 95812-2815

Re: **Notice of Preliminary Decision - ATC / Certificate of Conformity**  
**Facility # S-1129**  
**Project # S-1102475**

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of an application for Authority to Construct for Chevron U.S.A. Inc. McKittrick Oilfield, Heavy Oil Western Source, Bakersfield, CA. A 1,250 bhp diesel-fired emergency standby Blackstart electrical generator will be installed.

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

Thank you for your cooperation in this matter. If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

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# San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT



JUL 22 2010

Gerardo C. Rios, Chief  
Permits Office  
Air Division  
U.S. EPA - Region IX  
75 Hawthorne St.  
San Francisco, CA 94105

**Re: Notice of Preliminary Decision - ATC / Certificate of Conformity**  
**Facility # S-1129**  
**Project # S-1102475**

Dear Mr. Rios:

Enclosed for your review is the District's engineering evaluation of an application for Authority to Construct for Chevron U.S.A. Inc. McKittrick Oilfield, Heavy Oil Western Source, Bakersfield, CA, which has been issued a Title V permit. Chevron U.S.A. Inc. is requesting that a Certificate of Conformity, with the procedural requirements of 40 CFR Part 70, be issued with this project. A 1,250 bhp diesel-fired emergency standby Blackstart electrical generator will be installed.

Enclosed is the engineering evaluation of this application and proposed Authority to Construct # S-1129-870-0 with Certificate of Conformity. After demonstrating compliance with the Authority to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 45-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,

  
David Warner  
Director of Permit Services

Enclosures

c: Sudeshna Bakshi, Permit Services

Seyed Sadredin  
Executive Director/Air Pollution Control Officer

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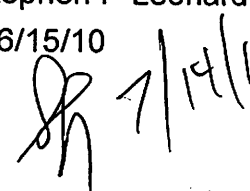
Bakersfield Californian

**NOTICE OF PRELIMINARY DECISION  
FOR THE PROPOSED ISSUANCE OF  
AUTHORITY TO CONSTRUCT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Air Pollution Control District solicits public comment on the proposed issuance of Authority To Construct to Chevron U.S.A. Inc. for its Heavy Oil Facility McKittrick Oilfield, Heavy Oil Western Source, Bakersfield, California. A 1,250 bhp diesel-fired emergency standby Blackstart electrical generator will be installed..

The analysis of the regulatory basis for these proposed actions, Project # S-1102475, is available for public inspection at [http://www.valleyair.org/notices/public\\_notices\\_idx.htm](http://www.valleyair.org/notices/public_notices_idx.htm) and the District office at the address below. Written comments on the proposed initial permit must be submitted within 30 days of the publication date of this notice to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 1990 E. GETTYSBURG AVE, FRESNO, CA 93726-0244.**

**San Joaquin Valley Air Pollution Control District  
Authority to Construct  
Application Review  
Diesel-Fired Emergency Standby IC Engine**

Facility Name:	Chevron U.S.A. Inc. (CUSA)	Date:	06/14/10
Mailing Address:	P.O. Box 1392 Bakersfield, CA 93302	Engineer:	Sudeshna Bakshi
Contact Person:	Mr. John Gruber	Lead Engineer:	Stephen P Leonard
Telephone:	(661) 654-7144		06/15/10
Application #:	S-1129-870-0		
Project #:	S-1102475		
Complete:	05/19/10		

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### **I. Proposal**

Chevron U.S.A. Inc. (CUSA) is proposing to install a 1,250 bhp diesel-fired emergency standby internal combustion (IC) engine powering an electrical generator.

The proposed generator set will replace the three existing 140 bhp diesel-fired cogen crank/starter engines (PTOs S-1129,-692-4, -693-4, and -694-4) which were permitted as limited-use units, since they are used to start the existing turbine engines under both emergency and non-emergency circumstances.

Chevron received their Title V Permit on June 30, 2002. The addition of this proposed generator to the facility can be classified as a Title V minor modification pursuant to Rule 2520, Section 3.20, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. Chevron must apply to administratively amend their Title V Operating Permit to include the requirements of the ATC issued with this project.

### **II. Applicable Rules**

Rule 2201 New and Modified Stationary Source Review Rule (9/21/06)  
Rule 2520 Federally Mandated Operating Permits (6/21/01)  
Rule 4001 New Source Performance Standards (4/14/99)  
Rule 4002 National Emission Standards for Hazardous Air Pollutants (5/20/04)  
Rule 4101 Visible Emissions (2/17/05)  
Rule 4102 Nuisance (12/17/92)

Rule 4201 Particulate Matter Concentration (12/17/92)  
Rule 4701 Stationary Internal Combustion Engines – Phase 1 (8/21/03)  
Rule 4702 Stationary Internal Combustion Engines – Phase 2 (1/18/07)  
Rule 4801 Sulfur Compounds (12/17/92)  
CH&SC 41700 Health Risk Assessment  
CH&SC 42301.6 School Notice  
Title 17 CCR, Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines  
California Environmental Quality Act (CEQA)  
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)  
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

### **III. Project Location**

The equipment will be located at the McKittrick Oil Field, Heavy Oil Western Source within the SW/4 of Section 18, Township 30S, Range 22E.

The District has verified that the equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

### **IV. Process Description**

The emergency standby engine powers an electrical generator. Other than emergency standby operation, the engine may be operated up to 50 hours per year for maintenance and testing purposes.

### **V. Equipment Listing**

**S-1129-870-0:** 1,250 BHP CATERPILLAR MODEL C27 ATAAC TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

### **VI. Emission Control Technology Evaluation**

The applicant has proposed to install a Tier 2 certified diesel-fired IC engine that is fired on very low-sulfur diesel fuel (0.0015% by weight sulfur maximum).

The proposed engine(s) meet the latest Tier Certification requirements; therefore, the engine(s) meets the latest ARB/EPA emissions standards for diesel particulate matter, hydrocarbons, nitrogen oxides, and carbon monoxide (see Appendix C for a copy of the emissions data sheet and/or the ARB/EPA executive order).

The use of very low-sulfur diesel fuel (0.0015% by weight sulfur maximum) reduces SO<sub>x</sub> emissions by over 99% from standard diesel fuel.

## VII. General Calculations

### A. Assumptions

Emergency operating schedule:	24 hours/day
Non-emergency operating schedule:	50 hours/year
Density of diesel fuel:	7.1 lb/gal
EPA F-factor (adjusted to 60 °F):	9,051 dscf/MMBtu
Fuel heating value:	137,000 Btu/gal
BHP to Btu/hr conversion:	2,542.5 Btu/bhp-hr
Thermal efficiency of engine:	commonly ≈ 35%
PM <sub>10</sub> fraction of diesel exhaust:	0.96 (CARB, 1988)

The engine has certified NO<sub>x</sub> + VOC emissions of 4.1g/bhp-hr. It will be assumed the NO<sub>x</sub> + VOC emission factor is split 95% NO<sub>x</sub> and 5% VOC (per the District's Carl Moyer program).

### B. Emission Factors

Emission Factors		
Pollutant	Emission Factor (g/bhp-hr)	Source
NO <sub>x</sub>	3.90	Engine Manufacturer
SO <sub>x</sub>	0.0051	Mass Balance Equation Below
PM <sub>10</sub>	0.067	Engine Manufacturer
CO	0.89	Engine Manufacturer
VOC	0.20	Engine Manufacturer

$$\frac{0.000015 \text{ lb-S}}{\text{lb-fuel}} \times \frac{7.1 \text{ lb-fuel}}{\text{gallon}} \times \frac{2 \text{ lb-SO}_2}{1 \text{ lb-S}} \times \frac{1 \text{ gal}}{137,000 \text{ Btu}} \times \frac{1 \text{ bhp input}}{0.35 \text{ bhp out}} \times \frac{2,542.5 \text{ Btu}}{\text{bhp-hr}} \times \frac{453.6 \text{ g}}{\text{lb}} = 0.0051 \frac{\text{g-SO}_x}{\text{bhp-hr}}$$

### C. Calculations

#### 1. Pre-Project Emissions (PE1)

Since this is a new emissions unit, PE1 = 0.

#### 2. Post-Project PE (PE2)

The daily and annual PE are calculated as follows:

Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Annual Hours of Operation (hrs/yr)	Daily PE2 (lb/day)	Annual PE2 (lb/yr)
NO <sub>x</sub>	3.90	1250	24	50	257.7	537
SO <sub>x</sub>	0.0051	1250	24	50	0.3	1
PM <sub>10</sub>	0.07	1250	24	50	4.4	9
CO	0.89	1250	24	50	58.8	123
VOC	0.20	1250	24	50	13.2	28

### 3. 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 ATCs or PTOs at the Stationary Source and the quantity of Emission Reduction Credits (ERCs) 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.

It has been established earlier that facility emissions are already above the Offset and Major Source Thresholds for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC emissions; therefore, SSPE1 calculations are not necessary.

### 4. 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 Potential to Emit (PE) from all units with valid ATCs or PTOs, except for emissions units proposed to be shut down as part of the Stationary Project, at the Stationary Source and the quantity of Emission Reduction Credits (ERCs) 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.

As discussed in Section C.3 above, since facility emissions are already above the Offset and Major Source Thresholds for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC emissions, SSPE2 calculations are not necessary.

### 5. 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. However, Section 3.24.2 states, "for the purposes of determining major source status, the SSPE2 shall not include 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."

This source is an existing Major Source for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC emissions and will remain a Major Source for these air contaminants.

**6. Baseline Emissions (BE)**

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 3.22

Since this is a new emissions unit, BE = PE1 = 0 for all criteria pollutants.

**7. Major Modification**

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

As discussed in Section VII.C.5 earlier, the facility is an existing Major Source for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC emissions. However, the new emissions unit (S-1129-870-0) independently will not emit any criteria pollutants exceeding Major Modifications thresholds as shown in the table below.

Major Modifications Thresholds for Existing Major Sources			
Pollutant	Annual emissions for unit S-1129-870-0 (lb/yr)	Threshold (lb/yr)	Major Modification?
NO <sub>x</sub>	537	50,000	No
SO <sub>x</sub>	1	80,000	No
PM <sub>10</sub>	9	30,000	No
VOC	28	50,000	No

So, as determined from the table above, this project cannot cause a significant increase in emissions, and the project does not constitute a Major Modification.

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

As shown in the previous section, this project does not constitute a Major Modification. Therefore, in accordance with District Rule 2201, Section 3.17, this project does not constitute a Federal Major Modification and no further discussion is required.

### **9. Quarterly Net Emissions Change (QNEC)**

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

## **VIII. Compliance**

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

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

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

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following\*:

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

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

As discussed in Section I, the facility is proposing to install a new emergency standby IC engine. Additionally, as determined in Section VII.C.7, this project does not result in a Major Modification. Therefore, BACT can only be triggered if the daily emissions exceed 2.0 lb/day for any pollutant.

The daily emissions from the new engine are compared to the BACT threshold levels in the following table:

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions for unit -1-0 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO <sub>x</sub>	257.7	> 2.0	n/a	Yes
SO <sub>x</sub>	0.3	> 2.0	n/a	No
PM <sub>10</sub>	4.4	> 2.0	n/a	Yes
CO	58.8	> 2.0 and SSPE2 ≥ 200,000 lb/yr	n/a	Yes
VOC	13.2	> 2.0	n/a	Yes

As shown above, BACT will be triggered for NO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC emissions from the engine for this project.

## 2. BACT Guideline

BACT Guideline 3.1.1, which appears in Appendix B of this report, covers diesel-fired emergency IC engines.

## 3. Top Down BACT Analysis

Per District Policy APR 1305, Section IX, "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 for source categories or classes covered in the BACT Clearinghouse, relevant information under each of the following steps may be simply cited from the Clearinghouse without further analysis."

Pursuant to the attached Top-Down BACT Analysis, which appears in Appendix B of this report, BACT is satisfied with:

- NO<sub>x</sub>: Latest EPA Tier Certification level for applicable horsepower range
- VOC: Latest EPA Tier Certification level for applicable horsepower range
- PM<sub>10</sub>: 0.15 g/hp-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent. (ATCM)
- CO: Latest EPA Tier Certification level for applicable horsepower range

The following condition(s) will be listed on the ATC to ensure compliance with the SO<sub>x</sub> and PM<sub>10</sub> BACT emissions limit(s):

- Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, 17 CCR 93115, 40 CFR Part 60 Subpart IIII]

- Emissions from this IC engine shall not exceed 0.067 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 17 CCR 93115, 40 CFR Part 60 Subpart IIII]

## **B. Offsets**

Since emergency IC engines are exempt from the offset requirements of Rule 2201, per Section 4.6.2, offsets are not required for this engine, and no offset calculations are required.

## **C. Public Notification**

### **1. Applicability**

Public noticing is required for:

- a. Any new Major Source, which is a new facility that is also a Major Source

As shown in Section VII.C.6, this facility is not a new Major Source.

- b. Major Modifications

As shown in Section VII.C.7, this project is not a Major Modification.

- c. Any new emissions unit with a Potential to Emit greater than 100 lb/day for any one pollutant

As calculated in Section VII.C.2, daily emissions for NO<sub>x</sub> are greater than 100 lb/day.

- d. Any project which results in the offset thresholds being surpassed

As shown in Section VII.C.4, an offset threshold will not be surpassed.

- e. Any project with an Stationary Source project Increase in Potential (SSIPE) Emissions greater than 20,000 lb/year for any pollutant.

For this project, the proposed engine is the only emissions source that will generate an increase in Potential to Emit. Since the proposed engine emissions are well below 20,000 lb/year for all pollutants (See Section VII.C.2), the SSIPE for this project will be below the public notice threshold.

### **2. Public Notice Action**

As demonstrated above, this project will require public noticing. Therefore, public notice documents will be submitted to the California Air Resources Board

(CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC(s) for this equipment.

#### **D. Daily Emissions Limits**

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.15 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.15.1 and 3.15.2, 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. Therefore, the following conditions will be listed on the ATC to ensure compliance:

- Emissions from this IC engine shall not exceed any of the following limits: 3.9 g-NOx/bhp-hr, 0.89 g-CO/bhp-hr, or 0.2 g-VOC/bhp-hr. [District Rule 2201, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]
- Emissions from this IC engine shall not exceed 0.067 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]
- Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]

#### **E. Compliance Assurance**

##### **1. Source Testing**

Pursuant to District Policy APR 1705, source testing is not required for emergency standby IC engines to demonstrate compliance with Rule 2201.

##### **2. Monitoring**

No monitoring is required to demonstrate compliance with Rule 2201.

##### **3. Recordkeeping**

Recordkeeping requirements, in accordance with District Rule 4702, will be discussed in Section VIII, *District Rule 4702*, of this evaluation.

##### **4. Reporting**

No reporting is required to ensure compliance with Rule 2201.

**F. Ambient Air Quality Analysis (AAQA)**

Section 4.14.1 of this Rule requires that an ambient air quality analysis (AAQA) be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The Technical Services Division of the SJVAPCD conducted the required analysis.

The proposed location is in an attainment area for NO<sub>x</sub>, CO, and SO<sub>x</sub>. As shown by the AAQA summary sheet in Appendix D, the proposed equipment will not cause a violation of an air quality standard for NO<sub>x</sub>, CO, or SO<sub>x</sub>.

The proposed location is in a non-attainment area for PM<sub>10</sub>. As shown in the AAQA summary sheet in Appendix D, the calculated contribution of PM<sub>10</sub> from the proposed equipment will not exceed EPA significance levels.

Therefore, this project is not expected to cause or make worse a violation of an air quality standard.

**Rule 2520 Federally Mandated Operating Permits**

- This facility is subject to this Rule, and has received their Title V Operating Permit. The proposed modification is a Minor Modification to the Title V Permit pursuant to Section 3.20 of this rule. As discussed previously in the proposal section, the facility has applied for a Certificate of Conformity (COC). Therefore, a COC with procedural requirements of 40 CFR part 70 will be issued in conjunction with the ATC.

**Rule 4001 New Source Performance Standards (NSPS)**

**40 CFR 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines**

The following table demonstrates how the proposed engine(s) will comply with the requirements of 40 CFR Part 60 Subpart IIII.

<b>40 CFR 60 Subpart IIII Requirements for New Emergency IC Engines Powering Generators (2007 and Later Model Year)</b>	<b>Proposed Method of Compliance with 40 CFR 60 Subpart IIII Requirements</b>
Engine(s) must meet the appropriate Subpart IIII emission standards for new engines, based on the model year, size, and number of liters per cylinder.	The applicant has proposed the use of engine(s) that are certified to the latest EPA Tier Certification level for the applicable horsepower range, guaranteeing compliance with the emission standards of Subpart IIII.
Engine(s) must be fired on 500 ppm sulfur content fuel or less, and fuel with a minimum centane index of 40 or a maximum aromatic content of 35 percent by volume. Starting in	The applicant has proposed the use of CARB certified diesel fuel, which meets all of the fuel requirements listed in Subpart IIII. A permit condition enforcing this requirement was included

October 1, 2010, the maximum allowable sulfur fuel content will be lowered to 15 ppm.	earlier in this evaluation.
The operator/owner must install a non-resettable hour meter prior to startup of the engine(s).	<p>The applicant has proposed to install a non-resettable hour meter. The following condition will be included on the permit:</p> <ul style="list-style-type: none"> <li>• This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702, 17 CCR 93115, and 40 CFR 60 Subpart IIII]</li> </ul>
Emergency engine(s) may be operated for the purpose of maintenance and testing up to 100 hours per year. There is no limit on emergency use.	The Air Toxic Control Measure for Stationary Compression Ignition Engines (Stationary ATCM) limits this engine maintenance and testing to 50 hours/year. Thus, compliance is expected.
The owner/operator must operate and maintain the engine(s) and any installed control devices according to the manufacturers written instructions.	<p>The following condition will be included on the permit:</p> <ul style="list-style-type: none"> <li>• This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702 and 40 CFR 60 Subpart IIII]</li> </ul>

**Rule 4002 National Emission Standards for Hazardous Air Pollutants**

**40 CFR 63 Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Emissions (RICE)**

Emergency engines are subject to this subpart if they are operated at a major or area source of Hazardous Air Pollutant (HAP) emissions. A major source of HAP emissions is a facility that has the potential to emit any single HAP at a rate of 10 tons/year or greater or any combinations of HAPs at a rate of 25 tons/year or greater. An area source of HAPs is a facility is not a major source of HAPs. The proposed engine(s) are new stationary RICE located at an area source of HAP emissions; therefore, these engines are subject to this Subpart.

40 CFR 63 Subpart ZZZZ requires the following engines to comply with 40 CFR 60 Subpart IIII:

1. New emergency engines located at area sources of HAPs
2. Emergency engines rated less than or equal to 500 bhp and located at major sources of HAPs

The proposed engine(s) will be in compliance with 40 CFR 60 Subpart IIII.

Additionally, 40 CFR 63 Subpart ZZZZ requires engines rated greater 500 bhp and located at major sources of HAPs to meet the notification requirements of §63.6645(h); however, that section only applies if an initial performance test is required. Since an initial performance test is not required for emergency engines, the notification requirement is not applicable.

The proposed engines are expected to be in compliance with 40 CFR 63 Subpart ZZZZ.

**Rule 4101 Visible Emissions**

Rule 4101 states that 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. Therefore, the following condition will be listed on the ATC to ensure compliance:

- {15} 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]

**Rule 4102 Nuisance**

Rule 4102 states that no air contaminant shall be released into the atmosphere which causes a public nuisance. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, the following condition will be listed on the ATC to ensure compliance:

- {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

**California Health & Safety Code 41700 (Health Risk Assessment)**

District Policy APR 1905 - Risk Management Policy for Permitting New and Modified Sources (dated 3/2/01) specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite. Therefore, a risk management review (RMR) was performed for this project. The RMR results are summarized in the following table, and can be seen in detail in Appendix D.

RMR Results				
Unit	Acute Hazard Index	Chronic Hazard Index	Cancer Risk	T-BACT Required?
S-1129-870-0	N/A	N/A	< 1.0 in a million	No



The following conditions will be listed on the ATC to ensure compliance with the RMR:

- {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
- Emissions from this IC engine shall not exceed 0.067 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 17 CCR 93115, 40 CFR Part 60 Subpart IIII]
- Operation of this engine shall not exceed 50 hours per calendar year. [District Rule 4702 and 17 CCR 93115]

**Rule 4201 Particulate Matter Concentration**

Rule 4201 limits particulate matter emissions from any single source operation to 0.1 g/dscf, which, as calculated below, is equivalent to a PM<sub>10</sub> emission factor of 0.4 g-PM<sub>10</sub>/bhp-hr.

$$0.1 \frac{\text{grain-PM}}{\text{dscf}} \times \frac{\text{g}}{15.43 \text{ grain}} \times \frac{1 \text{ Btu}_{in}}{0.35 \text{ Btu}_{out}} \times \frac{9,051 \text{ dscf}}{10^6 \text{ Btu}} \times \frac{2,542.5 \text{ Btu}}{1 \text{ bhp-hr}} \times \frac{0.96 \text{ g-PM}_{10}}{1 \text{ g-PM}} = 0.4 \frac{\text{g-PM}_{10}}{\text{bhp-hr}}$$

The new engine has a PM<sub>10</sub> emission factor less than 0.4 g/bhp-hr. Therefore, compliance is expected and the following condition will be listed on the ATC:

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

**Rule 4701 Internal Combustion Engines – Phase 1**

Pursuant to Section 7.5.2.3 of District Rule 4702, as of June 1, 2006 District Rule 4701 is no longer applicable to diesel-fired emergency standby or emergency IC engines. Therefore, the proposed emergency internal combustion engine(s) will comply with the requirements of District Rule 4702 and no further discussion is required.

**Rule 4702 Internal Combustion Engines – Phase 2**

The following table demonstrates how the proposed engine(s) will comply with the requirements of District Rule 4702.

District Rule 4702 Requirements Emergency Standby IC Engines	Proposed Method of Compliance with District Rule 4702 Requirements
Operation of emergency standby engines is limited to 100 hours or less per calendar year for non-emergency purposes, verified through the use of a	The Air Toxic Control Measure for Stationary Compression Ignition Engines (Stationary ATCM) limits this engine maintenance and testing to 50 hours/year. Thus, compliance is expected.

<p>non-resettable elapsed operating time meter.</p>	
<p>Emergency standby engines cannot be used to reduce the demand for electrical power when normal electrical power line service has not failed, or to produce power for the electrical distribution system, or in conjunction with a voluntary utility demand reduction program or interruptible power contract.</p>	<p>The following conditions will be included on the permit:</p> <ul style="list-style-type: none"> <li>• {3807} An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702]</li> <li>• {3808} This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702]</li> </ul>
<p>The owner/operator must operate and maintain the engine(s) and any installed control devices according to the manufacturers written instructions.</p>	<p>A permit condition enforcing this requirement was shown earlier in the evaluation.</p>
<p>The owner/operator must monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier.</p>	<p>The following condition will be included on the permit:</p> <ul style="list-style-type: none"> <li>• {3478} During periods of operation for maintenance, testing, and required regulatory purposes, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]</li> </ul>
<p>Records of the total hours of operation of the emergency standby engine, type of fuel used, purpose for operating the engine, all hours of non-emergency and emergency operation, and support documentation must be maintained. All records shall be retained for a period of at least five years, shall be readily available, and be made available to the APCO upon request.</p>	<p>The following conditions will be included on the permit:</p> <ul style="list-style-type: none"> <li>• {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written</li> </ul>

	<p>record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115]</p> <ul style="list-style-type: none"> <li>• The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]</li> <li>• {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]</li> </ul>
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**Rule 4801 Sulfur Compounds**

Rule 4801 requires that sulfur compound emissions (as SO<sub>2</sub>) shall not exceed 0.2% by volume. Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

$$\text{Volume SO}_2 = (n \times R \times T) \div P$$

n = moles SO<sub>2</sub>

T (standard temperature) = 60 °F or 520 °R

$$R \text{ (universal gas constant)} = \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot \text{°R}}$$

$$\frac{0.000015 \text{ lb-S}}{\text{lb-fuel}} \times \frac{7.1 \text{ lb}}{\text{gal}} \times \frac{64 \text{ lb-SO}_2}{32 \text{ lb-S}} \times \frac{1 \text{ MMBtu}}{9,051 \text{ scf}} \times \frac{1 \text{ gal}}{0.137 \text{ MMBtu}} \times \frac{\text{lb-mol}}{64 \text{ lb-SO}_2} \times \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb-mol} \cdot \text{°R}} \times \frac{520 \text{ °R}}{14.7 \text{ psi}} \times 1,000,000 = 1.0 \text{ ppmv}$$

Since 1.0 ppmv is ≤ 2,000 ppmv, this engine is expected to comply with Rule 4801. Therefore, the following condition will be listed on the ATC to ensure compliance:

- Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII]

**California Health & Safety Code 42301.6 (School Notice)**

The District has verified that 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.

**Title 17 California Code of Regulations (CCR), Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines**

The following table demonstrates how the proposed engine(s) will comply with the requirements of Title 17 CCR Section 93115.

<b>Title 17 CCR Section 93115 Requirements for New Emergency IC Engines Powering Electrical Generators</b>	<b>Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements</b>
Emergency engine(s) must be fired on CARB diesel fuel, or an approved alternative diesel fuel.	The applicant has proposed the use of CARB certified diesel fuel. The proposed permit condition, requiring the use of CARB certified diesel fuel, was included earlier in this evaluation.
The engine(s) must emit diesel PM at a rate less than or equal to 0.15 g/bhp-hr or must meet the diesel PM standard, as specified in the Off-road compression ignition standards for off-road engines with the same maximum rated power (Title 13 CCR, Section 2423).	The applicant has proposed the use of engine(s) that are certified to the latest EPA Tier Certification level for the applicable horsepower range, guaranteeing compliance with the emission standards of Subpart IIII. Additionally, the proposed diesel PM emissions rate is less than or equal to 0.15 g/bhp-hr.
The engine may not be operated more than 50 hours per year for maintenance and testing purposes.	The following condition will be included on the permit: <ul style="list-style-type: none"> <li>• This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 50 hours per calendar year. [District Rule 4702, 17 CCR 93115 and 40 CFR Part 60 Subpart IIII]</li> </ul>
New stationary emergency standby diesel-fueled CI engines (> 50 bhp) must meet the standards for off-road engines of the same model year and maximum rated power as specified in the Off-Road Compression Ignition Engine Standards (title 13, CCR, section 2423).	The applicant has proposed the use of engine(s) that are certified to the latest EPA Tier Certification level for the applicable horsepower range.
Engines, with a PM10 emissions rate greater than 0.01 g/bhp-hr and located at schools, may not be operated for maintenance and testing whenever there is a school sponsored activity on the grounds. Additionally, engines located within 500 feet of school grounds may not be operated for maintenance and testing between 7:30 AM and 3:30 PM	The District has verified that this engine is not located within 500' of a school.
An owner or operator shall maintain monthly records of the following:	Permit conditions enforcing these requirements were shown earlier in the evaluation.

emergency use hours of operation; maintenance and testing hours of operation; hours of operation for emission testing; initial start-up testing hours; hours of operation for all other uses; and the type of fuel used. All records shall be retained for a minimum of 36 months.	
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**California Environmental Quality Act (CEQA)**

The California Environmental Quality Act (CEQA) requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The San Joaquin Valley Unified Air Pollution Control District (District) adopted its *Environmental Review Guidelines* (ERG) in 2001.

The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.
- Identify the ways that environmental damage can be avoided or significantly reduced.
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Consistent with California Environmental Quality Act (CEQA) and CEQA Guidelines requirements, the San Joaquin Valley Air Pollution Control District (District) has adopted procedures and guidelines for implementing CEQA. The District's Environmental Review Guidelines (ERG) establishes procedures for avoiding unnecessary delay during the District's permitting process while ensuring that significant environmental impacts are thoroughly and consistently addressed. The ERG includes policies and procedures to be followed when processing permits for projects that are exempt under CEQA.

The State Legislature granted a number of exemptions from CEQA, including projects that require only ministerial approval. Based upon analysis of its own laws and consideration of CEQA provisions, the District has identified a limited number of District permitting activities considered to be ministerial approvals. As set forth in §4.2.1 of the ERG, projects permitted consistent with the District's *Guidelines for Expedited*

*Application Review* (GEAR) are standard application reviews in which little or no discretion is used in issuing Authority to Construct (ATC) documents.

For the proposed project, the District performed an Engineering Evaluation (this document) and determined that the project qualifies for processing under the procedures set forth in the District's Permit Services Procedures Manual in the Guidelines for Expedited Application Review (GEAR). Thus, as discussed above, this issuance of such ATC(s) is a ministerial approval for the District and is not subject to CEQA provisions.

On December 17, 2009, the District's Governing Board adopted the first comprehensive regional policy and guidance on addressing and mitigating GHG emission impacts caused by industrial, commercial, and residential development in the San Joaquin Valley. The adopted District policy – *Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency* applies to projects for which the District has discretionary approval authority over the project and serves as the lead agency for CEQA purposes. The policy relies on the use of performance based standards, otherwise known as Best Performance Standards (BPS) to assess significance of project specific greenhouse gas emissions on global climate change during the environmental review process, as required by CEQA.

Use of BPS is a method of streamlining the CEQA process of determining significance and is not a required emission reduction measure. However, consistent with the District's objective to achieve the GHG emission reduction targets established pursuant to AB 32, BPS will be incorporated into the District's GEAR application review process. In the interim, projects meeting the existing GEAR requirements will continue to be processed as ministerial approvals.

## IX. Recommendation

Pending a successful NSR Public Noticing period, issue Authority to Construct S-1129-870-0 subject to the permit conditions on the attached draft Authority to Construct in Appendix A.

## X. Billing Information

Billing Schedule			
Permit Number	Fee Schedule	Fee Description	Fee Amount
S-1129-870-0	3020-10-F	1,250 bhp IC engine	\$749.00

## Appendices

- A. Draft ATC
- B. BACT Guideline and BACT Analysis
- C. Emissions Data

- D. HRA Summary and AAQA
- E. QNEC Calculations
- F. Compliance Certification Form

Appendix A  
Draft ATC



San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

PERMIT NO: S-1129-870-0

LEGAL OWNER OR OPERATOR: CHEVRON U S A INC  
MAILING ADDRESS: PO BOX 1392  
BAKERSFIELD, CA 93302

LOCATION: HEAVY OIL WESTERN  
CA

EQUIPMENT DESCRIPTION:  
1250 HP CATERPILLAR MODEL C27 ATAAC DIESEL-FIRED IC ENGINE POWERING AN EMERGENCY STANDBY  
BLACK START ELECTRICAL GENERATOR

**CONDITIONS**

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
4. 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] Federally Enforceable Through Title V Permit
5. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
6. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director APCO

**DRAFT**

DAVID WARNER, Director of Permit Services  
S-1129-870-0 : Jul 15 2010 7:55AM - BAKSHIS : Joint Inspection NOT Required

7. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative [District Rule 4702, 17 CCR 93115, and 40 CFR 60 Subpart IIII] Federally Enforceable Through Title V Permit .
8. Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used [District Rules 2201 and 4801, 17 CCR 93115, 40 CFR Part 60 Subpart IIII] Federally Enforceable Through Title V Permit
9. Emissions from this IC engine shall not exceed any of the following limits: 3.90 g-NOx/bhp-hr, 0.89 g-CO/bhp-hr, or 0.20 g-VOC/bhp-hr [District Rule 2201, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII] Federally Enforceable Through Title V Permit
10. Emissions from this IC engine shall not exceed 0.067 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure [District Rules 2201 and 4102, 17 CCR 93115, and 40 CFR Part 60 Subpart IIII] Federally Enforceable Through Title V Permit
11. This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702 and 40 CFR 60 Subpart IIII] Federally Enforceable Through Title V Permit
12. During periods of operation for maintenance, testing, and required regulatory purposes, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702] Federally Enforceable Through Title V Permit
13. An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702] Federally Enforceable Through Title V Permit
14. This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702] Federally Enforceable Through Title V Permit
15. The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702] Federally Enforceable Through Title V Permit
16. This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 50 hours per calendar year [District Rule 4702, 17 CCR 93115 and 40 CFR Part 60 Subpart IIII] Federally Enforceable Through Title V Permit
17. The permittee shall maintain monthly records of the type of fuel purchased [District Rule 4702 and 17 CCR 93115] Federally Enforceable Through Title V Permit
18. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115] Federally Enforceable Through Title V Permit

DRAFT

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Appendix B  
BACT Guideline and BACT Analysis

# San Joaquin Valley Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 3.1.1**  
**Last Update: 7/10/2009**  
**Emergency Diesel IC Engine**

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
CO	Latest EPA Tier Certification level for applicable horsepower range		
NOX	Latest EPA Tier Certification level for applicable horsepower range		
PM10	0.15 g/hp-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent. (ATCM)		
SOX	Very low sulfur diesel fuel (15 ppmw sulfur or less)		
VOC	Latest EPA Tier Certification level for applicable horsepower range		

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

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## Top Down BACT Analysis for the Emergency IC Engine

### 1. BACT Analysis for NO<sub>x</sub>, CO, VOC, and PM<sub>10</sub> Emissions:

#### a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 3.1.1 identifies achieved in practice BACT for emissions from emergency diesel IC engines as follows:

Pollutant	Achieved in Practice
CO, NO <sub>x</sub> , VOC	Latest EPA Tier Certification level for applicable horsepower range
PM <sub>10</sub>	0.15 g/hp-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent. (ATCM)

No technologically feasible alternatives or control alternatives identified as alternate basic equipment for this class and category of source are listed.

#### b. Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options to eliminate from Step 1.

#### c. Step 3 - Rank remaining options by control effectiveness

No ranking needs to be done because only one control option is listed in Step 1.

#### d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the only control option listed for each pollutant. Therefore, a cost effectiveness analysis is not required.

#### e. Step 5 - Select BACT

BACT for CO, NO<sub>x</sub>, VOC emissions from this emergency standby diesel IC engine is the latest EPA Tier Certification level for the applicable horsepower range. The applicant has proposed to install a Tier 2 certified 1,250 bhp emergency standby diesel IC engine, which is the latest Tier Certification for an engine this size as shown in the attached Tier Certification table at the end of this Appendix.

BACT for PM<sub>10</sub> is 0.15 g/hp-hr, or the latest EPA Tier Certification level for the applicable horsepower range, whichever is more stringent. The applicant is proposing an engine that meets this requirement.

**Title 13 CCR 2423**  
**(December 2005)**  
**Tier Certification & Exhaust Emission Standards**  
(grams per brake horsepower-hour)

Power Rating (hp)	Tier	Model Year	NO <sub>x</sub>	HC	NMHC + NO <sub>x</sub>	CO	PM
50 ≤ hp < 75	1	1998 – 2003	6.9	-	-	3.7	-
	2	2004 - 2007	-		5.6		0.3
	3	2008 - 2011			3.5		
	4*	2008 – 2012 (Interim)			3.5		
75 ≤ hp < 100	1	1998 – 2003	6.9	-	-	3.7	-
	2	2004 – 2007	-		5.6		0.3
	3	2008 – 2011			3.5		
100 ≤ hp < 175	1	1997 – 2002	6.9	-	-	3.7	-
	2	2003 – 2006	-		4.9		0.22
	3	2007 – 2011			3.0		
175 ≤ hp < 300	1	1996 – 2002	6.9	1.0	-	8.5	0.4
	2	2003 – 2005	-	-	4.9	2.6	0.15
	3	2006 - 2010			3.0		
300 ≤ hp < 600	1	1996 – 2000	6.9	1.0	-	8.5	0.4
	2	2001 – 2005	-	-	4.8	2.6	0.15
	3	2006 – 2010			3.0		
600 ≤ hp ≤ 750	1	1996 – 2001	6.9	1.0	-	8.5	0.4
	2	2002 – 2005	-	-	4.8	2.6	0.15
	3	2006 – 2010			3.0		
> 750	1	2000 – 2005	6.9	1.0	-	8.5	0.4
	2	2006 – 2010	-	-	4.8	2.6	0.15

\* Manufacturers may optionally certify engine families to the interim Tier 4 for this power category through 2012.

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Appendix C  
Emissions Data Sheet

 <b>AIR RESOURCES BOARD</b>	<b>CATERPILLAR INC.</b>	<b>EXECUTIVE ORDER U-R-001-0381</b> New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-02-003;

**IT IS ORDERED AND RESOLVED:** That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2010	ACPXL27.0ESX	27.0	Diesel	8000
<b>SPECIAL FEATURES &amp; EMISSION CONTROL SYSTEMS</b>			<b>TYPICAL EQUIPMENT APPLICATION</b>	
Direct Diesel Injection, Turbocharger, Charge Air Cooler, Engine Control Module			Generator and Industrial Equipment	

The engine models and codes are attached.

The following are the exhaust certification standards (STD), or family emission limit(s) (FEL) as applicable, and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
KW > 560	Tier 2	STD	N/A	N/A	6.4	3.5	0.20	20	15	50
		FEL	N/A	N/A	N/A	N/A	0.18	N/A	N/A	N/A
		CERT	--	--	5.5	1.2	0.09	15	1	24

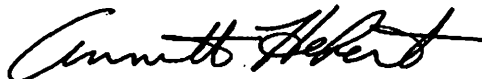
**BE IT FURTHER RESOLVED:** That the family emission limit(s) (FEL) is an emission level declared by the manufacturer for use in any averaging, banking and trading program and in lieu of an emission standard for certification. It serves as the applicable emission standard for determining compliance of any engine within this engine family under 13 CCR Sections 2423 and 2427.

**BE IT FURTHER RESOLVED:** That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

**This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.**

Executed at El Monte, California on this 23 day of October 2009.



Annette Hebert, Chief  
 Mobile Source Operations Division



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Appendix D  
HRA Summary and AAQA

## San Joaquin Valley Air Pollution Control District Risk Management Review

To: Sudeshna Bakshi - Permit Services  
 From: Trevor Joy, AQS - Permit Services  
 Date: July 7, 2010  
 Facility Name: Chevron USA  
 Location: McKittrick Oilfield  
 Application #(s): S-1129-870-0  
 Project #: 1102475

### A. RMR SUMMARY

Categories	Diesel ICE (Unit 870-0)	Project Totals	Facility Totals <sup>3</sup>
Prioritization Score	N/A <sup>1</sup>	N/A <sup>1</sup>	>1.0
Acute Hazard Index	N/A <sup>2</sup>	N/A <sup>2</sup>	0.78
Chronic Hazard Index	N/A <sup>2</sup>	N/A <sup>2</sup>	0.12
Maximum Individual Cancer Risk (10 <sup>6</sup> )	0.03	0.03	7.5
T-BACT Required?	No		
Special Permit Conditions?	Yes		

- 1 Prioritization for this unit was not conducted since it has been determined that all diesel-fired IC engines will result in a prioritization score greater than 1.0.
- 2 Acute and Chronic Hazard Indices were not calculated since there is not risk factor or the risk factor is so low that it has been determined to be insignificant for this type of unit.
- 3 Facilities S-1128, S-1129, S-1141 and S-2592 (And deleted facility S-1549 are all the same facility, and therefore their risk scores will be combined.

### Proposed Permit Conditions

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

#### Unit # 870-0

1. The PM10 emissions rate shall not exceed 0.07 g/bhp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201]
2. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
3. Operation of this engine shall not exceed 50 hours per calendar year. [District Rule 4702 and 17 CCR 93115]

**B. RMR REPORT**

**I. Project Description**

Technical Services received a request on June 14, 2010, to perform an Ambient Air Quality Analysis and a Risk Management Review for a proposed New Emergency Diesel-Fired IC Engine powering an electrical generator.

**II. Analysis**

Technical Services performed a screening level health risk assessment using the District developed DICE database.

The following parameters were used for the review:

<b>Analysis Parameters Unit 870-0</b>			
<b>Source Type</b>	Point	<b>Location Type</b>	Rural
<b>BHP</b>	1,250	<b>PM<sub>10</sub> g/hp-hr</b>	0.0671
<b>Closest Receptor (m)</b>	365	<b>Quad</b>	4
<b>Max Hours per Year</b>	50	<b>Type of Receptor</b>	Business

Technical Services also performed modeling for criteria pollutants CO, NO<sub>x</sub>, SO<sub>x</sub> and PM<sub>10</sub>; as well as a RMR. The emission rates used for criteria pollutant modeling were 2.45 lb/hr CO, 10.74 lb/hr NO<sub>x</sub>, 0.01 lb/hr SO<sub>x</sub>, and 0.18 lb/hr PM<sub>10</sub>. 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\***

<b>Diesel ICE</b>	<b>1 Hour</b>	<b>3 Hours</b>	<b>8 Hours</b>	<b>24 Hours</b>	<b>Annual</b>
CO	Pass	X	Pass	X	X
NO <sub>x</sub>	Pass	X	X	X	Pass
SO <sub>x</sub>	Pass	Pass	X	Pass	Pass
PM <sub>10</sub>	X	X	X	Pass	Pass

\*Results were taken from the attached PSD spreadsheet.

<sup>1</sup>The project was compared to the EPA established 1-hour NO<sub>x</sub> standard that went into effect April 12, 2010.

<sup>2</sup>The criteria pollutants 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 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.

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

**Attachments:**

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. DICE summary
- D. AAQA summary

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Appendix E  
QNEC Calculations

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### Quarterly Net Emissions Change (QNEC)

The Quarterly Net Emissions Change is used to complete the emission profile screen for the District's PAS database. The QNEC shall be calculated as follows:

QNEC = PE2 - PE1, where:

- QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr
- PE2 = Post-Project Potential to Emit for each emissions unit, lb/qtr
- PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr

Since this is a new unit, PE1 = 0 for all pollutants. Thus, QNEC = PE2 (lb/qtr).

Using the PE2 (lb/yr) values calculated in Section VII.C.2, Quarterly PE2 is calculated as follows:

$$PE2_{\text{quarterly}} = PE2 \text{ (lb/yr)} \div 4 \text{ quarters/year} = \text{QNEC}$$

QNEC		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NO <sub>x</sub>	537	134.3
SO <sub>x</sub>	1	0.3
PM <sub>10</sub>	9	2.3
CO	123	30.8
VOC	28	7.0

**Appendix F**  
**Compliance Certification Form**

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MAY 14 2010

SJVAPCD  
Southern Region

# San Joaquin Valley Unified Air Pollution Control District

## TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

### I. TYPE OF PERMIT ACTION (Check appropriate box)

- SIGNIFICANT PERMIT MODIFICATION                       ADMINISTRATIVE  
 MINOR PERMIT MODIFICATION                                       AMENDMENT

COMPANY NAME: <b>Chevron U.S.A. Inc. (CUSA)</b>	FACILITY ID: <b>S-1129</b>
1. Type of Organization: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility	
2. Owner's Name: <b>Chevron U.S.A. Inc. (CUSA)</b>	
3. Agent to the Owner: <b>N/A</b>	

### II. COMPLIANCE CERTIFICATION (Read each statement carefully and initial all circles for confirmation):

- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).
- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.
- Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.
- Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

I declare, under penalty of perjury under the laws of the state of California, that the forgoing is correct and true:

William Fall

Signature of Responsible Official

May 14, 2010

Date

William Fall

Name of Responsible Official (please print)

SJVBU HES Manager

Title of Responsible Official (please print)