San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

MAY 23 2013

Mr. Raymond Rodriguez
Occidental of Elk Hills
10800 Stockdale Highway
Bakersfield, CA 93311

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)**
**District Facility #** S-382
**Project #** 1131243

Dear Mr. Rodriguez:

Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. You requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. Occidental of Elk Hills is proposing to install a 755 bhp diesel-fired emergency standby internal combustion engine powering an electrical generator.

After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authority to Construct with a Certificate of Conformity. Please submit your comments within the 30-day public comment period, as specified in the enclosed public notice. Prior to operating with modifications authorized by the 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.

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

cc: Mike Tollstrup, CARB (w/enclosure) via email
cc: Gerardo C. Rios, EPA (w/enclosure) via email

**Seyed Sadredin**
Executive Director/Air Pollution Control Officer

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www.valleyair.org www.healthyairliving.com

Newspaper notice for publication in Bakersfield Californian and for posting on valleyair.org

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**NOTICE OF PRELIMINARY DECISION**
**FOR THE ISSUANCE OF AUTHORITY TO CONSTRUCT AND**
**THE PROPOSED SIGNIFICANT MODIFICATION OF FEDERALLY**
**MANDATED OPERATING PERMIT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Air Pollution Control District solicits public comment on the proposed significant modification of Occidental of Elk Hills at the 11G office in the SE/4 of Section 11, Township 30S, Range 23E, California. Occidental of Elk Hills is proposing to install a 755 bhp diesel-fired emergency standby internal combustion engine powering an electrical generator.

The District's analysis of the legal and factual basis for this proposed action, project #1131243, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and at any District office. There are minor emission increases associated with this proposed action. This will be the public's only opportunity to comment on the specific conditions of the modification. If requested, the District will hold a public hearing regarding issuance of this modification. For additional information, please contact the District at (661) 392-5500. Written comments on the proposed initial permit must be submitted by June 27, 2013 to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 34946 FLYOVER COURT, BAKERSFIELD, CA 93308.**

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

Facility Name: Occidental of Elk Hills
Mailing Address: 10800 Stockdale Highway
Bakersfield, CA 93311
Contact Person: Raymond Rodriguez
Telephone: 661-412-5263
Application #(s): S-382-846-0
Project #: 1131243
Deemed Complete: 4/26/13

Date: 5/6/13
Engineer: David Torii
Lead Engineer: ~~Kris Rickards~~ ABSWR AQE

MAY 0 9 2013

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### I. Proposal

Occidental of Elk Hills (OEHI) is proposing to install a 755 bhp (intermittent) diesel-fired emergency standby internal combustion (IC) engine powering an electrical generator.

OEHI received their Title V Permit on 5/31/01. This modification can be classified as a Title V minor modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. OEHI must apply to administratively amend their Title V permit.

### II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (4/21/11)
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 (8/18/11)
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 11G office building, within the SE/4 of Section 11, Township 30S, Range 23E in OEHI's Light Oil Western stationary source. 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 20 hours per year for maintenance and testing purposes.

## V. Equipment Listing

S-382-846-0: 755 BHP (INTERMITTENT) CUMMINS MODEL QSX15-G9 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 meet the latest Tier Certification requirements for emergency standby internal combustion (IC) engines in the horse power range (see Appendix B 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 $SO_X$ emissions by over 99% from standard diesel fuel.

## VII. General Calculations

### A. Assumptions

| | |
|---|---|
| Emergency operating schedule: | 24 hours/day |
| Non-emergency operating schedule: | 20 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 |
| 9.96 kg CO2e/gallon-diesel fuel | |
| Fuel Consumption: | 35.9 gal/hr |
| BHP to Btu/hr conversion: | 2,542.5 Btu/bhp-hr |
| BHP to kw conversion: | 1.3407 hp/kw |
| Thermal efficiency of engine: | commonly ≈ 35% |
| $PM_{10}$ fraction of diesel exhaust: | 0.96 (CARB, 1988) |

The engine has certified $NO_X$ + VOC emissions of 6.3 g/bhp-hr. It will be assumed the NOx + VOC emission factor is split 95% NOx and 5% VOC (per the District's Carl Moyer program).

## B. Emission Factors

For the new diesel-fired IC engine, the emissions factors for $NO_X$, CO, VOC, and $PM_{10}$ are provided by the applicant and are guaranteed by the engine manufacturer. The $SO_X$ emission factor is calculated using the sulfur content in the diesel fuel (0.0015% sulfur).

| Diesel-fired IC Engine Emission Factors | | | |
|---|---|---|---|
| | g/kw-hr | g/hp·hr | Source |
| $NO_X$ + VOC | 6.3 | 4.7 | CARB Executive Order |
| $NO_X$ | 6.0 | 4.5 | CARB Executive Order |
| *$SO_X$ | | 0.0051 | Mass Balance Equation Below |
| $PM_{10}$ | 0.12 | 0.09 | CARB Executive Order |
| CO | 0.5 | 0.37 | CARB Executive Order |
| VOC | 0.3 | 0.22 | CARB Executive Order |
| CO2e | 9.96 kg-CO2e/gallon | | CARB |

$$\frac{0.000015\ lb \cdot S}{lb \cdot fuel} \times \frac{7.1\ lb \cdot fuel}{gallon} \times \frac{2\ lb \cdot SO_2}{1\ lb \cdot S} \times \frac{1\ gal}{137{,}000\ Btu} \times \frac{1\ hp\ input}{0.35\ hp\ out} \times \frac{2{,}542.5\ Btu}{hp \cdot hr} \times \frac{453.6\ g}{lb} = 0.0051 \frac{g \cdot SO_x}{hp \cdot hr}$$

## C. Calculations

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

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

### 2. Post Project Potential to Emit (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) |
|---|---|---|---|---|---|---|
| $NO_X$ | 4.50 | 755 | 24 | 20 | **179.8** | **150** |
| $SO_X$ | 0.0051 | 755 | 24 | 20 | **0.2** | **0** |
| $PM_{10}$ | 0.09 | 755 | 24 | 20 | **3.6** | **3** |
| CO | 0.37 | 755 | 24 | 20 | **14.8** | **12** |
| VOC | 0.22 | 755 | 24 | 20 | **8.8** | **7** |

CO2e

(35.9 gal/hr)( 9.96 kg CO2e/gallon)(20 hr/yr)(lb/0.4536 kg)(ton/2000 lb) = 7.9 ton-CO2e/yr

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

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

Facility emissions are already above the Offset and Major Source Thresholds for all pollutants; therefore, SSPE1 calculations are not necessary.

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

Pursuant to District Rule 2201, the SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.

Facility emissions are already above the Offset and Major Source Thresholds for all pollutants; therefore, SSPE2 calculations are not necessary.

**5. Major Source Determination**

**Rule 2201 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 all pollutants and will remain so. No change in other pollutants are proposed or expected as a result of this project.

**Rule 2410 Major Source Determination:**

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). Therefore the following PSD Major Source thresholds are applicable.

| PSD Major Source Determination (tons/year) | | | | | | | |
|---|---|---|---|---|---|---|---|
| | NO2 | VOC | SO2 | CO | PM | PM10 | CO2e |
| Estimated Facility PE before Project Increase | XX | XX | XX | XX | XXX | XX | >100,000 |
| PSD Major Source Thresholds | 250 | 250 | 250 | 250 | 250 | 250 | 100,000 |
| PSD Major Source ? (Y/N) | | | | | | | y |

As shown above, the facility is an existing major source for PSD for at least one pollutant. Therefore the facility is an existing major source for PSD.

**6. Baseline Emissions (BE)**

The BE calculation (in lbs/year) is performed pollutant-by-pollutant for each unit within the project to determine the amount of offsets required.

Pursuant to District Rule 2201, BE = PE1 for:

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

otherwise,

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

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

**7. SB 288 Major Modification**

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

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

| SB 288 Major Modification Thresholds | | | |
|---|---|---|---|
| Pollutant | Project PE2 (lb/year) | Threshold (lb/year) | SB 288 Major Modification Calculation Required? |
| $NO_x$ | 150 | 50,000 | No |
| $SO_x$ | 0 | 80,000 | No |
| $PM_{10}$ | 3 | 30,000 | No |
| VOC | 7 | 50,000 | No |

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

**8. Federal Major Modification**

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

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

**Step 1**

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

The project's combined total emission increases compared to the Federal Major Modification Thresholds in the following table.

| Federal Major Modification Thresholds for Emission Increases | | | |
|---|---|---|---|
| Pollutant | Total Emissions Increases (lb/yr) | Thresholds (lb/yr) | Federal Major Modification? |
| $NO_x$* | 150 | 0 | Yes |
| VOC* | 7 | 0 | Yes |
| $PM_{10}$ | 3 | 30,000 | No |
| $PM_{2.5}$ | 3 | 20,000 | No |
| $SO_x$ | 0 | 80,000 | No |

*If there is any emission increases in $NO_x$ or VOC, this project is a Federal Major Modification and no further analysis is required.

Since there is an increase in $NO_x$ and VOC emissions, this project constitutes a Federal Major Modification, and no further analysis is required.

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

Rule 2410 applies to pollutants for which the District is in attainment or for unclasssified, pollutants. The pollutants addressed in the PSD applicability determination are listed as follows:

- NO2 (as a primary pollutant)
- SO2 (as a primary pollutant)
- CO
- PM
- PM10
- Greenhouse gases (GHG): CO2, N2O, CH4, HFCs, PFCs, and SF6

The first step of this PSD evaluation consists of determining whether the facility is an existing PSD Major Source or not (See Section VII.C.5 of this document).

In the case the facility is an existing PSD Major Source, the second step of the PSD evaluation is to determine if the project results in a PSD significant increase.

In the case the facility is NOT an existing PSD Major Source but is an existing source, the second step of the PSD evaluation is to determine if the project, by itself, would be a PSD major source.

In the case the facility is new source, the second step of the PSD evaluation is to determine if this new facility will become a new PSD major Source as a result of the project and if so, to determine which pollutant will result in a PSD significant increase.

**I. Project Location Relative to Class 1 Area**

As demonstrated in the "PSD Major Source Determination" Section above, the facility was determined to be a existing major source for PSD. Because the project is not located within 10 km of a Class 1 area – modeling of the emission increase is not required to determine if the project is subject to the requirements of Rule 2410.

**II. Significance of Project Emission Increase Determination**

**a. Potential to Emit of attainment/unclassified pollutant for New or Modified Emission Units vs PSD Significant Emission Increase Thresholds**

As a screening tool, the potential to emit from all new and modified units is compared to the PSD significant emission increase thresholds, and if total potential to emit from all new and modified units is below this threshold, no futher analysis will be needed.

| PSD Significant Emission Increase Determination: Potential to Emit (tons/year) | | | | | | |
|---|---|---|---|---|---|---|
| | NO2 | SO2 | CO | PM | PM10 | CO2e |
| Total PE from New and Modified Units | 0.08 | 0 | 0.01 | 0.002 | 0.002 | 7.9 |
| PSD Significant Emission Increase Thresholds | 40 | 40 | 100 | 25 | 15 | 75,000 |
| PSD Significant Emission Increase? | n | n | n | n | n | n |

As demonstrated above, because the project has a total potential to emit from all new and modified emission units below the PSD significant emission increase thresholds, this project is not subject to the requirements of Rule 2410 due to a significant emission increase and no further discussion is required.

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

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

## 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. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions*:

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

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

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

As seen in Section VII.C.2 above, the applicant is proposing to install a new diesel-fired IC engine with a PE greater than 2 lb/day for $NO_X$, $PM_{10}$, CO, and VOC. BACT is triggered for $NO_X$, $PM_{10}$, CO and VOC since the PEs are greater than 2 lbs/day.

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

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

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

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

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

As discussed in Sections VII.C.7 and VII.C.8 above, this project does constitute a Federal Major Modification for $NO_X$ and VOC emissions. Therefore BACT is triggered for $NO_X$ and VOC for all emissions units in the project for which there is an emission increase.

**2. BACT Guideline**

BACT Guideline 3.1.1, which appears in Appendix C 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 C of this report, BACT is satisfied with:

| | |
|---|---|
| $NO_X$: | Latest EPA Tier Certification level for applicable horsepower range |
| VOC: | Latest EPA Tier Certification level for applicable horsepower range |
| $PM_{10}$: | 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 $PM_{10}$ BACT emissions limit(s):

- Emissions from this IC engine shall not exceed 0.09 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. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
c. Any project which results in the offset thresholds being surpassed, and/or
d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

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

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

As demonstrated in Sections VII.C.7 and VII.C.8, this project is a Federal Major Modification. Therefore, public noticing for Federal Major Modification purposes is required.

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

The PE2 for this new unit is compared to the daily PE Public Notice thresholds in the following table:

| PE > 100 lb/day Public Notice Thresholds | | | |
|---|---|---|---|
| Pollutant | PE2 (lb/day) | Public Notice Threshold | Public Notice Triggered? |
| $NO_X$ | 149.8 | 100 lb/day | Yes |
| $SO_X$ | 0.2 | 100 lb/day | No |
| $PM_{10}$ | 3.0 | 100 lb/day | No |
| CO | 12.3 | 100 lb/day | No |
| VOC | 7.3 | 100 lb/day | No |

Therefore, public noticing for PE > 100 lb/day purposes is required.

**c. Offset Threshold**

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

| Offset Thresholds | | | | |
|---|---|---|---|---|
| Pollutant | SSPE1 (lb/year) | SSPE2 (lb/year) | Offset Threshold | Public Notice Required? |
| $NO_X$ | >20,000 | >20,000 | 20,000 lb/year | No |
| $SO_X$ | >54,750 | >54,750 | 54,750 lb/year | No |
| $PM_{10}$ | >29,200 | >29,200 | 29,200 lb/year | No |
| CO | >200,000 | >200,000 | 200,000 lb/year | No |
| VOC | >20,000 | >20,000 | 20,000 lb/year | No |

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

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

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

| SSIPE Public Notice Thresholds | | | |
|---|---|---|---|
| Pollutant | SSIPE (lb/year) | SSIPE Public Notice Threshold | Public Notice Required? |
| $NO_x$ | 150 | 20,000 lb/year | No |
| $SO_x$ | 0 | 20,000 lb/year | No |
| $PM_{10}$ | 3 | 20,000 lb/year | No |
| CO | 12 | 20,000 lb/year | No |
| VOC | 7 | 20,000 lb/year | No |

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

### 2. Public Notice Action

As discussed above, public noticing is required for this project for $NO_X$ emissions in excess of 100 lb/day and triggering a Federal Major Modification. 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 for this equipment.

## D. Daily Emission Limits (DELs)

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.16 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.16.1 and 3.16.2, 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: 4.5 g-NOx/bhp-hr, 0.37 g-CO/bhp-hr, or 0.22 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 0.09 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)

An AAQA shall 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 District's Technical Services Division conducted the required analysis. Refer to **Appendix D** of this document for the AAQA summary sheet.

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

| | NOx | Sox | CO | PM10 |
|---|---|---|---|---|
| Lbs/hr | NA* | NA* | NA* | NA* |
| Lbs/yr | 82 | 0 | 87 | 5 |

*Intermittent use source 1 hour does not require AAQA modeling.

The results from the Criteria Pollutant Modeling are as follows:

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

| Steam Generator | 1 Hour | 3 Hours | 8 Hours. | 24 Hours | Annual |
|---|---|---|---|---|---|
| CO | X[1] | X | X[1] | X | X |
| $NO_x$ | X[1] | X | X[1] | X | Pass |
| $SO_x$ | X[1] | X[1] | X[1] | X[1] | Pass |
| $PM_{10}$ | X | X | X | X[1] | Pass[2] |
| $PM_{2.5}$ | X | X | X | X[1] | Pass[2] |

**Results were taken from the attached PSD spreadsheet.
[1]Intermittent use source does not require AAQA modeling
[2]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).

### G. Compliance Certification

Section 4.15.2 of this Rule requires the owner of a new Major Source or a source undergoing a Title I Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Section VIII above, this project does constitute a Title I modification, therefore this requirement is applicable. OEHI's compliance certification is included in Appendix E.

### H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant proposes to install an emergency standby IC engine.

Since the project will provide electricity to be used at the same location, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures on a much greater scale, and would therefore result in a much greater impact.

## Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. A significant permit modification is defined as a "permit amendment that does not qualify as a minor permit modification or administrative amendment."

Minor permit modifications are not Federal Major Modifications. Since this project constitutes a Federal Major Modification the proposed project is considered to be a modification under the Federal Clean Air Act. As a result, the proposed project constitutes a Significant Modification to the Title V Permit.

**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.

| 40 CFR 60 Subpart IIII Requirements for New Emergency IC Engines Powering Generators (2007 and Later Model Year) | Proposed Method of Compliance with 40 CFR 60 Subpart IIII Requirements |
|---|---|
| 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 October 1, 2010, the maximum allowable sulfur fuel content will be lowered to 15 ppm. | 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 earlier in this evaluation. |
| The operator/owner must install a non-resettable hour meter prior to startup of the engine(s). | The applicant has proposed to install a non-resettable hour meter. The following condition will be included on the permit:<br>• 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] |
| 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. | The following condition will be included on the permit:<br>• 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] |

**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 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* 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.

An HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (Appendix D), the total facility prioritization score including this project was greater than one. Therefore, an HRA was required to determine the short-term acute and long-term chronic exposure from this project.

The cancer risk for this project is shown below:

| RMR Summary | | | |
|---|---|---|---|
| **Categories** | **Emergency Diesel ICE (Unit 846-0)** | **Project Totals** | **Facility Totals** |
| **Prioritization Score** | N/A[1] | N/A[1] | >1 |
| **Acute Hazard Index** | N/A[2] | N/A[2] | 0.00 |
| **Chronic Hazard Index** | N/A[2] | N/A[2] | 0.00 |
| **Maximum Individual Cancer Risk** | 0.02 | 0.02 | 0.1 |
| **T-BACT Required?** | **No** | | |
| **Special Permit Conditions?** | **Yes** | | |

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

Unit 846-0

1. The PM10 emissions rate shall not exceed **0.15** g/hp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 13 CCR 2423 and 17 CCR 93115]
2. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102] N
3. The engine shall be operated only for maintenance, testing, and required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed **20** hours per year. [District Rules 2201, and 4702 and 17 CCR 93115] N

**Discussion of T-BACT**

BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is not required for this project because the HRA indicates that the risk is not above the District's thresholds for triggering T-BACT requirements; therefore, compliance with the District's Risk Management Policy is expected.

**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 $PM_{10}$ emission factor of 0.4 g-$PM_{10}$/bhp-hr.

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

The new engine has a $PM_{10}$ emission factor less than 0.09 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**

The purpose of this rule is to limit the emissions of nitrogen oxides (NOx), carbon monoxide (CO), and volatile organic compounds (VOC) from internal combustion engines. Except as provided in Section 4.0, the provisions of this rule apply to any internal combustion engine, rated greater than 50 bhp, that requires a PTO.

The proposed engine(s) are also subject to District Rule 4702, Internal Combustion Engines. Since emissions limits of District Rule 4702 and all other requirements are equivalent or more stringent than District Rule 4701 requirements, compliance with District Rule 4702 requirements will satisfy requirements of District Rule 4701.

**Rule 4702 Internal Combustion Engines**

The following table demonstrates how the proposed engine 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 non-resettable elapsed operating time meter. | 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. |
| 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. | The following conditions will be included on the permit:<br>• {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]<br>• {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] |
| The owner/operator must operate and | A permit condition enforcing this requirement was |

| | |
|---|---|
| maintain the engine(s) and any installed control devices according to the manufacturers written instructions. | shown earlier in the evaluation. |
| The owner/operator must monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier. | The following condition will be included on the permit:<br>• {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] |
| 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. | The following conditions will be included on the permit:<br>• {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 record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115]<br>• The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]<br>• {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] |

**Rule 4801 Sulfur Compounds**

Rule 4801 requires that sulfur compound emissions (as $SO_2$) shall not exceed 0.2% by volume. Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

Volume $SO_2$ = (n x R x T) ÷ P
n = moles $SO_2$
T (standard temperature) = 60 °F or 520 °R

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

$$\frac{0.000015\,lb-S}{lb-fuel} \times \frac{7.1\,lb}{gal} \times \frac{64\,lb-SO_2}{32\,lb-S} \times \frac{1\,MMBtu}{9{,}051\,scf} \times \frac{1\,gal}{0.137\,MMBtu} \times \frac{lb-mol}{64\,lb-SO_2} \times \frac{10.73\,psi-ft^3}{lb-mol-°R} \times \frac{520°R}{14.7\,psi} \times 1{,}000{,}000 = 1.0\ ppmv$$

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 will comply with the requirements of Title 17 CCR Section 93115.

| Title 17 CCR Section 93115 Requirements for New Emergency IC Engines Powering Electrical Generators | Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements |
|---|---|
| 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:<br>• 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] |
| New stationary emergency standby diesel- | The applicant has proposed the use of engine(s) that |

| | |
|---|---|
| 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). | 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: 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. | Permit conditions enforcing these requirements were shown earlier in the evaluation. |

**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.

The District performed an Engineering Evaluation (this document) for the proposed project and determined that the project qualifies for ministerial approval under the District's Guideline for Expedited Application Review (GEAR). Section 21080 of the Public Resources Code exempts from the application of CEQA those projects over which a public agency exercises only ministerial approval. Therefore, the District finds that this project is exempt from the provisions of CEQA.

**IX. Recommendation**

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATC S-382-846-0 subject to the permit conditions on the attached draft ATC in **Appendix** F.

## X. Billing Information

| Annual Permit Fees | | | |
|---|---|---|---|
| Permit Number | Fee Schedule | Fee Description | Annual Fee |
| S-382-846-0 | 3020-10D | 755 hp IC engine | $479 |

# APPENDIX A
## Quarterly Net Emissions Change (QNEC)

**Quarterly Net Emissions Change (QNEC)**

**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:

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

| QNEC | | |
|---|---|---|
| Pollutant | PE2 Total (lb/yr) | Quarterly PE2 (lb/qtr) |
| $NO_X$ | 150 | 37.5 |
| $SO_X$ | 0 | 0.0 |
| $PM_{10}$ | 3 | 0.8 |
| CO | 12 | 3.0 |
| VOC | 7 | 1.8 |

| Permit #: S-382-846-0 | **Last Updated** |
|---|---|
| Facility: OCCIDENTAL OF ELK HILLS INC | 05/09/2013 TORID |

Equipment Pre-Baselined: NO

| | NOX | SOX | PM10 | CO | VOC |
|---|---|---|---|---|---|
| Potential to Emit (lb/Yr): | 150.0 | 0.0 | 3.0 | 12.0 | 7.0 |
| | | | | | |
| Daily Emis. Limit (lb/Day) | 179.8 | 0.2 | 3.6 | 14.8 | 8.8 |
| | | | | | |
| Quarterly Net Emissions Change (lb/Qtr) | | | | | |
| Q1: | 38.0 | 0.0 | 1.0 | 3.0 | 2.0 |
| Q2: | 38.0 | 0.0 | 1.0 | 3.0 | 2.0 |
| Q3: | 38.0 | 0.0 | 1.0 | 3.0 | 2.0 |
| Q4: | 38.0 | 0.0 | 1.0 | 3.0 | 2.0 |
| | | | | | |
| Check if offsets are triggered but exemption applies | N | N | N | N | N |
| | | | | | |
| Offset Ratio | | | | | |
| | | | | | |
| Quarterly Offset Amounts (lb/Qtr) | | | | | |
| Q1: | | | | | |
| Q2: | | | | | |
| Q3: | | | | | |
| Q4: | | | | | |

# Appendix B
# ARB Executive Order

| California Environmental Protection Agency AIR RESOURCES BOARD | CUMMINS INC. | EXECUTIVE ORDER U-R-002-0523-1 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 | ACEXL060.AAD | 60.0, 78.0 | Diesel | 8000 |

| SPECIAL FEATURES & EMISSION CONTROL SYSTEMS | TYPICAL EQUIPMENT APPLICATION |
|---|---|
| Direct Diesel Injection, Turbocharger, Charge Air Cooler, Engine Control Module | Generator Set |

The engine models and codes are attached.

The following are the exhaust certification standards (STD) 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 | N/A | N/A | N/A |
| | | CERT | -- | -- | 6.3 | 0.5 | 0.12 | -- | -- | -- |

**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.**

This Executive Order hereby supersedes Executive Order U-R-002-0523 dated July 23, 2009.

Executed at El Monte, California on this 7 day of January 2010.

Annette Hebert, Chief
Mobile Source Operations Division

# Appendix C
# 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.

## Top Down BACT Analysis for the Emergency IC Engine(s)

BACT Guideline 3.1.1 (July 10, 2009) applies to emergency diesel IC engines. In accordance with the District BACT policy, information from that guideline will be utilized without further analysis.

1. **BACT Analysis for $NO_X$, VOC, and CO Emissions:**

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

   BACT Guideline 3.1.1 identifies only the following option:

   - *Latest EPA Tier Certification level for applicable horsepower range*

   To determine the latest applicable Tier level, the following EPA and state regulations were consulted:

   - 40 CFR Part 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
   - 40 CFR Part 89 – Control of Emissions from New and In-Use Nonroad Compression – Ignition Engines
   - 40 CFR Part 1039 – Control of Emissions from New and In-Use Nonroad Compression-Ignition Engines
   - Title 17 CCR, Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines

   40 CFR Parts 89 and 1039, which apply only to nonroad engines, do not directly apply because the proposed emergency engine(s) do not meet the definition of a nonroad engine. Therefore, only Title 17 CCR, Section 93115 and 40 CFR Part 60 Subpart IIII apply directly to the proposed emergency engine(s).

   Title 17 CCR, Section 93115.6(a)(3)(A) (CARB stationary diesel engine ATCM) applies to emergency standby diesel-fired engines and requires that such engines be certified to the emission levels in Table 1 (below). Please note that these levels are at least as stringent or more stringent than the emission levels in 40 CFR Subpart IIII.

| Table 1: Emission Standards for New Stationary Emergency Standby Diesel-Fueled CI Engines g/bhp-hr (g/kW-hr) | | | | | |
|---|---|---|---|---|---|
| **Maximum Engine Power** | **Tier** | **Model Year(s)** | **PM** | **NMHC+NOx** | **CO** |
| 50 ≤ HP < 75 (37 ≤ kW < 56) | 2 | 2007 | 0.15 (0.20) | 5.6 (7.5) | 3.7 (5.0) |
| | 4i | 2008+ | | 3.5 (4.7) | |
| 75 ≤ HP < 100 (56 ≤ kW < 75) | 2 | 2007 | 0.15 (0.20) | 5.6 (7.5) | 3.7 (5.0) |
| | 3 | 2008+ | | 3.5 (4.7) | |
| 100 ≤ HP < 175 (75 ≤ kW < 130) | 3 | 2007 | 0.15 (0.20) | 3.0 (4.0) | 3.7 (5.0) |
| | | 2008+ | | | |
| 175 ≤ HP < 300 (130 ≤ kW < 225) | 3 | 2007 | 0.15 (0.20) | 3.0 (4.0) | 2.6 (3.5) |
| | | 2008+ | | | |
| 300 ≤ HP < 600 (225 ≤ kW < 450) | 3 | 2007 | 0.15 (0.20) | 3.0 (4.0) | 2.6 (3.5) |
| | | 2008+ | | | |
| 600 ≤ HP ≤ 750 (450 ≤ kW ≤ 560) | 3 | 2007 | 0.15 (0.20) | 3.0 (4.0) | 2.6 (3.5) |
| | | 2008+ | | | |
| **HP > 750 (kW > 560)** | **2** | **2007** | **0.15 (0.20)** | **4.8 (6.4)** | **2.6 (3.5)** |
| | | 2008+ | | | |

Additionally, 40 CFR Subpart IIII establishes emission standards for emergency diesel IC engines. These emission standards are the same as those specified in the CARB ATCM, except for engines rated greater than or equal to 50 and less than 75 hp. For such IC engines, the CARB ATCM is more stringent.

Therefore, the most stringent applicable emission standards are those listed in the CARB ATCM (Table 1).

For IC engines rated greater than or equal to 50 hp and less than 75 hp the the higherst Tier required is Tier 4i. For IC engines rated greater than or equal to 75 hp and less than 750 hp the highest Tier reqired is Tier 3. **For engines rated equal to or greater than 750 hp the highest Tier required is Tier 2.**

Also, please note that neither the state ATCM nor the Code of Federal Regulations require the installation of IC engines meeting a higher Tier standard than those listed above for emergency applications, due to concerns regarding the effectiveness of the exhaust emissions controls during periods of short-term operation (such as testing operational readiness of an emergency engine).

The proposed engine is rated at 755 hp. Therefore, the applicable control technology option is EPA Tier 2 certification.

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

The control option listed in Step 1 is not technologically infeasible.

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

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

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

The applicant has proposed the only control option remaining under consideration. Therefore, a cost effectiveness analysis is not required.

**e. Step 5 - Select BACT**

BACT for NOx, VOC, and CO will be the use of an EPA Tier 2 certified engine. The applicant is proposing such a unit. Therefore, BACT will be satisfied.

**2. BACT Analysis for $PM_{10}$ Emissions:**

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

BACT Guideline 3.1.1 identifies only the following option:

- *0.15 g/bhp-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent. (ATCM)*

The latest EPA Tier Certification level for an engine of the proposed model year and horsepower rating is Tier 2 . Refer to the Top-Down BACT analysis for NOx for a discussion regarding the determination of the EPA Tier level to be considered.

Please note Tier 2 or 3 IC engines do not have a PM emission standard that is more stringent than 0.15 g/hp-hr. Additionally, the ATCM requires a PM emission standard of 0.15 g/hp-hr for all new emergency diesel IC engines.

Therefore, a PM/PM10 emission standard of 0.15 g/hp-hr is required as BACT.

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

The control option listed in Step 1 is not technologically infeasible.

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

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

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

The applicant has proposed the only control option remaining under consideration. Therefore, a cost effectiveness analysis is not required.

**e. Step 5 - Select BACT**

BACT for PM10 is emissions of 0.15 g/hp-hr or less. The applicant is proposing an engine that meets this requirement. Therefore, BACT will be satisfied.

# Appendix D
# HRA/AAQA

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

| | |
|---|---|
| To: | Rob Rinaldi, Permit Services |
| From: | Trevor Joy, AQS – Technical Services |
| Date: | May 6, 2013 |
| Facility Name: | Occidental of Elk Hills |
| Location: | LOW |
| Application #(s): | S382-846-0 |
| Project #: | 1131243 |

## A. RMR SUMMARY

| RMR Summary | | | |
|---|---|---|---|
| **Categories** | **Emergency Diesel ICE (Unit 846-0)** | **Project Totals** | **Facility Totals** |
| **Prioritization Score** | N/A[1] | N/A[1] | >1 |
| **Acute Hazard Index** | N/A[2] | N/A[2] | 0.00 |
| **Chronic Hazard Index** | N/A[2] | N/A[2] | 0.00 |
| **Maximum Individual Cancer Risk** | 0.02 | 0.02 | 0.1 |
| **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 no risk factor, or the risk factor is so low that the risk has been determined to be insignificant for this type of unit.

### Proposed Permit Conditions

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

Unit 846-0

4. The PM10 emissions rate shall not exceed **0.15** g/hp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 13 CCR 2423 and 17 CCR 93115]
5. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102] N
6. The engine shall be operated only for maintenance, testing, and required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed **20** hours per year. [District Rules 2201, and 4702 and 17 CCR 93115] N

## B. RMR REPORT

### I. Project Description

Technical Services received a request on April 24, 2013, to perform a Risk Management Review for the proposed installation of a 755 bhp diesel-fired emergency IC engine powering electrical generators, Intermittent use. The project was revised on May 2, 2013 to include an Ambient Air Quality Analysis.

### 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:

| Analysis Parameters Unit 846-0 | | | |
|---|---|---|---|
| **Source Type** | Point | **Location Type** | Rural |
| **BHP** | 755 | **$PM_{10}$ g/hp-hr** | 0.15 |
| **Closest Receptor (m)** | 966 | **Quad** | 2 |
| **Max Hours per Year** | 20 | **Type of Receptor** | Residence |
| **Stack Height (m)** | 2.56 | **Stack Inside Diameter (m)** | 0.1 |
| **Gas Exit Velocity (m/s)** | 77 | **Gas Exit Temp (K)** | 753 |

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

| [redacted] | NOx | Sox | CO | PM10 |
|---|---|---|---|---|
| Lbs/hr | NA* | NA* | NA* | NA* |
| Lbs/yr | 82 | 0 | 87 | 5 |

*Intermittent use source 1 hour does not require AAQA modeling.

The results from the Criteria Pollutant Modeling are as follows:

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

| Steam Generator | 1 Hour | 3 Hours | 8 Hours. | 24 Hours | Annual |
|---|---|---|---|---|---|
| CO | X[1] | X | X[1] | X | X |
| $NO_x$ | X[1] | X | X[1] | X | Pass |
| $SO_x$ | X[1] | X[1] | X[1] | X[1] | Pass |
| $PM_{10}$ | X | X | X | X[1] | Pass[2] |
| $PM_{2.5}$ | X | X | X | X[1] | Pass[2] |

**Results were taken from the attached PSD spreadsheet.
[1]Intermittent use source does not require AAQA modeling
[2]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 hazard indices were below 1.0; and the cancer risk is less than or equal to 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. DICE
C. HEARTS – Facility Summary
D. AAQA spreadsheet

# Appendix E
# Compliance Certification

OCCIDENTAL OF ELK HILLS, INC.
10800 Stockdale Highway Bakersfield, California 93311
Telephone 661 412-5000

May 7, 2013

Mr. Leonard Scandura
Permit Services Manager
San Joaquin Valley Air Pollution Control District
Southern Regional Office
34946 Flyover Court
Bakersfield, CA 93308-9725

**RE: Occidental of Elk Hills, Inc. Certification of Compliance**

Dear Mr. Scandura:

Rule 2201, Section 4.15.2, requires that an owner or operator proposing a federal major modification certify that all major stationary sources owned or operated by such person (or by any entity controlling, controlled by, or under common control with such person) in California are either in compliance or on a schedule for compliance with all applicable emission limitations and standards. This letter certifies compliance for Occidental of Elk Hills, Inc. (OEHI) and its affiliates.

OEHI is an ownership partner with Chevron USA for the Elk Hills Unit, which OEHI operates. OEHI has Notices of Violation outstanding. However, all issues associated with the Notices of Violation have been addressed and OEHI is otherwise operating in compliance with the local, state, and federal laws, orders, regulations, and standards.

Affiliated companies of OEHI own and/or operate other major stationary sources in California. These major stationary sources are currently in compliance with applicable compliance schedules (if any) and are designed and operated to comply with all applicable laws and regulations.

This certification is made on information and belief and is based upon a review of OEHI and affiliated company major stationary sources in the State of California by employees of OEHI and its affiliates who have responsibility for compliance with environmental requirements. This certification is as of the date of its execution.

Sincerely,

Armando Gonzalez
Health, Environmental and Safety Manager
Occidental of Elk Hills, Inc.

cc: Amanda Grainger, OEHI
Mike Glavin, OEHI

# Appendix F
# Draft ATC

San Joaquin Valley
Air Pollution Control District

# AUTHORITY TO CONSTRUCT

DRAFT

**PERMIT NO:** S-382-846-0

**ISSUANCE DATE:** DRAFT

**LEGAL OWNER OR OPERATOR:** OCCIDENTAL OF ELK HILLS INC
**MAILING ADDRESS:** 10800 STOCKDALE HIGHWAY
BAKERSFIELD, CA 93311

**LOCATION:** LIGHT OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

**SECTION:** SE11 **TOWNSHIP:** 30S **RANGE:** 23E

**EQUIPMENT DESCRIPTION:**
755 BHP (INTERMITTENT) CUMMINS MODEL QSX15-G9 TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

## CONDITIONS

1. 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 Rule 2201] Federally Enforceable Through Title V Permit
2. 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. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
6. 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]

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-382-846-0 : May 9 2013 8:13AM – TORID : 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: 4.5 g-NOx/bhp-hr, 0.37 g-CO/bhp-hr, or 0.22 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 0.09 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. 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 and 17 CCR 93115] Federally Enforceable Through Title V Permit
15. 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 20 hours per calendar year. [District Rules 4102, 4702, 17 CCR 93115 and 40 CFR Part 60 Subpart IIII] Federally Enforceable Through Title V Permit
16. 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
17. 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