San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

AUG 0 6 2019

Mr. Luis Rodriguez
Chevron USA, Inc.
PO Box 1392
Bakersfield, CA 93302

Re: Proposed ATC / Certificate of Conformity (Significant Mod)
Facility Number: S-1131
Project Number: S-1192124

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. The project involves one new emergency IC 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,

Arnaud Marjollet
Director of Permit Services

Enclosures

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

Samir Sheikh
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

www.valleyair.org www.healthyairliving.com

San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Diesel-Fired IC Engine Generator

Facility Name:	Chevron USA Inc	Date:	July 16, 2019
Mailing Address:	PO Box 1392 Bakersfield, CA 93302	Engineer:	Stephen Leonard
		Lead Engineer:	Richard Karrs
Contact Person:	Lance Ericksen		
Telephone:	(661) 654-7968		
Fax:			
E-Mail:	Lance.Ericksen@chevron.com		
Application #(s):	S-1131-1205-0		
Project #:	S-1192124		
Deemed Complete:	June 10, 2019		

RWK
7-31-19

I. Proposal

Chevron USA Inc (CUSA) is requesting Authority to Construct (ATC) for the installation of one 2,206 hp diesel-fired emergency IC engine, electrical generator. The IC engine generator will be operated to power limited equipment during PG&E power outages at the Kern River Oilfield.

CUSA received their Title V Permit for facility S-1131. This modification can be classified as a Title V significant modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. CUSA must apply to administratively amend their Title V permit.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (2/18/16)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions 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	Internal Combustion Engines – Phase 1 (8/21/03)
Rule 4702	Internal Combustion Engines (11/14/13)
Rule 4801	Sulfur Compounds (12/17/92)
CH&SC 41700	Health Risk Assessment

CH&SC 42301.6 School Notice
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

The equipment will be located at the Kern Substation in the Kern River Oil Field, within the NE/4 of Section 32, Township 28S, Range 28E. 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. Project location maps and distance to receptor maps are included in **Appendix A.**

IV. Process Description

The 2,206 hp IC engine will power an electrical generator used to power equipment including black start any of the three CUSA cogeneration turbines during power loss from PG&E electrical supply lines. The engine may be operated up to 50 hours per year for maintenance and testing purposes.

V. Equipment Listing

S-1131-1205-0: 2,206 BHP (INTERMITTENT) CATERPILLAR MODEL 3512C TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY IC ENGINE POWERING AN ELECTRICAL GENERATOR CONNECTED TO KERN RIVER POWER SYSTEM

VI. Emission Control Technology Evaluation

CUSA has proposed to install one Tier 2 EPA certified diesel-fired IC engine fired on very low-sulfur diesel fuel (0.0015% by weight sulfur maximum).

The proposed engine meets the latest EPA Tier Certification requirements for emergency engines; therefore, the engine meets the latest ARB/EPA emission standards for diesel particulate matter, hydrocarbons, nitrogen oxides, and carbon monoxide. Manufacturer's certified emission data is included as **Appendix B**.

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 DEGF):	9,051 dscf/MMBtu
fuel heating value:	137,000 Btu/gal
BHP to Btu/hr conversion:	2,542.5 Btu/hp·hr
thermal efficiency of engine:	commonly ≈ 35%
PM_{10} fraction of diesel exhaust:	0.96 (CARB, 1988)

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		
Pollutant	**g/hp·hr**	**Source**
NO_X	3.78	Engine Manufacturer
*SO_X	0.0051	Mass Balance Equation Below
PM_{10}	0.09	Engine Manufacturer
CO	0.67	Engine Manufacturer
VOC	0.19	Engine Manufacturer

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

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 potential to emit for the engine is calculated as follows, and summarized in the table below:

Daily Emissions								
NO_x	3.78	(g/hp·hr) x	2206	(hp) x	24	(hr/day) ÷ 453.6 (g/lb) =	441.2	(lb/day)
SO_x	0.0051	(g/hp·hr) x	2206	(hp) x	24	(hr/day) ÷ 453.6 (g/lb) =	0.6	(lb/day)
PM_{10}	0.09	(g/hp·hr) x	2206	(hp) x	24	(hr/day) ÷ 453.6 (g/lb) =	10.5	(lb/day)
CO	0.67	(g/hp·hr) x	2206	(hp) x	24	(hr/day) ÷ 453.6 (g/lb) =	78.2	(lb/day)
VOC	0.19	(g/hp·hr) x	2206	(hp) x	24	(hr/day) ÷ 453.6 (g/lb) =	22.2	(lb/day)

Annual Emissions								
NO_x	3.78	(g/hp·hr) x	2206	(hp) x	50	(hr/yr) ÷ 453.6 (g/lb) =	919	(lb/yr)
SO_x	0.0051	(g/hp·hr) x	2206	(hp) x	50	(hr/yr) ÷ 453.6 (g/lb) =	1	(lb/yr)
PM_{10}	0.09	(g/hp·hr) x	2206	(hp) x	50	(hr/yr) ÷ 453.6 (g/lb) =	22	(lb/yr)
CO	0.67	(g/hp·hr) x	2206	(hp) x	50	(hr/yr) ÷ 453.6 (g/lb) =	163	(lb/yr)
VOC	0.19	(g/hp·hr) x	2206	(hp) x	50	(hr/yr) ÷ 453.6 (g/lb) =	46	(lb/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 criteria pollutant emissions; 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.

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

5. Major Source Determination

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

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

This source is an existing Major Source for all criteria pollutant emissions and will remain a Major Source for all criteria pollutants.

Rule 2410 Major Source Determination:

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

PSD Major Source Determination (tons/year)						
	NO_2	VOC	SO_2	CO	PM	PM_{10}
Estimated Facility PE before Project Increase	>250	>250	>250	>250	>250	>250
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source ? (Y/N)	Y	Y	Y	Y	Y	Y

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

6. Baseline Emissions (BE)

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

Pursuant to District Rule 2201, BE = PE1 for:

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

otherwise,

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

S-1131-1205-0

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 emission increase of any pollutant subject to regulation under the Act."

Since this source is not included in the 28 specific source categories specified in 40 CFR 51.165, the increases in fugitive emissions are not included in the SB 288 Major Modification calculation.

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	919	50,000	No
SO_x	1	80,000	No
PM_{10}	22	30,000	No
VOC	46	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.

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

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 are calculated in Section VII.C.2 and 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*	919	0	Yes
VOC*	46	0	Yes
PM_{10}	22	30,000	Step 2 No
$PM_{2.5}$	22	20,000	Step 2 No
SO_x	1	80,000	Step 2 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/or VOC emissions, this project constitutes a Federal Major Modification. Federal Offset quantities are calculated below.

Federal Offset Quantities:

The Federal offset quantity is only calculated only for the pollutants for which the project is a Federal Major Modification. The Federal offset quantity is the sum of the annual emission changes for all new and modified emission units in a project calculated as the potential to emit after the modification (PE2) minus the actual emissions (AE) during the baseline period for each emission unit times the applicable federal offset ratio. There are no special calculations performed for units covered by an SLC.

NOx **Federal Offset Ratio 1.5**

Permit No.	Actual Emissions (lb/year)	Potential Emissions (lb/year)	Emissions Change (lb/yr)
S-1131-1205	0	919	919
		Net Emission Change (lb/year):	919
		Federal Offset Quantity: (NEC * 1.5)	1,379

VOC **Federal Offset Ratio 1.5**

Permit No.	Actual Emissions (lb/year)	Potential Emissions (lb/year)	Emissions Change (lb/yr)
S-1131-1205	0	46	46
		Net Emission Change (lb/year):	46
		Federal Offset Quantity: (NEC * 1.5)	69

The permitted equipment is an emergency equipment used exclusively as emergency equipment for electric power generation and will operate less than 200 hours per year for non-emergency purposes. According to Rule 2201, Section 4.6.2, the engine is exempt from offsets.

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

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

- NO2 (as a primary pollutant)
- SO2 (as a primary pollutant)
- CO
- PM
- PM10
- Lead

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 PSD Major Source. Because the project is not located within 10 km (6.2 miles) 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. Project Emission Increase – Significance Determination

a. Evaluation of Calculated Post-project Potential to Emit for New or Modified Emissions Units vs PSD Significant Emission Increase Thresholds

As a screening tool, the post-project potential to emit from all new and modified units is compared to the PSD significant emission increase thresholds, and if the total potentials to emit from all new and modified units are below the applicable thresholds, no futher PSD analysis is needed.

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)					
	NO_2	SO_2	CO	PM	PM_{10}
Total PE from New and Modified Units	<1	<1	<1	<1	<1
PSD Significant Emission Increase Thresholds	40	40	100	25	15
PSD Significant Emission Increase?	N	N	N	N	N

As demonstrated above, because the post-project total potentials to emit from all new and modified emission units are below the PSD significant emission increase thresholds, this project is not subject to the requirements of Rule 2410.

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. As the permit unit is new, QNEC = PE/4 for each air contaminant.

VIII. Compliance Determination

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 Adjusted Increase in Permitted Emissions (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 lb/day, and SSPE for CO is greater than 200,000 lbs/year.

2. BACT Guideline

BACT Guideline 3.1.1, applies to the diesel-fired emergency IC engines. [Emergency Diesel I.C. Engine]. A copy of the guidance is included as **Appendix C**

3. Top-Down BACT Analysis

Per Permit Services Policies and Procedures APR 1305, 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, included as **Appendix D**, BACT has been satisfied with the following:

NOx: Latest EPA Tier Certification – Tier 2 for engines > 750 bhp
PM_{10}: 0.15 g/hp-hr or the Latest EPA Tier Certification – Tier 2 for engines > 750 bhp, whichever is more stringent (ATCM)
VOC: Latest EPA Tier Certification – Tier 2 for engines > 750 bhp

B. Offsets

1. Offset Applicability

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

The SSPE2 is compared to the offset thresholds in the following table.

Offset Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
SSPE2	>20,000	>54,750	>29,200	>200,000	>20,000
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	Yes	Yes	Yes	Yes	Yes

2. Quantity of Offsets Required

As seen above, the SSPE2 is greater than the offset thresholds for all criteria pollutants. Therefore offset calculations will be required for this project.

Emergency equipment that is used exclusively as emergency standby equipment for electrical power generation or any other emergency equipment as approved by the APCO that does not operate more than 200 hours per year of non-emergency purposes and is not used pursuant to voluntary arrangements with a power supplier to curtail power, is exempt from providing emission offsets. Therefore, permit unit S-1131-1205-0 will be exempt from providing offsets and the emissions associated with this permit unit contributing to the SSPE2 should be removed prior to calculating actual offset amounts.

Since S-1131-1205-0 is the only emissions unit in this project, there will be no offsets required for the project.

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,
d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant, and/or
e. Any project which results in a Title V significant permit modification

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

As demonstrated in Sections VII.C.7 and VII.C.8, this project is an SB 288 or Federal Major Modification. Therefore, public noticing for SB 288 or 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	441.2	100 lb/day	Yes
SO_X	0.6	100 lb/day	No
PM_{10}	10.5	100 lb/day	No
CO	78.2	100 lb/day	No
VOC	22.2	100 lb/day	No

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