



OCT 19 2011

Sam Chandler
Highway 59 Landfill Site
7040 N Highway 59
Merced, CA 95348

**Re: Proposed Authority to Construct / Certificate of Conformity (Minor Mod)
District Facility # N-3696
Project # N-1113315**

Dear Mr. Chandler:

Enclosed for your review is the District's analysis of your application for Authority to Construct for the facility identified above. You have requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. This project is for the installation of a 130 bhp diesel-fired emergency standby internal combustion (IC) engine powering an electrical generator

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

If you have any questions, please contact Mr. Rupri Gill, Permit Services Manager, at (209) 557-6400

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

DW:RPG/st

Enclosures

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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

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

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



OCT 19 2011

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

Re: **Proposed Authority to Construct / Certificate of Conformity (Minor Mod)**
District Facility # N-3696
Project # N-1113315

Dear Mr. Rios:

Enclosed for your review is the District's engineering evaluation of an application for Authority to Construct for Highway 59 Landfill Site, located at 7040 North Highway 59, Merced, which has been issued a Title V permit. Highway 59 Landfill Site is requesting that a Certificate of Conformity, with the procedural requirements of 40 CFR Part 70, be issued with this project. This project is for the installation of a 130 bhp diesel-fired emergency standby internal combustion (IC) engine powering an electrical generator

Enclosed is the engineering evaluation of this application and proposed Authority to Construct # N-3696-5-0 with Certificate of Conformity. After demonstrating compliance with the Authority to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 45-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Rupi Gill, Permit Services Manager, at (209) 557-6400.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

DW:RPG

Enclosures

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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

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

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

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

Facility Name:	Highway 59 Landfill Site	Date:	October 10, 2011
Mailing Address:	7040 N. Highway 59 Merced, CA 95348	Engineer:	Robert Gilles
Contact Person:	Jerry Lawrie	Lead Engineer:	Nick Peirce
Telephone:	(209) 723-4481		
FAX:	(209) 384-3109		
Application #:	N-3696-5-0		
Project #:	N-1113315		
Complete:	August 30, 2011		

I. Proposal

Highway 59 Landfill Site is requesting an Authority to Construct (ATC) permit for the installation of a 130 bhp diesel-fired emergency standby internal combustion (IC) engine powering an electrical generator.

Highway 59 Landfill Site has received their Title V Permit. This modification can be classified as a Title V Minor Permit Modification pursuant to Rule 2520, Section 3.20, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. Highway 59 Landfill Site must apply to administratively amend their Title V Operating Permit to include the requirements of the ATC issued with this project.

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (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 – Phase 2 (1/18/07)
Rule 4801 Sulfur Compounds (12/17/92)
CH&SC 41700 Health Risk Assessment

CH&SC 42301.6 School Notice
Title 17 CCR, Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary
Compression-Ignition (CI) Engines
California Environmental Quality Act (CEQA)
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387:
CEQA Guidelines

III. Project Location

The project is located at 7040 N. Highway 59 in Merced, CA.

The District has verified that the equipment is not located within 1,000 feet of the outer boundary of a K-12 school.

IV. Process Description

The standby diesel-fired engine powers an electrical generator for emergency use at a landfill facility in the County of Merced. Other than emergency standby operation, the engine may be operated up to 50 hours per year for maintenance and testing purposes.

V. Equipment Listing

N-3696-5-0: 130 BHP CATERPILLAR MODEL # C4.4 DIESEL-FIRED TIER III
CERTIFIED EMERGENCY STANDBY IC ENGINE TO POWER AN
ELECTRICAL GENERATOR

VI. Emission Control Technology Evaluation

The applicant has proposed to install a Tier 3 certified IC engine that is fired on very low-sulfur diesel fuel (0.0015% by weight sulfur maximum).

The proposed engine meets the latest Tier Certification requirements; therefore, the engine meets the latest ARB/EPA emissions standards for diesel particulate matter, hydrocarbons, nitrogen oxides, and carbon monoxide.

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:	50 hours/year
Density of diesel fuel:	7.1 lb/gal
EPA F-factor (adjusted to 60 °F):	9,051 dscf/MMBtu

Fuel heating value: 137,000 Btu/gal
 BHP to Btu/hr conversion: 2,542.5 Btu/bhp-hr
 Thermal efficiency of engine: commonly ≈ 35%
 PM₁₀ fraction of diesel exhaust: 0.96 (CARB, 1988)

The engine has certified NO_x + VOC emissions of 2.76 g/bhp-hr. It will be assumed the NO_x + VOC emission factor is split 95% NO_x and 5% VOC (per the District's Carl Moyer program).

B. Emission Factors

Emission Factors (EF)		
Pollutant	Emission Factor (g/bhp-hr)	Source
NO _x	2.62	CARB/EPA Certification
SO _x	0.0051	Mass Balance Equation Below
PM ₁₀	0.15	CARB/EPA Certification
CO	1.34	CARB/EPA Certification
VOC	0.14	CARB/EPA Certification

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

C. Calculations

1. Pre-Project Potential to Emit (PE1)

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

2. Post-Project Potential to Emit (PE2)

The daily and annual PE values are calculated using the equations shown below:

$$\text{Daily PE2} = [\text{EF (g/bhp-hr)} \times \text{Engine Rating (bhp)} \times 24 \text{ hrs/day}] / (453.6 \text{ g/lb})$$

$$\text{Annual PE2} = [\text{EF (g/bhp-hr)} \times \text{Engine Rating (bhp)} \times 50 \text{ hrs/yr}] / (453.6 \text{ g/lb})$$

Daily and annual PE2 values for each pollutant are outlined in the table below.

Post-project Emissions (PE2)						
Pollutant	EF (g/bhp-hr)	Engine Rating (bhp)	Hours of Operation		Daily PE2 (lb/day)	Annual PE2 (lb/year)
			Daily (hr/day)	Annual (hr/yr)		
NO _x	2.62	130	24	50	18.0	38
SO _x	0.0051	130	24	50	0.0	0
PM ₁₀	0.15	130	24	50	1.0	2
CO	1.34	130	24	50	9.2	19
VOC	0.14	130	24	50	1.0	2

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

Pursuant to Section 4.9 of District Rule 2201, the Pre-Project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid ATCs or PTOs at the Stationary Source and the quantity of Emission Reduction Credits (ERCs) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

The table below summarizes the SSPE1 values for this project. The information in the table below was gathered from Project # N-1100619

SSPE1 (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
N-3696-1-1	0	0	0	0	876
N-3696-2-10	27,667	27,959	21,161	82,782	91,464
N-3696-3-1	961	16	953	163	29
ERC	0	0	0	0	0
SSPE1	28,628	27,975	22,114	82,945	92,369

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

Pursuant to Section 4.10 of District Rule 2201, the Post-Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid ATCs or PTOs, except for emissions units proposed to be shut down as part of the Stationary Project, at the Stationary Source and the quantity of Emission Reduction Credits (ERCs) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

For this project the change in emissions for the facility is due to the installation of the new emergency standby IC engine, permit unit N-3696-5-0. Thus:

SSPE2 (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
SSPE1	28,628	27,975	22,114	82,945	92,369
N-3696-5-0	38	0	2	19	2
SSPE2 Total	28,666	27,975	22,116	82,964	92,371

5. Major Source Determination

Pursuant to Section 3.24 of District Rule 2201, a Major Source is a stationary source with post project emissions or a Post Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values. However, Section 3.24.2 states, "for the purposes of determining major source status, the SSPE2 shall not include the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site."

This facility does not contain ERCs which have been banked at the source; therefore, no adjustment to SSPE2 is necessary.

Major Source Determination					
Pollutant	SSPE1 (lb/yr)	SSPE2 (lb/yr)	Major Source Threshold (lb/yr)	Pre-project Major Source?	Post-project Major Source?
NO _x	28,628	28,666	20,000	Yes	Yes
SO _x	27,975	27,975	140,000	No	No
PM ₁₀	22,114	22,116	140,000	No	No
CO	82,945	82,964	200,000	No	No
VOC	92,369	92,371	20,000	Yes	Yes

As seen in the table above, the facility is an existing Major Source and will remain a Major Source for NO_x and VOC emissions.

6. Baseline Emissions (BE)

BE = Pre-project Potential to Emit for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,

- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to Section 3.22

Since this is a new emissions unit, then BE = PE1 = 0 lb/day for all criteria pollutants for this project.

7. SB288 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 NOx and VOC, the project's PE2 is compared to the SB 288 Major Modification Thresholds in the following table in order to determine if the SB 288 Major Modification calculation is required.

SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
NOx	38	50,000	No
SO _x	0	80,000	No
PM ₁₀	2	30,000	No
VOC	2	50,000	No

Since none of the SB 288 Major Modification Thresholds are surpassed with this project, this project does not constitute a SB288 Major Modification.

8. Federal Major Modification

As shown in section VII.C.5 of this document, the facility is a Major Source for NOx and VOC; therefore, a Federal Major Modification determination is necessary for NOx and VOC.

Pursuant to the District's draft policy titled *Implementation of Rule 2201 (as amended on 12/18/08 and effective on 6/10/10) for SB288 and Federal Major Modifications*, a permitting action is a Federal Major Modification if it will result in an increase in emission in excess of the thresholds specified in section 3.18 of Rule 2201 (as seen in the table below). Additionally, the draft policy states that if the emission increases are less than to or equal to 0.5 lb/day then they are to be rounded to zero (consistent with District Policy APR-1130).

Federal Major Modification Thresholds	
Pollutant	Threshold (lb/yr)
NOx	0
SOx	80,000
PM ₁₀	30,000
PM _{2.5}	20,000 of direct PM _{2.5} emissions, or
	80,000 of sulfur dioxide emissions, or
	80,000 of nitrogen dioxide emissions
VOC	0

Using the post-project annual Potential to Emit (PE2) values calculated in section VII.C.2 of this document, the average daily increased potential to emit for NOx and VOC are calculated as follows:

$$\text{PE2}_{\text{NOx}}: 38 \text{ lb/yr}$$

$$\text{PE2}_{\text{VOC}}: 2 \text{ lb/yr}$$

$$\text{IPE2}_{\text{NOx}}: (38 \text{ lb/yr}) / (365 \text{ days/yr}) = 0.1 \text{ lb/day}$$

$$\text{IPE2}_{\text{VOC}}: (2 \text{ lb/yr}) / (365 \text{ days/yr}) = 0.006 \text{ lb/day}$$

As demonstrated above, the Increase in Permitted Emissions (IPE) for both NOx and VOC is less than 0.5 lb/day. Pursuant to the District Draft Policy mentioned above, the NOx and VOC emissions increases will be rounded to 0 lb/day and will not exceed the Federal Major Modification Significance thresholds for NOx and VOC. Therefore, this project is not a Federal Major Modification.

9. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen.

QNEC = (PE2 – BE) ÷ 4, where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/year.

PE2 = Post Project Potential to Emit for each emissions unit, lb/year.

BE = Baseline Emissions (per Rule 2201) for each emissions unit, lb/year.

For this application:

$$\begin{aligned} \text{QNEC}_{\text{NOx}} &= (38 \text{ lb-NO}_x\text{/yr} - 0 \text{ lb-NO}_x\text{/yr}) \div 4 &&= 9.5 \text{ lb/qtr} \\ \text{QNEC}_{\text{SOx}} &= (0 \text{ lb-SO}_x\text{/yr} - 0 \text{ lb-SO}_x\text{/yr}) \div 4 &&= 0 \text{ lb/qtr} \\ \text{QNEC}_{\text{PM}_{10}} &= (2 \text{ lb-PM}_{10}\text{/yr} - 0 \text{ lb-PM}_{10}\text{/yr}) \div 4 &&= 0.5 \text{ lb/qtr} \\ \text{QNEC}_{\text{CO}} &= (19 \text{ lb-CO/yr} - 0 \text{ lb-CO/yr}) \div 4 &&= 4.75 \text{ lb/qtr} \\ \text{QNEC}_{\text{VOC}} &= (2 \text{ lb-VOC/yr} - 0 \text{ lb-VOC/yr}) \div 4 &&= 0.5 \text{ lb/qtr} \end{aligned}$$

QNEC (lb/qtr)				
Pollutant	Quarter 1	Quarter 2	Quarter 3	Quarter 4
NOx	9	9	10	10
SOx	0	0	0	0
PM ₁₀	0	0	1	1
CO	4	5	5	5
VOC	0	0	1	1

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following¹:

- a) Any new emissions unit with a potential to emit exceeding 2.0 pounds per day;
- b) The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding 2.0 pounds per day;
- c) Modifications to an existing emissions unit with a valid Permit to Operate resulting in an APE exceeding 2.0 pounds per day; and/or
- d) Any new or modified emissions unit, in a stationary source project, which results in a Major Modification.

As discussed in Section I, the facility is proposing to install a new emergency standby IC engine. Additionally, as discussed in Sections VII.C.7 and VII.C.8, this project results in neither a SB288 Major Modification nor a Federal Major Modification. Therefore, BACT can only be triggered if the daily emissions exceed 2.0 lb/day for any pollutant.

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

¹ 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

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO _x	18.0	> 2.0	n/a	Yes
SO _x	0.0	> 2.0	n/a	No
PM ₁₀	1.0	> 2.0	n/a	No
CO	9.2	> 2.0 and SSPE2 ≥ 200,000 lb/yr	82,964	No
VOC	1.0	> 2.0	n/a	No

As shown above, BACT will be triggered for NO_x emissions for this project.

2. BACT Guideline

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

3. Top Down BACT Analysis

Per District Policy APR 1305, Section IX, "A top-down BACT analysis shall be performed as a part of the Application Review for each application subject to the BACT requirements pursuant to the District's NSR Rule for source categories or classes covered in the BACT Clearinghouse, relevant information under each of the following steps may be simply cited from the Clearinghouse without further analysis."

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

NO_x: Latest EPA Tier Certification level for applicable horsepower range

The applicant has proposed to install a Tier 3 certified diesel-fired IC engine that is fired on very low-sulfur diesel fuel (0.0015% by weight sulfur maximum).

The proposed engine meets the latest Tier Certification requirements for the applicable horsepower range; therefore, the engine meets the latest ARB/EPA emissions standards for diesel particulate matter, hydrocarbons, nitrogen oxides, and carbon monoxide.

B. Offsets

Pursuant to Section 4.6.2 of District Rule 2201, offsets are not required for emergency IC engines; therefore, offset calculations are not required for this proposed new engine.

C. Public Notification

1. Applicability

Public noticing is required for:

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

This project represents neither a new facility nor a new major source; therefore, public notification is not required for these purposes.

b. Major Modifications

As shown in Sections VII.C.7 and VII.C.8, this project constitutes neither a SB288 Major Modification nor a Federal Major Modification. Therefore, public noticing will not be required for major modification purposes.

c. Any new emissions unit with PE > 100 lb/day for any one pollutant

As calculated in Section VII.C.2, daily emissions for all pollutants are less than 100 lb/day; therefore, public noticing requirements are not triggered for PE >100 lb/day for this new emission unit.

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

As shown in Section VII.C.3, the offset threshold for NO_x and VOC emissions was exceeded prior to this project. Since this proposed engine did not cause any exceedance from below an offset threshold to above an offset threshold, for any pollutant, then public notice requirements will not be required for these purposes.

e. Any project where SSIPE > 20,000 lb/year for any pollutant.

Stationary Source Increase in Permitted Emissions (SSIPE) is calculated pursuant to District Policy as shown below:

$$\text{SSIPE (lb/year)} = (\text{SSPE2} - \text{SSPE1}) \text{ lb/year}$$

The following table compares the SSIPE values for each pollutant with the public notice threshold of 20,000 lb/year.

SSIPE (lb/year)					
Pollutant	SSPE2	SSPE1	SSIPE	Public Notice Threshold	Public Notice Triggered?
NO _x	28,666	28,628	38	20,000	No
SO _x	27,975	27,975	0	20,000	No
PM ₁₀	22,116	22,114	2	20,000	No
CO	82,964	82,945	19	20,000	No
VOC	92,371	92,369	2	20,000	No

As shown in the table above, the public notice threshold of 20,000 lb/year has not been exceeded by any criteria pollutant as a result of this project; therefore, public notice requirements will not be triggered for these purposes.

2. Public Notice Action

As shown above, public notice requirements are not triggered for any reason for this project. Therefore, public notice action is not required.

D. Daily Emissions Limits

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

- *Emissions from this IC engine shall not exceed any of the following limits: 2.62 g-NO_x/bhp-hr, 1.34 g-CO/bhp-hr, or 0.14 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]*
- *The PM₁₀ emissions rate shall not exceed 0.15 g/bhp-hr based on US EPA certification using ISO 8178 test procedure. [District Rule 2201 and 17 CCR 93115]*
- *Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801 and 17 CCR 93115]*

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.

Rule 2520 Federally Mandated Operating Permits

Highway 59 Landfill Site is subject to this Rule, and has received their Title V Operating Permit. The proposed modification is a Minor Modification to the Title V Permit pursuant to Section 3.20 of this rule:

In accordance with Rule 2520, 3.20, these modifications:

1. Do not violate requirements of any applicable federally enforceable local or federal requirement;
2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions;
3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
4. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
 - a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of Title I of the Federal Clean Air Act; and
 - b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act; and
5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
6. Do not seek to consolidate overlapping applicable requirements.

As discussed above, the facility has applied for a Certificate of Conformity (COC); therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Continued compliance with this rule is expected.

Rule 4001 New Source Performance Standards (NSPS)

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

The proposed engine at this site is subject to the requirements of this subpart. The District has not yet obtained a delegation from EPA to enforce this subpart. Therefore, requirements of this subpart are not listed in the permit at this time.

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 Engines (RICE)

The proposed engine at this site is subject to the requirements of this subpart. The District has not yet obtained a delegation from EPA to enforce this subpart. Therefore, requirements of this subpart are not listed in the permit at this time.

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 C), the total facility prioritization score including this project was greater than one. Therefore, a health risk assessment 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:

HRA Summary		
Unit	Cancer Risk	T-BACT Required
N-3696-5-0	0.0641 per million	No

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.

District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification not have acute or chronic indices, or a cancer risk greater than the District's significance levels (i.e. acute and/or chronic indices greater than 1 and a cancer risk greater than 10 in a million). As outlined by the HRA Summary in Appendix C of this report, the emissions increases for this project was determined to be less than significant.

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

- *{Modified 1901} The PM10 emissions rate shall not exceed 0.15 g/bhp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 17 CCR 93115]*
- *{1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102] N*
- *{Modified 1344} 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 50 hours per year. [District Rules 2201, and 4702] N

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 PM₁₀ emission factor of 0.4 g-PM₁₀/bhp-hr.

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

Since the new engine has a PM₁₀ emission factor less than 0.4 g/bhp-hr, compliance is expected. The following condition will be listed on the ATC to ensure continued compliance with this Rule:

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

Rule 4701 Internal Combustion Engines – Phase 1

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

Rule 4702 Internal Combustion Engines – Phase 2

The following table demonstrates how the proposed engine 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
<p>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.</p>	<p>The Air Toxic Control Measure for Stationary Compression Ignition Engines (Stationary ATCM) limits this engine maintenance and testing to 50 hours/year Thus, compliance is expected.</p> <ul style="list-style-type: none"> • <i>This 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 50 hours per year. [District Rules 2201, 4701, and 4702 and 17 CCR 93115] N</i>

<p>Emergency standby engines cannot be used to reduce the demand for electrical power when normal electrical power line service has not failed, or to produce power for the electrical distribution system, or in conjunction with a voluntary utility demand reduction program or interruptible power contract.</p>	<p>The following conditions will be included on the permit.</p> <ul style="list-style-type: none"> • {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] • {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]
<p>The owner/operator must operate and maintain the engine(s) and any installed control devices according to the manufacturers written instructions.</p>	<p>The following condition will be included on the permit</p> <ul style="list-style-type: none"> • 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]
<p>The owner/operator must monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier</p>	<p>The following condition will be included on the permit:</p> <ul style="list-style-type: none"> • {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]
<p>Records of the total hours of operation of the emergency standby engine, type of fuel used, purpose for operating the engine, all hours of non-emergency and emergency operation, and support documentation must be maintained. All records shall be retained for a period of at least five years, shall be readily available, and be made available to the APCO upon request.</p>	<p>The following conditions will be included on the permit.</p> <ul style="list-style-type: none"> • {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] • {4263} The permittee shall maintain monthly records of the type of fuel purchased [District Rule 4702 and 17 CCR 93115] • {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 SO₂) shall not exceed 0.2% by volume. Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

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

n = moles SO₂

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

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

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

Since 1.0 ppmw is ≤ 2,000 ppmw, 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 and 17 CCR 93115]

California Health & Safety Code 42301.6 (School Notice)

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

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 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 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 a Tier 3 certified engine which meets the latest EPA Tier Certification level for the applicable horsepower range, guaranteeing compliance with the emission standards of this section. 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 proposed permit condition enforcing this requirement was included earlier in this evaluation
New stationary emergency standby diesel-fueled IC engines (> 50 bhp) must meet the standards for off-road engines of the same model year and maximum rated power as specified in the Off-Road Compression Ignition Engine Standards (Title 13, CCR, Section 2423).	The applicant has proposed the use of an engine that is Tier 3 certified, which meets the latest EPA Tier Certification level for the applicable horsepower range.
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.	The proposed permit conditions enforcing these requirements were included earlier in this 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; and
- 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.

Greenhouse Gas (GHG) Significance Determination

It is determined that no other agency has or will prepare an environmental review document for the project. Thus the District is the Lead Agency for this project.

The District's engineering evaluation (this document – Appendix E) demonstrates that the project would not result in an increase in project specific greenhouse gas emissions. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

District CEQA Findings

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15031 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Issue Authority to Construct N-3696-5-0 subject to the permit conditions on the attached draft Authority to Construct (ATC) permit in Appendix A.

X. Billing Information

Billing Schedule			
Permit Number	Fee Schedule	Fee Description	Fee Amount
N-3696-5-0	3020-10-B	130 bhp IC engine	\$117.00

Appendixes

- A. Draft ATC
- B. BACT Guideline and BACT Analysis
- C. HRA / RMR Summary
- D: Title V Form 009 – Compliance Certification Form
- E: Greenhouse Gas Evaluation

Appendix A

Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: N-3696-5-0

LEGAL OWNER OR OPERATOR: HIGHWAY 59 LANDFILL SITE
MAILING ADDRESS: 369 W 18TH STREET
MERCED, CA 95340

LOCATION: 7040 N HIGHWAY 59
MERCED, CA 95348

EQUIPMENT DESCRIPTION:
130 BHP CATERPILLAR MODEL # C4.4 DIESEL-FIRED TIER III CERTIFIED EMERGENCY STANDBY IC ENGINE TO
POWER AN ELECTRICAL GENERATOR

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {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]
5. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
6. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
7. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702 and 17 CCR 93115]
8. Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801 and 17 CCR 93115]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 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
N-3696-5-0 Oct 14 2011 2:02PM - GILLECR Joint Inspection NOT Required

9. Emissions from this IC engine shall not exceed any of the following limits: 2.62 g-NOx/bhp-hr, 1.34 g-CO/bhp-hr, or 0.14 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
10. The PM10 emissions rate shall not exceed 0.15 g/hp-hr based on US EPA certification using ISO 8178 test procedure. [District Rule 2201 and 17 CCR 93115]
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]
12. {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]
13. {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]
14. {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]
15. {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]
16. 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 50 hours per year. [District Rules 2201 and 4702 and 17 CCR 93115]
17. {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
18. {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]
19. U.S. EPA administers the requirements of 40 CFR Part 60 Subpart IIII and 40 CFR Part 63 Subpart ZZZZ. The owner or operator shall comply with the emission and operating limitations, testing requirements, initial and continuous compliance requirements as specified in these subparts. The owner or operator shall submit all applicable notifications, reports, and records to the administrator by the required compliance dates. [District Rules 4001 and 4002]

DRAFT

Appendix B
BACT Guideline and BACT Analysis

San Joaquin Valley Unified Air Pollution Control District

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

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

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

Top Down BACT Analysis for the Emergency IC Engine

1. BACT Analysis for NO_x Emissions:

a. Step 1 - Identify all control technologies

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

Pollutant	Achieved in Practice
NO _x	Latest EPA Tier Certification level for applicable horsepower range

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

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

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

d. Step 4 - Cost Effectiveness Analysis

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

e. Step 5 - Select BACT

BACT for NO_x emissions from this emergency standby diesel IC engine is the latest EPA Tier Certification level for the applicable horsepower range. The applicant has proposed to install a Tier 3 certified 130 bhp emergency standby diesel IC engine, which is the latest Tier Certification for an engine this size as shown in the attached Tier Certification table at the end of this Appendix.

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

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

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

Appendix C
HRA / RMR Summary

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Robert Gilles – Permit Services
 From: Cheryl Lawler - Technical Services
 Date: September 14, 2011
 Facility Name: Highway 59 Landfill Site
 Location: 7040 N. Highway 59, Merced
 Application #(s): N-3696-5-0
 Project #: N-1113315

A. RMR SUMMARY

RMR Summary			
Categories	Emergency Diesel ICE (Unit 5-0)	Project Totals	Facility Totals
Prioritization Score	N/A ¹	N/A ¹	>1
Acute Hazard Index	N/A ²	N/A ²	N/A
Chronic Hazard Index	N/A ²	N/A ²	N/A
Maximum Individual Cancer Risk	6.41E-08	6.41E-08	4.24E-07
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 5-0

1. Modified {1901} The PM10 emissions rate shall not exceed 0.15 g/hp-hr based on US EPA certification using ISO 8178 test procedure. [District Rule 2201]
2. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102] N
3. Modified {1344} 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 50 hours per year. [District NSR Rule and District Rule 4701]N

B. RMR REPORT

I. Project Description

Technical Services received a request on August 29, 2011, to perform a Risk Management Review for a 130 bhp emergency diesel IC engine powering an electrical generator.

II. Analysis

Technical Services performed a screening level health risk assessment using the District's Diesel Exhaust Risk Screening spreadsheet.

The following parameters were used for the review:

Analysis Parameters						
Unit #s	bhp-hr	PM ₁₀ g/hp-hr	Receptor (m)	Quad	Hours/Year	Load%
5-0	130	0.15	640	2	50	100
Location Type			Rural	Receptor Type		Residence

III. Conclusion

The individual cancer risk associated with the operation of the proposed emergency diesel IC engine is **6.41E-08** which is less than the 1 in a million threshold. In accordance with the District's Risk Management Policy, the project is approved as proposed **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 the proposed unit.

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

Appendix D

Title V Form 009 – Compliance Certification Form

**San Joaquin Valley
Unified Air Pollution Control District**

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

- SIGNIFICANT PERMIT MODIFICATION ADMINISTRATIVE
 MINOR PERMIT MODIFICATION AMENDMENT

COMPANY NAME: Highway 59 Landfill	FACILITY ID: N -3696
1. Type of Organization: <input type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input checked="" type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility	
2. Owner's Name: Merced County Regional Waste Management Authority	
3. Agent to the Owner: Jesse Brown	

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

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

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

Jesse Brown
Signature of Responsible Official

8-17-11
Date

Jesse Brown
Name of Responsible Official (please print)

Executive Director
Title of Responsible Official (please print)

Appendix E
Greenhouse Gas Evaluation

Green House Gas (GHG) Evaluation

N-3696-5-0

Emission Factors – CA low sulfur diesel fuel

Emission factors and global warming potentials (GWP) are taken from the California Climate Action Registry (CCAR), Version 3.1, January, 2009 (Appendix C, Tables C.7 and C.8):

- CO₂ 73.1 kg/MMBtu (HHV) diesel fuel (161.2 lb/MMBtu)
- CH₄ 0.003 kg/MMBtu (HHV) diesel fuel (0.0066 lb/MMBtu)
- N₂O 0.0006 kg/MMBtu (HHV) diesel fuel (0.0013 lb/MMBtu)

GWP for CH₄ = 23 lb-CO₂e per lb-CH₄

GWP for N₂O = 296 lb-CO₂e per lb-N₂O

Calculations:

Total Maximum Heat Input Increase for this project

Diesel Fuel Combustion = 6.4 gallons/hr
Max. Annual Operation = 50 hours/year
Total Annual Fuel Usage = (6.4 gal/hr) x (50 hrs/year)
= 320 gallons/year

Convert to MMBtu/yr = (320 gal/yr) x (137,000 Btu/gal) x (MMBtu/10⁶Btu)
= **44 MMBtu/yr**

CO₂ Emissions = (44 MMBtu/year) x (161.2 lb/MMBtu) x (1 ton/2,000 lb)
= *3.5 ton-CO₂e/year*

CH₄ Emission = (44 MMBtu/year) x (0.0066 lb/MMBtu) x (23 lb-CO₂e/lb-CH₄) x
(1 ton/2,000 lb)
= *0.0033 ton-CO₂e/year*

N₂O Emissions = (44 MMBtu/year) x (0.0013 lb/MMBtu) x (296 lb-CO₂e/lb-CH₄) x
(1 ton/2,000 lb)
= *0.0085 ton-CO₂e/year*

Total Annual GHG Emissions = (3.5 + 0.0033 + 0.0085) ton-CO₂e/year
= **3.5 short ton-CO₂e/year**

Metric Conversion:

$$\begin{aligned} \text{Annual Emissions} &= (3.5 \text{ short ton-CO}_2\text{e/year}) \times 0.9072 \text{ metric tons/short ton} \\ &= \mathbf{3 \text{ metric tons-CO}_2\text{e/year}} \end{aligned}$$

Conclusion:

Per District Policy, project specific greenhouse gas emissions less than or equal to 230 metric tons-CO₂e/year are considered to be zero for District permitting purposes and are exempt from further environmental review.

As shown above, the project specific greenhouse gas emissions are less than 230 metric tons-CO₂e/year. The emissions are therefore considered to be zero and no further discussion is required.