



**San Joaquin Valley**  
AIR POLLUTION CONTROL DISTRICT



**HEALTHY AIR LIVING™**

JUN 15 2010

Mr. Lewis Nelson  
Tulare City Wastewater Plant  
3981 South K Street  
Tulare, CA 93274

**Re: Notice of Preliminary Decision - ATC / Certificate of Conformity  
Facility # S-548  
Project # S-1100193**

Dear Mr. Nelson:

Enclosed for your review and comment is the District's analysis of an application for Authorities to Construct for Tulare City Wastewater Plant at 1875 S. West Street in Tulare, CA. The City of Tulare is constructing an expansion of the domestic side of the wastewater treatment plant. There will also be a new 2922 bhp emergency diesel engine.

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

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

If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 326-6900.

Thank you for your cooperation in this matter.

Sincerely,

David Warner  
Director of Permit Services

Enclosures

c: Dan Klevann, Permit Services

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

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

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

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



**San Joaquin Valley**  
AIR POLLUTION CONTROL DISTRICT



**HEALTHY AIR LIVING™**

JUN 15 2010

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

Re: **Notice of Preliminary Decision - ATC / Certificate of Conformity**  
**Facility # S-548**  
**Project # S-1100193**

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of an application for Authorities to Construct for Tulare City Wastewater Plant at 1875 S. West Street in Tulare, CA. The City of Tulare is constructing an expansion of the domestic side of the wastewater treatment plant. There will also be a new 2922 bhp emergency diesel engine.

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

Thank you for your cooperation in this matter. If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 326-6900.

Thank you for your cooperation in this matter.

Sincerely,

  
David Warner  
Director of Permit Services

Enclosures

c: Dan Klevann, Permit Services

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JUN 15 2010

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

**Re: Notice of Preliminary Decision - ATC / Certificate of Conformity**  
**Facility # S-548**  
**Project # S-1100193**

Dear Mr. Rios:

Enclosed for your review is the District's engineering evaluation of an application for Authorities to Construct for Tulare City Wastewater Plant at 1875 S. West Street in Tulare, CA, which has been issued a Title V permit. Tulare City Wastewater Plant is requesting that Certificates of Conformity, with the procedural requirements of 40 CFR Part 70, be issued with this project. The City of Tulare is constructing an expansion of the domestic side of the wastewater treatment plant. There will also be a new 2922 bhp emergency diesel engine.

Enclosed is the engineering evaluation of this application, along with the current Title V permit, and proposed Authorities to Construct # S-548-20-2, '-34-0 with Certificates of Conformity. After demonstrating compliance with the Authority to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 45-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 326-6900.

Thank you for your cooperation in this matter.

Sincerely,

David Warner  
Director of Permit Services

Enclosures

c: Dan Klevann, Permit Services

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Executive Director/Air Pollution Control Officer

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

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Air Pollution Control District solicits public comment on the proposed issuance of Authority To Construct to Tulare City Wastewater Plant for its wastewater treatment plant at 1875 S. West Street in Tulare, California. The City of Tulare is constructing an expansion of the domestic side of the wastewater treatment plant. There will also be a new 2922 bhp emergency diesel engine.

The analysis of the regulatory basis for these proposed actions, Project #S-1100193, is available for public inspection at the District office at the address below. Written comments on the proposed initial permit must be submitted within 30 days of the publication date of this notice to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 1990 E. GETTYSBURG AVE, FRESNO, CA 93726-0244.**

# Final Review

## San Joaquin Valley Air Pollution Control District

### Authority to Construct Application Review

Facility Name:	Tulare City Wastewater Plant	Date:	May 17, 2010
Mailing Address:	1875 S. West Street Tulare, CA 93274	Engineer:	Dan Klevann
Contact Person:	Lewis Nelson, Public Works Director	Lead Engineer:	Allan Phillips
Telephone:	559-684-4318	Date:	May 25, 2010
Application #:	S-548-20-2, '-34-0		
Project #:	S-1100193		
Complete:	February 3, 2010		

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#### I. Proposal

Tulare City Wastewater Plant (TCWP) is proposing to expand the domestic side of their wastewater treatment facility capacity to either 6 or 8 million gallons per day (MGD). Total facility wastewater throughput (domestic and industrial) will be up to 20 MGD. They will be installing a new diesel-fired emergency standby internal combustion (IC) engine to power equipment related to the wastewater process including aerators, blowers, digesters, clarifiers, and filters. They will also be replacing two permit exempt 0.75 MMBtu/hr sludge heaters for the 6 MGD option, and adding an additional permit exempt 0.75 MMBtu/hr sludge heater to the 8 MGD option. This analysis will evaluate any increase in domestic throughput up to a total capacity of 8 MGD.

TCWP received their Title V Permit on September 30, 2005. This modification can be classified as a Title V minor modification pursuant to Rule 2520, Section 3.20, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day Environmental Protection Agency (EPA) comment period will be satisfied prior to the issuance of the Authority to Construct. TCWP must apply to administratively amend their Title V Operating Permit to include the requirements of the ATC issued with this project.

The new engine requires best available control technology (BACT). The facility is over the offset threshold for NO<sub>x</sub>, SO<sub>x</sub>, VOC, and CO. However, the 0.75 MMBtu/hr heaters are fired on natural gas and thus are exempt from permit, and offset considerations per Rule 2020. The engine is an emergency engine exempt from offsets. The wastewater operation increases VOC emissions less than 0.5 lb/day. Therefore, offsets are not required for this project. The engine emissions cause the project to have a daily emissions increase of over 100 lb/day for NO<sub>x</sub>. Therefore, the project will require a 30 day public notice period.

## II. Applicable Rules

- Rule 2201 New and Modified Stationary Source Review Rule (9/21/06)
- Rule 2520 Federally Mandated Operating Permits (6/21/01)
- Rule 4001 New Source Performance Standards (4/14/99)
- Rule 4101 Visible Emissions (2/17/05)
- Rule 4102 Nuisance (12/17/92)
- Rule 4201 Particulate Matter Concentration (12/17/92)
- Rule 4308 Boilers, Steam Generators, and Process Heaters (0.075 MMBtu/hr to 2.0 MMBtu/hr) (12/17/09)
- 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 13 California Code of Regulations (CCR), Section 2423 – Exhaust Emission Standards and Test Procedures, Off-Road Compression-Ignition Engines and Equipment
- Title 17 CCR, Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines
- California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

## III. Project Location

The project is located at 1875 S. West Street in Tulare, CA. 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. A location map and plot plan are provided in Appendix A.

## IV. Process Description

The city of Tulare is planning to expand the domestic side of the wastewater treatment plant (DWWTP) to a capacity up to 8 MGD. TCWP processes wastewater generated by municipal and industrial sources in and around the city of Tulare. Once the waste reaches the domestic side of the wastewater treatment plant, it goes through several stages of treatment.

- The first stage, known as primary treatment, allows the solids to settle out of the water and the scum to rise. First, a bar screen is used to collect non-waste elements of the wastewater—rags, plastic bags, sticks and other things larger than ½" width. The collected solids are disposed in a landfill. Then, a grit removal unit separates sand, grit and rocks from the waste stream. The next step is primary sedimentation. Here floatable and settleable materials are removed from the wastewater and

pumped to one of two anaerobic digesters. The sludge from the digesters is moved to drying beds before removal to recycling facilities. Primary treatment might remove half of the solids, organic materials and bacteria from the water.

- The second stage, known as secondary treatment, removes organic materials and nutrients. This is done with the help of bacteria – the water flows to two large, airy units filled with cross-stacked redwood filter media, called biofilters, where bacteria consume everything they can. The wastewater then flows through aeration basins (to promote microorganism growth) to settling tanks, called secondary sedimentation basins, where floatable and settleable solids are removed and returned to the grit removal chamber as biologically rich sludge. Secondary treatment might remove 90 percent of all solids and organic materials from the wastewater.
- The third and final stage, known as tertiary treatment, uses ten percolation/retention ponds, and discharge to non-silage agricultural cropland.

The new 0.75 MMBtu/hr sludge heaters at the DWWTP will be fired on natural gas only. The permit exempt heaters warm the sludge being used in the anaerobic digesters.

The new diesel emergency engine will be installed to provide back-up power to critical process equipment such as aerators, blowers, digesters, clarifiers, filters and other equipment related to the wastewater process during emergency situations. Other than emergency standby operation, the engine may be operated up to 50 hours per year for maintenance and testing purposes.

## V. Equipment Listing

S-548-20-2: TEN WASTEWATER TREATMENT RETENTION/PERCOLATION PONDS: INCREASE TOTAL DOMESTIC WASTEWATER THROUGHPUT UP TO 8 MGD

S-548-34-0 2922 BHP CUMMINS MODEL QSK60-G6 NR2 TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

## VI. Emission Control Technology Evaluation

Engines:

The engine is equipped with:

Turbocharger

Intercooler/aftercooler

The emission control devices/technologies and their effect on diesel engine emissions detailed below are from *Non-catalytic NO<sub>x</sub> Control of Stationary Diesel Engines*, by Don Koeberlein, CARB.

The turbocharger reduces the NO<sub>x</sub> emission rate from the engine by approximately 10% by increasing the efficiency and promoting more complete burning of the fuel.

The intercooler/aftercooler functions in conjunction with the turbocharger to reduce the inlet air temperature. By reducing the inlet air temperature, the peak combustion temperature is lowered, which reduces the formation of thermal NO<sub>x</sub>. NO<sub>x</sub> emissions are reduced by approximately 15% with this control technology.

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

## VII. General Calculations

### A. Assumptions

Percolation Ponds:	16 MGD pre-project throughput 20 MGD post-project throughput
Engine:	
Emergency operating schedule:	24 hours/day
Non-emergency operating schedule:	50 hours/year
Density of diesel fuel:	7.1 lb/gal
EPA F-factor (adjusted to 60 °F):	9,051 dscf/MMBtu
Fuel heating value:	137,000 Btu/gal
BHP to Btu/hr conversion:	2,542.5 Btu/bhp-hr
Thermal efficiency of engine:	commonly ≈ 35%
PM <sub>10</sub> fraction of diesel exhaust:	0.96 (CARB, 1988)



**B. Emission Factors**

Engine:

2922 BHP Engine Emission Factors		
Pollutant	Emission Factor (g/bhp-hr)	Source
NO <sub>x</sub>	3.88	Engine Manufacturer
SO <sub>x</sub>	0.0051	Mass Balance Equation Below
PM <sub>10</sub>	0.09	Engine Manufacturer
CO	0.35	Engine Manufacturer
VOC	0.29	Engine Manufacturer

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

**C. Calculations**

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

The emergency engine is a new emission unit, therefore PE1 = 0 for that unit.

The wastewater process currently processes a total of 16 MGD for the domestic and industrial processes. The EPA program Water9 is used to calculate daily and annual VOC emissions from the wastewater treatment process. Each operation at the wastewater plant is modeled as its own emission unit. There is only one operation (percolation ponds, Permit S-548-20) that has emissions of greater than 2 lb VOC/day. The other operations do not emit over 2 lb VOC/day so those 3 units are not permitted and are not assessed emissions. The calculated pre-project emissions from the wastewater treatment process are 5.2 lb VOC/day and 1,898 lb VOC/yr.

**2. Post Project PE (PE2)**

The daily and annual PE2 are calculated as follows:

**S-548-20-2: Percolation ponds**

Emissions are calculated using the EPA Water9 program. The total wastewater emissions are 5.3 lb VOC/day and 1,935 lb VOC/yr for the 6 MGD option and 5.2 lb VOC/day and 1898 lb VOC/yr for the 8MGD option see Appendix C for calculations. To be conservative, we will use the emissions from the 6 MGD option for the emission profile. *District policy is to consider an IPE of less than 0.5 lb/day to be rounded to zero for the purposes of triggering NSR requirements and therefore the requirements are not triggered for the percolation ponds.*

**S-548-34-0: Emergency Engine**

S-548-34-0 Daily Post Project Emissions					
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Conversion (g/lb)	PE2 Total (lb/day)
NO <sub>x</sub>	3.88	2922	24	453.6	599.9
SO <sub>x</sub>	0.0051	2922	24	453.6	0.8
PM <sub>10</sub>	0.09	2922	24	453.6	13.9
CO	0.35	2922	24	453.6	54.1
VOC	0.29	2922	24	453.6	44.8

S-548-34-0 Annual Post Project Emissions					
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Annual Hours of Operation (hrs/yr)	Conversion (g/lb)	PE2 Total (lb/yr)
NO <sub>x</sub>	3.88	2922	50	453.6	1250
SO <sub>x</sub>	0.0051	2922	50	453.6	2
PM <sub>10</sub>	0.09	2922	50	453.6	29
CO	0.35	2922	50	453.6	113
VOC	0.29	2922	50	453.6	93

**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.

Since this is an existing facility, SSPE1 is equal to the PE<sub>1Total Pre-Project</sub> from all units for all criteria pollutants.

SSPE1					
Permit Unit	NO <sub>x</sub> (lb/yr)	SO <sub>x</sub> (lb/yr)	PM <sub>10</sub> (lb/yr)	CO (lb/yr)	VOC (lb/yr)
'-3, Cogen	12,072	2,549	142	226,021	48,431
'-5, 61.25 MMBtu/hr flare	33,106	80,848	986	6,643	913
'-7, 900 hp emergency IC engine	558	34	40	120	45
'-9, 116 hp emergency IC engine	322	7	5	21	15
'-10, 171 hp emergency IC engine	520	12	30	641	75
'-11, 1,502 hp emergency IC engine	4,437	113	33	199	99
'-12, 110 hp emergency IC engine	49	7	8	1,448	8
'-14, 80 hp emergency IC engine	178	6	5	63	15
'-16, 119 hp emergency IC engine	181	4	10	32	8
'-20, wastewater process	0	0	0	0	1,898
'-24, 0.3 MW fuel cell	53	3	26	131	53
'-25, 0.3 MW fuel cell	53	3	26	131	53
'-26, 0.3 MW fuel cell	53	3	26	131	53
'-28, 2,220 hp emergency IC engine	1,011	1	27	169	17
'-29, 2,220 hp emergency IC engine	1,011	1	27	169	17
'-30, 2,922 hp emergency IC engine	1,250	2	29	113	93
'-32, 6.3 MMBtu/hr heater	899	2,047	25	1,498	250
'-33, 12.4 MMBtu/hr flare & digesters	4,155	2,839	1,385	20,773	187
<b>SSPE1 Total</b>	<b>59,908</b>	<b>88,479</b>	<b>2,830</b>	<b>258,303</b>	<b>52,230</b>

#### 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.

Since this is a modification to an existing facility, SSPE2 is equal to the PE<sub>2</sub>Total Post Project from all units for all criteria pollutants.

SSPE2					
Permit Unit	NO <sub>x</sub> (lb/yr)	SO <sub>x</sub> (lb/yr)	PM <sub>10</sub> (lb/yr)	CO (lb/yr)	VOC (lb/yr)
'-3, Cogen	12,072	2,549	142	226,021	48,431
'-5, 61.25 MMBtu/hr flare	33,106	80,848	986	6,643	913
'-7, 900 hp emergency IC engine	558	34	40	120	45
'-9, 116 hp emergency IC engine	322	7	5	21	15
'-10, 171 hp emergency IC engine	520	12	30	641	75
'-11, 1,502 hp emergency IC engine	4,437	113	33	199	99
'-12, 110 hp emergency IC engine	49	7	8	1,448	8
'-14, 80 hp emergency IC engine	178	6	5	63	15
'-16, 119 hp emergency IC engine	181	4	10	32	8
'-20, wastewater process	0	0	0	0	1,934
'-24, 0.3 MW fuel cell	53	3	26	131	53
'-25, 0.3 MW fuel cell	53	3	26	131	53
'-26, 0.3 MW fuel cell	53	3	26	131	53
'-28, 2,220 hp emergency IC engine	1,011	1	27	169	17

'-29, 2,220 hp emergency IC engine	1,011	1	27	169	17
'-30, 2,922 hp emergency IC engine	1,250	2	29	113	93
'-32, 6.3 MMBtu/hr heater	899	2,047	25	1,498	250
'-33, 12.4 MMBtu/hr flare & digesters	4,155	2,839	1,385	20,773	187
'-34, 2922 hp emergency IC engine	1,250	2	29	113	93
<b>SSPE2 Total</b>	<b>61,158</b>	<b>88,481</b>	<b>2,859</b>	<b>258,416</b>	<b>52,359</b>

### 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)	Existing Major Source?	Becoming a Major Source?
NO <sub>x</sub>	59,908	61,158	50,000	Yes	No
SO <sub>x</sub>	88,479	88,481	140,000	No	No
PM <sub>10</sub>	2,830	2,859	140,000	No	No
CO	258,303	258,416	200,000	Yes	No
VOC	52,230	52,359	50,000	Yes	No

As seen in the table above, the facility is an existing Major Source for NO<sub>x</sub>, CO, and VOC. The facility is not becoming a Major Source for any criteria pollutant as a result of this project.

## 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

For the new emergency engine, BE = PE1 = 0 for all criteria pollutants. However, for the expansion of the wastewater process S-548-20, the BE = HAE. HAE is calculated in Appendix C based on actual throughput data and the Water9 model.

## 7. Major Modification

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

As discussed in Section VII.C.5 previously, the facility is an existing Major Source for NO<sub>x</sub>, CO, and VOC; however, the project by itself would need to be a significant increase in order to trigger a Major Modification. The emissions units within this project do not have a total potential to emit which is greater than Major Modification thresholds (see the following table). Therefore, the project cannot be a significant increase and the project does not constitute a Major Modification.

Major Modification Thresholds for Existing Major Sources			
Pollutant	Annual Emissions for units -20 and -34 combined (lb/yr)	Threshold (lb/yr)	Major Modification?
NO <sub>x</sub>	1,250	50,000	No
SO <sub>x</sub>	2	80,000	No
PM <sub>10</sub>	29	30,000	No
VOC	129	50,000	No

As seen in the table above, this project is not a Major Modification.

## 8. Federal Major Modification

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

## 9. Quarterly Net Emissions Change (QNEC)

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

## VIII. Compliance

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

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

##### 1. BACT Applicability

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

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

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

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

Since the engine is a new emissions unit, the daily emissions are compared to the BACT thresholds in the following table:

Pollutant	Daily Emissions for unit -34 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO <sub>x</sub>	599.9	> 2.0	n/a	Yes
SO <sub>x</sub>	0.8	> 2.0	n/a	No
PM <sub>10</sub>	13.9	> 2.0	n/a	Yes
CO	54.1	> 2.0 and SSPE2 ≥ 200,000 lb/yr	272,164	Yes
VOC	44.8	> 2.0	n/a	Yes

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

As discussed previously in Section I, these permit units are not being relocated from one stationary source to another as a result of this project. Therefore, BACT is not triggered for the relocation of emissions units with a PE > 2 lb/day.

**c. Modification of emissions units – Adjusted Increase in Permitted Emissions (AIPE) > 2 lb/day**

The AIPE is used to determine if BACT is required for emissions units that are being modified. This project involves modifying an existing wastewater treatment operation, the operation has many emission units in one permit unit. The only operation that emits more than 2 lb VOC/day is the percolation ponds. Calculations pre-project and post-project can be seen in Appendix C (Water9 calculations). *District policy is to consider an IPE of less than 0.5 lb/day to be rounded to zero for the purposes of triggering NSR requirements and therefore the requirements are not triggered.* Therefore, BACT is not triggered for the wastewater operation.

**d. Major Modification**

As discussed previously in Section VII.C.7, this project does not constitute a Major Modification. Therefore, BACT is not triggered for a Major Modification.

**2. BACT Guideline**

BACT Guideline 3.1.1, which appears in Appendix E 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 E of this report, BACT for the emergency engines is satisfied with:

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

## **B. Offsets**

Emergency IC engines are exempt from the offset requirements of Rule 2201, per Section 4.6.2. District policy is to consider an IPE of less than 0.5 lb/day to be rounded to zero for the purposes of triggering NSR requirements. Therefore, offsets are not triggered for the wastewater operation.

## **C. Public Notification**

### **1. Applicability**

Public noticing is required for:

- a. New Major Sources, which is a new facility that is also a Major Source,
- b. Major Modifications,
- c. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- d. Any project which results in the offset thresholds being surpassed, and/or
- e. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

#### **a. New Major Source**

A New Major Source is a new facility, which is also a major source. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

#### **b. Major Modification**

As demonstrated previously in Section VII.C.7, this project does not constitute a Major Modification; therefore, public noticing for Major Modification purposes is not required.

**c. PE > 100 lb/day**

The Daily PE for one new engine is compared to the daily PE Public Notice Thresholds in the following table:

PE > 100 lb/day Public Notice Thresholds			
Pollutant	Daily PE for unit -28-0 (lb/day)	Public Notice Threshold (lb/day)	Public Notice Triggered?
NO <sub>x</sub>	599.9	100	Yes
SO <sub>x</sub>	0.8	100	No
PM <sub>10</sub>	13.9	100	No
CO	54.1	100	No
VOC	44.8	100	No

As detailed in the preceding table, the NO<sub>x</sub> 100 lb/day threshold was surpassed with this project. Therefore, public noticing is required for daily emissions greater than 100 lb/day for a new emissions unit.

**2. Public Notice Action**

As discussed above, public noticing is required for this project for surpassing the PE > 100 lb/day for a new emissions unit threshold for NO<sub>x</sub> emissions. 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.

In addition, this facility is a Title V facility and has requested that the ATC issued as a result of this project be issued with a COC (as discussed previously in Section I). Therefore, COC notice documents will be submitted to the Environmental Protection Agency (EPA) prior to the issuance of the ATC for this equipment.

**D. Daily Emissions Limits**

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.15 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.15.1 and 3.15.2, the DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT. In addition, the DEL for SO<sub>x</sub> is established by the sulfur content of the fuel being combusted.

## **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 is required to demonstrate compliance with the offset, public notification, and daily emission limit requirements of Rule 2201. Recordkeeping requirements will be discussed in the individual prohibitory rule sections of this evaluation.

### **4. Reporting**

No reporting is required to ensure compliance with Rule 2201.

## **F. Ambient Air Quality Analysis**

Section 4.14.1 of this Rule requires that an ambient air quality analysis (AAQA) be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of a State or National ambient air quality standard. An AAQA is required to be performed for all New Source Review (NSR) public notice projects. As previously discussed in Section VIII.C this project requires that a public notice be performed before issuance of the ATC for this project. Therefore, the District is required to perform an AAQA for this project.

The Technical Services Division of the SJVAPCD conducted the required AAQA for this project. The results of the AAQA are presented in the following table. Refer to Appendix F of this document for the AAQA summary.

AAQA Results Summary					
Pollutant	1 hr Average	3 hr Average	8 hr Average	24 hr Average	Annual Average
CO	Pass	N/A	Pass	N/A	N/A
NO <sub>x</sub>	Pass	N/A	N/A	N/A	Pass
SO <sub>x</sub>	Pass	Pass	N/A	Pass	Pass
PM <sub>10</sub>	N/A	N/A	N/A	Pass	Pass

- The proposed location of installation of the equipment is in an attainment area for NO<sub>x</sub>, CO, and SO<sub>x</sub>. As shown by the preceding table of AAQA results the proposed equipment installations will not cause a violation of a State or National ambient air quality standard for NO<sub>x</sub>, CO, PM10, or SO<sub>x</sub>.

#### **Rule 2520 Federally Mandated Operating Permits**

This facility is subject to this Rule, and has received their Title V Operating Permit. The proposed modification is a Minor Modification to the Title V Permit pursuant to Section 3.20 of this rule. As discussed previously in the proposal section, the facility has applied for a Certificate of Conformity (COC). Therefore, the following conditions will be listed on the ATC's to ensure compliance:

- {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]
- {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]

In addition, 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 O – Standards of Performance for Sewage Treatment Plants.**

Subpart O is applicable to incinerators that combust wastes containing more than 10 percent sewage sludge (dry basis) produced by municipal sewage treatment plants, or each incinerator that charges more than 1,000 kg per day municipal sewage sludge. The IWWTP/DWWTP will not incinerate sewage sludge, so this NSPS is not applicable.

### **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 ATCs to ensure compliance:

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

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

District Policy APR 1905 - Risk Management Policy for Permitting New and Modified Sources (dated 3/2/01) specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

The District has performed a Health Risk Assessment for this project. The project requires an Ambient Air Quality Analysis (AAQA) because the project triggers a public notice period for going over the daily potential emission threshold of 100 lb/day. District policy APR 1905 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. A Health Risk Assessment (HRA) is not required for a project with a total facility prioritization score of less than or equal to one. According to the Technical Services Memo for this project (see Appendix F), the total facility prioritization score including this project was greater than one. Therefore, a screening level health risk assessment for the diesel engines is required to determine the impact from this project.

As demonstrated previously, 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<sub>10</sub> emission factor of 0.4 g-PM<sub>10</sub>/bhp-hr.

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

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

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

### Rule 4308 Boilers, Steam Generators, and Process Heaters (0.075 MMBtu/hr to 2.0 MMBtu/hr)

Applicant has stated that the sludgel heater burner will meet the requirements of the rule and thus will have certified emissions of less than 0.036 lb NO<sub>x</sub>/MMBtu and 400 ppmv CO @ 3% O<sub>2</sub> (Table 1 Section 5.1). The permittee must demonstrate that the heat has certified NO<sub>x</sub> and CO emissions in compliance with Rule 4308 as required by Section 6.1.

Compliance is expected.

### 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 diesel-fired emergency IC engines will comply with the requirements of District Rule 4702 and no further discussion is required.

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

The purpose of this rule is to limit the emissions of nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), and volatile organic compounds (VOC) from internal combustion engines.

This rule applies to any internal combustion engine with a rated brake horsepower greater than 50 horsepower.

Pursuant to Section 4.2, except for the requirements of Sections 5.7 and 6.2.3, the requirements of this rule shall not apply to an internal combustion engine that meets the following condition:

- 1) An emergency standby engine as defined in Section 3.0 of this rule, and provided that it is operated with a nonresettable elapsed operating time meter. In lieu of a nonresettable time meter, the owner of an emergency engine may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO. The owner of the engine shall properly maintain and operate the time meter or alternative device in accordance with the manufacturer's instructions.

Section 3.15 defines an "Emergency Standby Engine" as an internal combustion engine which operates as a temporary replacement for primary mechanical or electrical power during an unscheduled outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the operator. An engine shall be considered to be an emergency standby engine if it is used only for the following purposes: (1) periodic maintenance, periodic readiness testing, or readiness testing during and after repair work; (2) unscheduled outages, or to supply power while maintenance is performed or repairs are made to the primary power supply; and (3) if it is limited to operate 100 hours or less per calendar year for non-emergency purposes. An engine shall not be considered to be an emergency standby engine if it is used: (1) to reduce the demand for electrical power when normal electrical power line service has not failed, or (2) to produce power for the utility electrical distribution system, or (3) in conjunction with a voluntary utility demand reduction program or interruptible power contract.

Therefore, the emergency standby IC engines involved with this project will only have to meet the requirements of Sections 5.7 and 6.2.3 of this Rule.

Section 5.7 of this Rule requires that the owner of an emergency standby engine shall comply with the requirements specified in Section 5.7.2 through Section 5.7.5 below:

- 1) Properly operate and maintain each engine as recommended by the engine manufacturer or emission control system supplier.

- 2) Monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier.
- 3) Install and operate a nonresettable elapsed operating time meter. In lieu of installing a nonresettable time meter, the owner of an engine may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO and is allowed by Permit-to-Operate or Stationary Equipment Registration condition. The owner of the engine shall properly maintain and operate the time meter or alternative device in accordance with the manufacturer's instructions.

Therefore, the following conditions will be listed on the ATCs to ensure compliance:

- {3405} 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]
- {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]
- {3403} 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]
- {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]
- {3810} 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 and 17 CCR 93115]

Section 6.2.3 requires that an owner claiming an exemption under Section 4.2 or Section 4.3 shall maintain annual operating records. This information shall be retained for at least



five years, shall be readily available, and submitted to the APCO upon request and at the end of each calendar year in a manner and form approved by the APCO. Therefore, the following conditions will be listed on the ATCs to ensure compliance:

- {3479} 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]
- {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<sub>2</sub>) shall not exceed 0.2% by volume. Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

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

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

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

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

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

Since 1.0 ppmv is ≤ 2,000 ppmv, the engines are expected to comply with Rule 4801. Therefore, the following condition (previously proposed in this engineering evaluation) will be listed on the ATC to ensure compliance:

- {3395} 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)**

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 13 California Code of Regulations (CCR), Section 2423 – Exhaust Emission Standards and Test Procedures, Off-Road Compression-Ignition Engines and Equipment (Required by Title 17 CCR, Section 93115 for New Emergency Standby Diesel IC Engines)**

Title 13 CCR, Section 2423 lists a diesel particulate emission standard of 0.15 g/bhp-hr for 2006 and later model year engines with maximum power ratings of  $\geq 751.1$  bhp. Therefore, the PM standards given in Title 13 CCR, Section 2423 are less stringent than ATCM, and thus the ATCM standards are the required standards and will be discussed in the following section.

Title 17 CCR, Section 93115, (e)(2)(A)(3)(b) stipulates that new stationary emergency standby diesel-fueled CI engines ( $> 50$  bhp) must meet the VOC + NO<sub>x</sub>, and CO 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) or the Tier 1 standards for an off-road engine if no standards have been established for an off-road engine of the same model year and maximum rated power.

The engines involved with this project are certified 2008 model engines. The following table compares the requirements of Title 13 CCR, Section 2423 to the emissions factors for the engines as given by CARB/EPA certification

Requirements of Title 13 CCR, Section 2423							
Source	Maximum Rated Power	Model Year	NO <sub>x</sub>	VOC	NO <sub>x</sub> + VOC	CO	PM
Title 13 CCR, §2423	$\geq 751.0$ bhp ( $\geq 560$ kW)	2006 and later (Tier 2)	--	--	4.8 g/bhp-hr (6.4 g/kW-hr)	2.6 g/bhp-hr (3.5 g/kW-hr)	0.15 g/bhp-hr (0.20 g/kW-hr)
Cummins QSK60-G6 NR2	2922 bhp	2008	3.88 g/bhp-hr	0.3 g/bhp-hr	4.2 g/bhp-hr	0.35 g/bhp-hr	0.09 g/bhp-hr
Meets Standard?			Yes	Yes	Yes	Yes	Yes

As presented in the table above, the proposed engines will satisfy the requirements of this section and compliance is expected.

Right of the District to Establish More Stringent Standards:

This regulation also stipulates that the District:

1. May establish more stringent diesel PM, NO<sub>x</sub> + VOC, VOC, NO<sub>x</sub>, and CO emission rate standards; and
2. May establish more stringent limits on hours of maintenance and testing on a site-specific basis; and
3. Shall determine an appropriate limit on the number of hours of operation for demonstrating compliance with other District rules and initial start-up testing

The District has not established more stringent standards at this time. Therefore, the standards previously established in this Section will be utilized.

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

#### **Emergency Operating Requirements:**

This regulation stipulates that no owner or operator shall operate any new or in-use stationary diesel-fueled compression ignition (CI) emergency standby engine, in response to the notification of an impending rotating outage, unless specific criteria are met.

This section applies to emergency standby IC engines that are permitted to operate during non-emergency conditions for the purpose of providing electrical power. However, District Rule 4702 states that emergency standby IC engines may only be operated during non-emergency conditions for the purposes of maintenance and testing. Therefore, this section does not apply and no further discussion is required.

#### **Fuel and Fuel Additive Requirements:**

This regulation also stipulates that as of January 1, 2006 an owner or operator of a new or in-use stationary diesel-fueled CI emergency standby engine shall fuel the engine with CARB Diesel Fuel.

Since the engine involved with this project is a new or in-use stationary diesel-fueled CI emergency standby engine, these fuel requirements are applicable. Therefore, the following condition (previously proposed in this engineering evaluation) will be listed on the ATC to ensure compliance:

- {3395} 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]

#### **At-School and Near-School Provisions:**

The District has verified that the engines are not located within 500 feet of a K-12 school. Therefore, conditions prohibiting non-emergency usage of the engines during school hours will not be placed on the permit.

**Recordkeeping Requirements:**

This regulation stipulates that as of January 1, 2005, each owner or operator of an emergency standby diesel-fueled CI engine shall keep a monthly log of usage that shall list and document the nature of use for each of the following:

- a. Emergency use hours of operation;
- b. Maintenance and testing hours of operation;
- c. Hours of operation for emission testing;
- d. Initial start-up hours; and
- e. If applicable, hours of operation to comply with the testing requirements of National Fire Protection Association (NFPA) 25 — "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems," 1998 edition;
- f. Hours of operation for all uses other than those specified in sections 'a' through 'd' above; and
- g. For in-use emergency standby diesel-fueled engines, the fuel used. The owner or operator shall document fuel use through the retention of fuel purchase records that account for all fuel used in the engine and all fuel purchased for use in the engine, and, at a minimum, contain the following information for each individual fuel purchase transaction:
  - I. Identification of the fuel purchased as either CARB Diesel, or an alternative diesel fuel that meets the requirements of the Verification Procedure, or an alternative fuel, or CARB Diesel fuel used with additives that meet the requirements of the Verification Procedure, or any combination of the above;
  - II. Amount of fuel purchased;
  - III. Date when the fuel was purchased;
  - IV. Signature of owner or operator or representative of owner or operator who received the fuel; and
  - V. Signature of fuel provider indicating fuel was delivered.

The engines associated with this project are new emergency standby engines. Therefore, the following conditions (previously proposed in this engineering evaluation) will be listed on the ATC to ensure compliance:

- {3479} 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]

- {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]

**PM Emissions and Hours of Operation Requirements for New Diesel Engines:**

This regulation stipulates that as of January 1, 2005, no person shall operate any new stationary emergency standby diesel-fueled CI engine that has a rated brake horsepower greater than 50, unless it meets all of the following applicable emission standards and operating requirements.

1. Emits diesel PM at a rate greater than 0.01 g/bhp-hr or less than or equal to 0.15 g/bhp-hr; or
2. Meets the current model year diesel PM standard specified in the Off-Road Compression Ignition Engine Standards for off-road engines with the same maximum rated power (Title 13 CCR, Section 2423), whichever is more stringent; and
3. Does not operate more than 50 hours per year for maintenance and testing purposes. Engine operation is not limited during emergency use and during emissions source testing to show compliance with the ATCM.

Therefore, the following conditions (previously proposed in this engineering evaluation) will be listed on the ATC to ensure compliance:

- {edited 3486} Emissions from this IC engine shall not exceed 0.15 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 13 CCR 2423 and 17 CCR 93115]
- {3810} 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 and 17 CCR 93115]

**California Environmental Quality Act (CEQA)**

The District determined that the City of Tulare (City) is the public agency having principal responsibility for approving the project, therefore establishing the City as the Lead Agency (CEQA Guidelines §15051(b)). The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381). Consistent with CEQA Guidelines §15081, a Mitigated Negative Declaration was prepared and certified by the City. The District's engineering evaluation of the project (this document) demonstrates that compliance with District rules and permit conditions would reduce Stationary Source emissions from the project to levels below the District's significance thresholds for criteria pollutants. The District has determined that no additional findings are required (CEQA Guidelines §15096(h)).

**IX. Recommendation**

Pending a successful NSR Public Noticing period and EPA 45-day COC comment period, issue Authority to Construct S-548-20-2 and '34-0 subject to the permit conditions on the attached draft Authority to Construct in Appendix G.

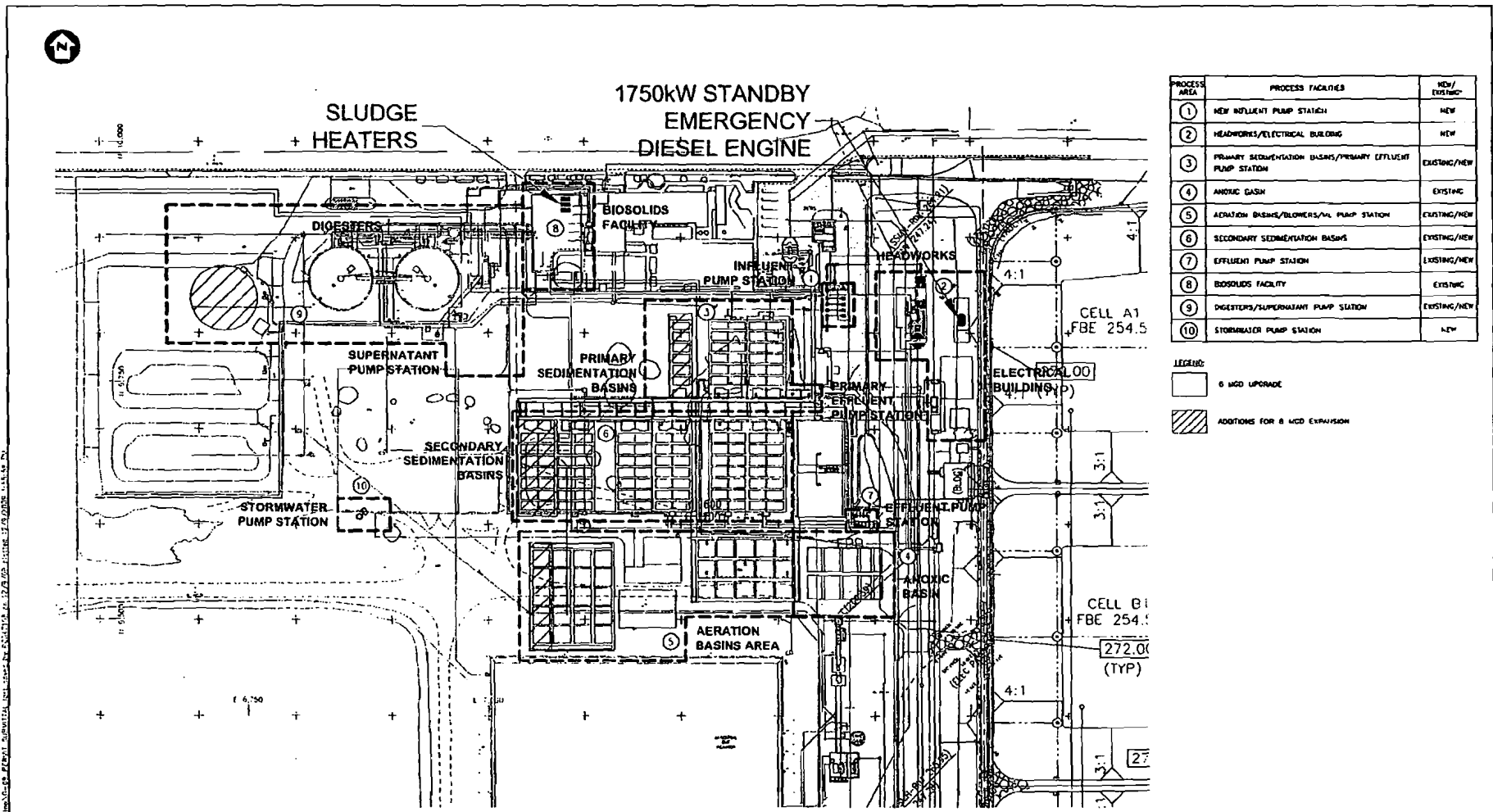
**X. Billing Information**

<b>Billing Schedule</b>			
<b>Permit Number</b>	<b>Fee Schedule</b>	<b>Fee Description</b>	<b>Fee Amount</b>
S-548-20	3020-06	Ten percolation Ponds	\$97.00
S-548-34	3020-10-F	2,922 bhp IC engine	\$693.00

**Appendixes**

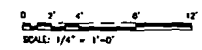
- A. Location Map and Plot Plan
- B. Existing PTO
- C. Water9 calculations
- D. QNEC Calculations
- E. BACT Guideline and BACT Analysis
- F. HRA Summary and AAQA
- G. Draft ATCs

## Appendix A Location Map and Plot Plan



PROCESS AREA	PROCESS FACILITIES	NEW/EXISTING
①	NEW EFFLUENT PUMP STATION	NEW
②	HEADWORKS/ELECTRICAL BUILDING	NEW
③	PRIMARY SEDIMENTATION BASINS/PRIMARY EFFLUENT PUMP STATION	EXISTING/NEW
④	ANOXIC BASIN	EXISTING
⑤	AERATION BASINS/BLOWERS/AIR PUMP STATION	EXISTING/NEW
⑥	SECONDARY SEDIMENTATION BASINS	EXISTING/NEW
⑦	EFFLUENT PUMP STATION	EXISTING/NEW
⑧	BIO-SOLIDS FACILITY	EXISTING
⑨	DIGESTERS/SUPERNATANT PUMP STATION	EXISTING/NEW
⑩	STORMWATER PUMP STATION	NEW

LEGEND:  
 □ 6 MGD UPGRADE  
 ▨ ADDITIONS FOR 8 MGD EXPANSION



<p>SCALE AS SHOWN</p> <p>100 WEST WALNUT STREET PASADENA, CALIFORNIA 91124 (610) 448-2000</p>	<p>PARSONS</p>	
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CITY OF TULARE, CALIFORNIA  
 DOMESTIC WASTEWATER TREATMENT PLANT EXPANSION PROJECT  
 FIGURE 3-2  
 LOCATION OF NEW EMISSION EQUIPMENT  
 280430  
 G-09



## Appendix B Existing PTO

San Joaquin Valley  
Air Pollution Control District

PERMIT UNIT: S-548-20-0

EXPIRATION DATE: 11/30/2009

EQUIPMENT DESCRIPTION:  
TEN WASTEWATER TREATMENT RETENTION/PERCOLATION PONDS

**PERMIT UNIT REQUIREMENTS**

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

These terms and conditions are part of the Facility-wide Permit to Operate.

## Appendix C Water9 Calculations

UNIT CONCENTRATION SUMMARY 02-03-2010 08:26:42

City of Tulare

Project \\South1\SHARED\PER\ENG\KlevannD\Projects\Wastewater\s0548 - Tulare wastewater plant\S0548, 10

The selected unit is 21 percolation ponds

COMPOUND NAME	Cin (PPMW)	Air fe	Removal fbio	Cost (ppmw)
BENZENE	1.097e-0	.08476	.9	1.69e-07
BROMODICHLOROMETHANE	2.921e-0	.8004	.	5.83e-05
BROMOFORM (tribromomethane)	1.712e-0	.09991	.879	3.571e-0
CHLOROFORM	3.647e-0	.13783	.837	9.255e-0
DIBROMOCHLOROMETHANE	3.034e-0	.78466	.	6.534e-0
1,4 DICHLOROBENZENE (-p)	1.729e-0	.0455	.945	1.702e-0
ETHANOL	0.001823	.02666	.948	4.601e-0
ETHYLBENZENE	1.173e-0	.04944	.94	1.258e-0
METHYL TERT-BUTYL ETHER	2.567e-0	.08248	.888	7.661e-0
TETRACHLOROETHENE	5.291e-0	.13976	.831	1.549e-0
TOLUENE	8.786e-0	.04635	.944	8.283e-0
TRICHLOROETHYLENE	1.44e-05	.11934	.857	3.361e-0
ACETALDEHYDE	4.861e-0	.36712	.564	3.341e-0
BENZOIC ACID	0.069142	.0004	.	0.069115
BIS(2-ETHYLHEXYL) PHTHALATE	0.007689	.05917	.881	4.636e-0
BUTYRIC ACID	0.039494	.01017	.	0.039092
DODECANOIC ACID (lauric acid)	0.27679	.0803	.	0.25456
UNDECANE (C11 linear)	0.002078	.84518	.	3.218e-0
XYLENE	6.508e-0	.06218	.925	8.019e-0
1 HYDROXY 2 METHYL BENZENE (o-cresol)	5.708e-0	.00028	.998	8.033e-1
ETHYLENE GLYCOL MONOBUTYL ETHER	0.02245	.00493	.	0.02234
1 HYDROXY 4 METHYLBENZENE (p-cresol)	3.768e-0	.00018	.998	5.302e-0

TOTAL ALL COMPOUNDS 2.73E-02 g/s air emissions

PEI from project 1073394

UNIT CONCENTRATION SUMMARY 04-19-2010 15:44:59

City of Tulare

Project \\South1\SHARED\PER\ENG\KlevannD\Projects\Wastewater\s0548 - Tulare wastewater plant\S0548, 11

The selected unit is 21 percolation ponds

COMPOUND NAME	Cin (PPMW)	Air fe	Removal fbio	Cost (ppmw)
BENZENE	4.719e-0	.08484	.901	6.823e-0
BROMODICHLOROMETHANE	2.921e-0	.81045	.	5.537e-0
BROMOFORM (tribromomethane)	7.792e-0	.10004	.88	1.526e-0
CHLOROFORM	1.763e-0	.13805	.838	4.202e-0
DIBROMOCHLOROMETHANE	3.028e-0	.79531	.	6.198e-0
1,4 DICHLOROBENZENE (-p)	7.208e-0	.04553	.945	6.657e-0
ETHANOL	8.66e-04	.02671	.95	2.053e-0
ETHYLBENZENE	4.916e-0	.04947	.94	4.948e-0
METHYL TERT-BUTYL ETHER	1.224e-0	.08263	.889	3.432e-0
TETRACHLOROETHENE	5.642e-0	.14002	.832	1.552e-0
TOLUENE	3.565e-0	.04638	.945	3.154e-0
TRICHLOROETHYLENE	6.498e-0	.11951	.859	1.425e-0
ACETALDEHYDE	5.183e-0	.3687	.567	3.356e-0
BENZOIC ACID	0.065109	.00042	.	0.065081
BIS(2-ETHYLHEXYL) PHTHALATE	0.005795	.05939	.884	3.289e-0
BUTYRIC ACID	0.042111	.01084	.	0.041655
DODECANOIC ACID (lauric acid)	0.28565	.08516	.	0.26133
UNDECANE (C11 linear)	0.002216	.85339	.	3.249e-0
XYLENE	2.805e-0	.06223	.926	3.244e-0
1 HYDROXY 2 METHYL BENZENE (o-cresol)	6.087e-0	.00028	.998	8.033e-1
ETHYLENE GLYCOL MONOBUTYL ETHER	0.023938	.00525	.	0.023812
1 HYDROXY 4 METHYLBENZENE (p-cresol)	1.238e-0	.00018	.998	1.634e-0

TOTAL ALL COMPOUNDS 2.77E-02 g/s air emissions

5-548-20-2  
5-1100193  
6 MGD DOM

5.27 lb  
daily

UNIT CONCENTRATION SUMMARY 04-19-2010 15:42:11

City of Tulare

Project \\South1\SHARED\PER\ENG\KlevannD\Projects\Wastewater\s0548 - Tulare wastewater plant\S0548, 11

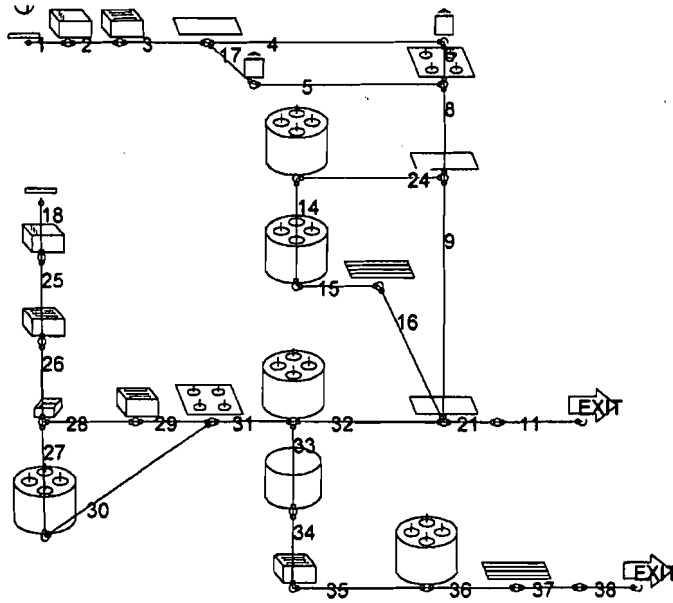
The selected unit is 21 percolation ponds

COMPOUND NAME	Cin (PPMW)	Air fe	Removal fbio	Cost (ppmw)
BENZENE	1.331e-0	.08473	.9	2.091e-0
BROMODICHLOROMETHANE	2.927e-0	.7972	.	5.935e-0
BROMOFORM (tribromomethane)	2.047e-0	.09986	.879	4.355e-0
CHLOROFORM	4.333e-0	.13776	.836	1.121e-0
DIBROMOCHLOROMETHANE	3.042e-0	.78128	.	6.652e-0
1,4 DICHLOROBENZENE (-p)	2.115e-0	.04549	.944	2.123e-0
ETHANOL	0.00215	.02665	.948	5.532e-0
ETHYLBENZENE	1.434e-0	.04943	.94	1.569e-0
METHYL TERT-BUTYL ETHER	3.03e-05	.08243	.887	9.22e-07
TETRACHLOROETHENE	5.187e-0	.13968	.83	1.548e-0
TOLUENE	1.081e-0	.04635	.944	1.039e-0
TRICHLOROETHYLENE	1.728e-0	.11928	.857	4.114e-0
ACETALDEHYDE	4.765e-0	.36662	.563	3.337e-0
BENZOIC ACID	0.070341	.00039	.	0.070314
BIS(2-ETHYLHEXYL) PHTHALATE	0.00827	.0591	.879	5.081e-0
BUTYRIC ACID	0.038716	.00997	.	0.038329
DODECANOIC ACID (lauric acid)	0.27415	.07884	.	0.25254
UNDECANE (C11 linear)	0.002038	.84255	.	3.208e-0
XYLENE	7.9e-05	.06217	.925	9.927e-0
1 HYDROXY 2 METHYL BENZENE (o-cresol)	5.596e-0	.00028	.998	8.032e-1
ETHYLENE GLYCOL MONOBUTYL ETHER	0.022008	.00483	.	0.021902
1 HYDROXY 4 METHYLBENZENE (p-cresol)	4.919e-0	.00018	.998	7.062e-0

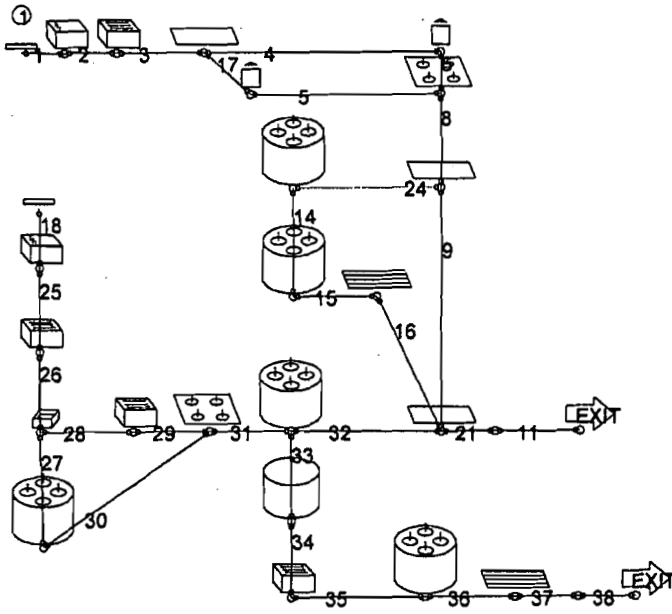
TOTAL ALL COMPOUNDS 2.71E-02 g/s air emissions

8 MG/D DOM

5.16  $\frac{1b}{day}$



No.	Name	Type	flow (l/s)
1	def.hard piped, no	hard piped, no headspace	329.
2	def.bar screen	bar screen	789.
3	Inlet DAF/Grit Sep	DAF or grit separator	329.
4	4 primary sediment	lagoon	164.5
5	def.biofilter	biofilter	164.5
6	def.biofilter	biofilter	164.5
8	3 aeration basins	aerated biotreatment	329.
9	6 2nd-ary settling	lagoon	137.
11	def.system exit st	system exit stream	1065.
14	Dom Digest 1	activated sludge	192.
15	Dom Digest 2	activated sludge	192.
16	def.landtreatment	landtreatment	192.
17	def.divert flow	divert flow	164.5
18	default	hard piped, no headspace	789.
21	percolation ponds	lagoon	1065.
24	def.solids removal	solids removal stream	
25	Headworks #2	bar screen	789.
26	Headworks #2	DAF or grit separator	789.
27	default open sump	open sump	176.
28	def.divert flow	divert flow	613.



No.	Name	Type	flow (l/s)
29	FOG DAF	DAF or grit separator	613.
30	Bulk Volume Fermen	activated sludge	
31	Pre-treat Lagoons	aerated biotreatment	1789.
32	Sequencing Batch R	activated sludge	736.
33	def.divert flow	divert flow	53.
34	def.storage tank	storage tank	53.
35	Sludge DAF Thicken	DAF or grit separator	
36	Sludge Digesters	activated sludge	53.
37	Sludge Drying	landtreatment	53.
38	def.system exit st	system exit stream	53.



## Appendix D QNEC Calculations

**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 - BE, where:

- QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.
- PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.
- BE = Baseline Emissions (per Rule 2201) for each emissions unit, lb/qtr.

Using the values in Sections VII.C.2 and VII.C.6 in the evaluation above, PE2<sub>quarterly</sub> and BE<sub>quarterly</sub> can be calculated as follows:

S-548-34 Quarterly Post Project Emissions		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NO <sub>x</sub>	1250	312.5
SO <sub>x</sub>	2	0.5
PM <sub>10</sub>	29	7.3
CO	113	28.3
VOC	93	23.3

For S-548-20:

Quarterly Baseline Emissions		
Pollutant	BE Total (lb/yr)	Quarterly BE (lb/qtr)
NO <sub>x</sub>	0	0.0
SO <sub>x</sub>	0	0.0
PM <sub>10</sub>	0	0.0
CO	0	0.0
VOC	1898	474.5

QNEC			
Pollutant	Quarterly PE2 (lb/qtr)	Quarterly BE (lb/qtr)	QNEC (lb/qtr)
NO <sub>x</sub>	0	0	0.0
SO <sub>x</sub>	0	0	0.0
PM <sub>10</sub>	0	0	0.0
CO	0	0	0.0
VOC	483.8	474.5	9.3

## Appendix E BACT Guidelines 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**

<b>Pollutant</b>	<b>Achieved In Practice or in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
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<sub>x</sub>, CO, VOC, and PM10 Emissions:

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

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

Pollutant	Achieved in Practice
CO, NO <sub>x</sub> , VOC	Latest EPA Tier Certification level for applicable horsepower range
PM10	0.15 g/hp-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent. (ATCM)

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

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

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

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

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

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

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

#### e. Step 5 - Select BACT

BACT for CO, NO<sub>x</sub>, VOC emissions from this emergency standby diesel IC engine is the latest EPA Tier Certification level for the applicable horsepower range. The applicant has proposed to install a Tier 2 certified 2,922 bhp emergency standby diesel IC engine, which is the latest Tier Certification for an engine this size as shown in the attached Tier Certification table at the end of this Appendix.

BACT for PM10 is 0.15 g/hp-hr, or the latest EPA Tier Certification level for the applicable horsepower range, whichever is more stringent. The applicant is proposing an engine that meets this requirement.

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

Power Rating (hp)	Tier	Model Year	NO <sub>x</sub>	HC	NMHC +NO <sub>x</sub>	CO	PM
50 ≤ hp < 75	1	1998 – 2003	6.9	-	-	-	-
	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 F HRA Summary and AAQA

# San Joaquin Valley Air Pollution Control District Risk Management Review

To: Dan Klevann – Permit Services  
 From: Yu Vu – Technical Services  
 Date: May 4, 2010  
 Facility Name: Tulare City Wastewater  
 Location: 1875 S. West St., Tulare, CA 93274  
 Application #(s): S-548-20-2 and -34-0  
 Project #: S-1100193

## A. RMR SUMMARY

RMR Summary				
Categories	Wastewater Plant (Unit 20-2)	Diesel ICE (Unit 34-0)	Project Totals	Facility Totals
<b>Prioritization Score</b>	0.00	NA <sup>1</sup>	>1.0	>1.0
<b>Acute Hazard Index</b>	0.00	N/A <sup>2</sup>	0.00	0.00
<b>Chronic Hazard Index</b>	0.00	N/A <sup>2</sup>	0.00	0.00
<b>Maximum Individual Cancer Risk (10<sup>-6</sup>)</b>	0.03	0.25	0.27	2.45
<b>T-BACT Required?</b>	No	No		
<b>Special Permit Conditions?</b>	No	No		

- 1 Prioritization for this unit was not conducted since it has been determined that all diesel-fired IC engines will result in a prioritization score greater than 1.0.
- 2 Acute and Chronic Hazard Indices were not calculated since there is not risk factor or the risk factor is so low that it has been determined to be insignificant for this type of unit.

### Proposed Permit Conditions

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

#### Unit # 20-2

No special conditions are required.

#### Unit # 34-0

1. 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]
2. 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]
3. 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]



4. 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 and 17 CCR 93115]

**B. RMR REPORT**

**I. Project Description**

Technical Services received a request on April 20, 2010, to perform a Risk Management Review for a proposed modification to a wastewater plant. The applicant is proposing to increase the amount of waste water handled by the facility by up to 8 million gallons per day (MGD). The applicant is also proposing to install a 2,922 bhp diesel-fired emergency IC engine (Unit -34-0).

Technical Services has also been asked to perform an Ambient Air Quality Analysis (AAQA) for this project. Since unit S-578-20-2 only involves an increase in VOCs the AAQA will only include the 2,922 bhp diesel-fired emergency IC engine (Unit -34-0).

**II. Analysis**

Technical Services performed a prioritization using the District's HEARTs database. Since the total facility prioritization score was greater than one, a refined health risk assessment was required. Emissions calculated using the District's DICE database and source test results provided by the engineer were input into the HEARTs database. The AERMOD model was used, with the parameters outlined below and meteorological data for 2005-2008 from Visalia to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the Hot Spots Analysis and Reporting Program (HARP) risk assessment module to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

<b>Analysis Parameters Unit 20-2</b>			
<b>Source Type</b>	<b>Area</b>	<b>Location Type</b>	<b>Urban</b>
<b>X-Length (m)</b>	304.8	<b>Closest Receptor (m)</b>	883.92
<b>Y-Length (m)</b>	304.8	<b>Type of Receptor</b>	<b>Business</b>
<b>Release Height (m)</b>	1.83	<b>Pollutant Type</b>	<b>VOC</b>
		<b>Emission Rate</b>	1.076 E-05 lb/hr

Analysis Parameters Unit 34-0			
Source Type	Point	Location Type	Rural
Stack Height (m)	5.79	Closest Receptor (m)	883.92
Stack Diameter. (m)	0.203	Type of Receptor	Business
Stack Exit Velocity (m/s)	196.5	Max Hours per Year	50
Stack Exit Temp. (°K)	742.6	Fuel Type	Diesel
Engine Rating (bhp)	2,922		

Technical Services also performed modeling for criteria pollutants CO, NO<sub>x</sub>, SO<sub>x</sub> and PM<sub>10</sub>. The emission rates used for criteria pollutant modeling were 2.25 lb/hr CO, 24.99 lb/hr NO<sub>x</sub>, 0.03 lb/hr SO<sub>x</sub>, and 0.57 lb/hr PM<sub>10</sub>.

The results from the Criteria Pollutant Modeling are as follows:

#### Criteria Pollutant Modeling Results\*

Diesel ICE	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO <sub>x</sub>	Pass <sup>2</sup>	X	X	X	Pass
SO <sub>x</sub>	Pass	Pass	X	Pass	Pass
PM <sub>10</sub>	X	X	X	Pass	Pass

\*Results were taken from the attached PSD/ NO<sub>2</sub> NAAQS spreadsheet.

<sup>1</sup>The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

<sup>2</sup>The project passes the 1-hour NO<sub>x</sub> standard when run with a Tier II approach.

### III. Conclusion

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

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

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

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

#### Attachments:

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Toxic emissions summary
- D. Prioritization score
- E. AAQA Summary

**Appendix G  
Draft ATC's**

San Joaquin Valley  
Air Pollution Control District

## AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-548-20-2

LEGAL OWNER OR OPERATOR: TULARE CITY WASTEWATER PLANT  
MAILING ADDRESS: 1875 S WEST ST  
TULARE, CA 93274

LOCATION: 1875 S WEST ST  
TULARE, CA 93274

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF TEN WASTEWATER TREATMENT RETENTION/PERCOLATION PONDS: INCREASE TOTAL DOMESTIC WASTEWATER THROUGHPUT UP TO 8 MGD

## 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. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. Daily average domestic wastewater throughput shall not exceed 8 million gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
5. VOC emissions shall not exceed 5.3 lb VOC per day. [District Rule 2201] Federally Enforceable Through Title V Permit

**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

DAVID WARNER, Director of Permit Services  
S-548-20-2: May 24 2010 4:27PM - KLEVANND - Joint Inspection NOT Required

Southern Regional Office • 34946 Flyover Court • Bakersfield, CA 93308 • (661) 392-5500 • Fax (661) 392-5585

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

PERMIT NO: S-548-34-0

LEGAL OWNER OR OPERATOR: TULARE CITY WASTEWATER PLANT  
MAILING ADDRESS: 1875 S WEST ST  
TULARE, CA 93274

LOCATION: 1875 S WEST ST  
TULARE, CA 93274

EQUIPMENT DESCRIPTION:  
2922 BHP CUMMINS MODEL QSK60-G6 NR2 TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE  
POWERING 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. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
5. {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]
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. {3395} 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]
8. {3403} 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]

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

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DAVID WARNER, Director of Permit Services  
S-548-34-0: May 18 2010 3:17PM - KLEVANNND Joint Inspection NOT Required

9. Emissions from this IC engine shall not exceed any of the following limits: 3.88 g-NO<sub>x</sub>/bhp-hr, 0.35 g-CO/bhp-hr, or 0.29 g-VOC/bhp-hr. [District Rule 2201 and 13 CCR 2423 and 17 CCR 93115]
10. Emissions from this IC engine shall not exceed 0.09 g-PM<sub>10</sub>/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 13 CCR 2423 and 17 CCR 93115]
11. {3405} 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. {3810} 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 and 17 CCR 93115]
14. {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]
15. {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]
16. {3479} 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]
17. {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]

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