

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>ENGINEERING AND COMPLIANCE DIVISION</b>  <b>PERMIT APPLICATION EVALUATION AND CALCULATIONS</b>	PAGES 4	PAGE 1
	APPL NO 518818 & 518819	DATE 3/29/2011
	PROCESSED BY AS08	CHECKED BY

**Permit to Construct (Administrative Change)**

**Applicant** Eastern Municipal Water District (EMWD) –Temecula Valley Regional Water Reclamation Facility (TVRWRF)

**Mailing Address** 2270 Trumble Road,  
P.O. Box 8300  
Perris, CA 92572

**Equipment Location** 42565 Avenida Alvarado  
Temecula, CA 92590

**Equipment Description**  
**APPLICATION 518818, FACILITY ID 001703**

INTERNAL COMBUSTION ENGINE, NON-EMERGENCY, WAUKESHA, MODEL H24 GLD, SPARK IGNITION, FOUR CYCLE, 8-CYLINDER, 530 BHP, LEAN BURN, TURBOCHARGED, AFTERCOOLED, FUELED WITH DIGESTER GAS, A DIGESTER GAS/ NATURAL GAS BLEND, OR A NATURAL GAS/ AIR BLEND, WITH AN EXHAUST HEAT RECOVERY SYSTEM, AND AN AIR-TO-FUEL RATIO CONTROLLER, ALTRONIC, MODEL EPC-150, DRIVING AN AERATION BLOWER.

**APPLICATION 518819, FACILITY ID 001703**

INTERNAL COMBUSTION ENGINE, NON-EMERGENCY, WAUKESHA, MODEL H24 GLD, SPARK IGNITION, FOUR CYCLE, 8-CYLINDER, 530 BHP, LEAN BURN, TURBOCHARGED, AFTERCOOLED, FUELED WITH DIGESTER GAS, A DIGESTER GAS/ NATURAL GAS BLEND, OR A NATURAL GAS/ AIR BLEND, WITH AN EXHAUST HEAT RECOVERY SYSTEM, AND AN AIR-TO-FUEL RATIO CONTROLLER, ALTRONIC, MODEL EPC-150, DRIVING AN AERATION BLOWER.

**Background/Process Description**

The above applications were submitted on February 11, 2011 as an Administrative Change application type to replace the air to fuel ratio controls for the two identical non-emergency digester gas fueled engines used to drive 8000 cfm aeration blowers. The existing permits to construct are A/N R-480859 and R-480864 and the existing permits to operate are A/N 485849, Permit G5390 and A/N 485850, Permit G5391, respectfully. Permits to construct A/N R-480859 and R-480864 will be superseded and replaced with permit to construct A/Ns 518818 and 518819, respectively.

The facility is a municipal water district which accepts and treats municipal sewage at Eastern Municipal Water District-Temecula Valley Regional Water Reclamation Facility (EMWD-TVRWRF). There is no change of emissions for these applications. For emission calculations please see previous evaluations. These engines (along with another permitted natural gas ICE equipped with non-selective catalytic reduction (NSCR)) are used as the only source of air to the aeration tanks at the facility. The current wastewater influent throughput for the facility is 18 million gallons per day (MGD). There is no school within 1000 feet of emission source. No violations have been issued and no complaints have been received against the facility in the past 4 years.

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**Rules Evaluation**

- Rule 212: Rule 212 (c)(1)- There is no school within 1000 feet of the facility.  
Rule 212 (c)(2)- There is no increase of emissions.  
Rule 212(c)(3)(A)- There is no increase of emissions.  
**Public Notice is not required.**
- Rule 401: Visible Emissions  
No violations are expected, limits are listed under Rule 401(b)(1).
- Rule 402: Nuisance  
Nuisance is not expected with proper operation, monitoring and maintenance. Based on previous operation of the facility for the last two years, compliance is expected. No complaints have been received in the last four years against the facility.
- Rule 404: Particulate Matter  
There is no increase of emissions. Compliance is expected.
- Rule 407: Liquid and Gaseous Air Contaminants  
Rule 407 (b)- Provisions of this rule shall not apply to emissions from stationary ICEs.
- Rule 409: Combustion Contaminants  
Provisions of this rule shall not apply to emissions from ICEs.
- Rule 431.1: Sulfur Content of Gaseous Fuels  
Rule 431.1(c)(1)- Natural gas contains  $\leq 16$  ppmv sulfur compounds as H<sub>2</sub>S.  
Rule 431.1(g)(8)- Any facility which emits less than 5 pounds per day total sulfur compounds, calculated as H<sub>2</sub>S from the burning of gaseous fuels other than natural gas (not applicable to (c)(1)).  
Compliance is expected.
- Rule 53A: Riverside County – Specific Contaminants (Contained in Addendum to Reg IV)  
There is no increase of emissions. Compliance is expected.
- Reg IX: Standards of Performance for New Stationary Sources  
Part 60, Chapter I, Title 40 of Code of Federal Regulations, Subpart JJJJ Standards of Performance for Stationary Spark Ignition Internal Combustion Engines  
60.4230-Applicability: not applicable.  
60.4230(a)- Construction for these ICEs did not commence nor was the ICE modified or reconstructed after June 12, 2006.  
60.4230(b)-These ICEs is not being tested at an engine test cell/stand.  
60.4230(f)- These ICEs is not a temporary unit.
- Reg IX: Part 63, Chapter I, Title 40 of Code of Federal Regulations, Subpart ZZZZ- National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

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63.6585- Applicability: Applicable. Engines are stationary RICE at an area source of HAP emissions.

63.6595(a)(1)- Existing stationary SI RICE located at an area source of HAP shall comply with the applicable emission limitations and operating limitations no later than October 19, 2013.

63.6660(a)- Your records must be in a form suitable and readily available for expeditious review according to 63.10(b)(1).

63.6660(b)- Keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report or record.

63.6660(c)- Keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of the occurrence, measurement, maintenance, corrective action, report, or record.

Compliance with this Regulation is expected.

Rule 1110.2: Emissions From Gaseous and Liquid-Fueled Engines

Rule 1110.2(d)(1)(B)- Stationary engines shall not exceed concentration limits effective July 1, 2012: NOx 11 ppmvd 15% O<sub>2</sub>, VOC 30 ppmvd 15% O<sub>2</sub>, CO 250 ppmvd 15% O<sub>2</sub>.

Rule 1110.2(d)(1)(E)-Engine without Rule 218 approved CEMS shall equip and maintain engine w/ air-to-fuel ratio controller with an oxygen sensor and feedback control, or equivalent technology approved by the Executive Officer, CARB and EPA. AFRC is equipped on the engines.

Rule 1110.2(e)(3)(B)- CEMS is not required, see Rule 1110.2(f)(1)(A)(ii)(III).

Rule 1110.2(e)(4)- Stationary Engine Inspection and Monitoring (I&M) Plans: I&M plan application has been submitted. Determination has not yet been made for this application.

Rule 1110.2(f)(1)(A)(ii)(III)- CEMS is not required for these engines.

Rule 1110.2(f)(1)(B)- Maintain operational non-resettable totalizing time meter to determine engine elapsed operating time.

Rule 1110.2(f)(1)(C)(i)-Effective August 1, 2008 shall conduct source test for NO<sub>x</sub>, VOC as carbon, and CO (ppmvd, 15% O<sub>2</sub>) every two years. Or every three years if engine operated less than 2000 hours since last test. If engine has not operated within 3 months of required source test date, source test shall be conducted when operation resumes for 7 consecutive days or 15 cumulative days.

Rule 1110.2(f)(1)(D)-I&M Plan application has been submitted. Determination has not yet been made for this application.

Rule 1110.2(f)(1)(E)- Maintain a monthly engine operating log that includes: (i) Total hours of operation, (ii) Types of liquid and/or type of gaseous fuel, (iii) fuel consumption (cubic feet of gas and gallons of liquid), and (iv) Cumulative hours of operation since the last source test required in (f)(1)(C).

Rule 1110.2(f)(3)- All data, logs, test reports and other information required by this rule shall be maintained for at least five years and made available for inspection.

Compliance with Rule 1110.2 is expected.

Rule 1147 NOx Reductions From Miscellaneous Sources

Rule 1147(a)- Applicability: not applicable to internal combustion engines subject to District Rule 1110.2.

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- Reg XIII: Rule 1303(a)- There is no increase of emissions, BACT is not required.  
Rule 1303(b)(1)- Modeling for VOC and SO<sub>x</sub> is not required (1303 Appendix A). NO<sub>x</sub>, CO and PM<sub>10</sub> are less than the allowable emissions in Table A-1 based on previous evaluation, no further analysis is required (1301 Appendix A).  
Rule 1303(b)(2)- There is no increase of emissions for these engines. Although, since the facility is an essential public service, any required offsets shall be provided through priority reserve.  
Compliance with Regulation XIII is expected.
- Rule 1401: Toxic Air Contaminants  
Rule 1401(d)(1)(A)- MICR less than  $1.0 \times 10^{-6}$  based on previous evaluation.  
Rule 1401(d)(1)(C)- Cancer burden is less than 0.5 based on previous evaluation.  
Rule 1401(d)(2) and Rule 1401(d)(3)- HIC and HIA values are estimated to be less than 1 respectively based on previous evaluation.  
Compliance is expected
- Rule 1401.1: Rule 1401.1(b)- Equipment is exempt since it is located at an existing facility.
- Reg. XXX: The modification of three ICEs to replace the catalytic converter (A/N 518817) to comply with future Rule 1110.2 requirements and replace the air to fuel ratio controller (A/Ns 518818 & 518819) is considered a Title V Minor permit revision under Rule 3000(b)(12), since there is no emission increase and the modification of the equipment does not result in new or additional NSPS or NESHAP requirements and will be subject to an EPA review (Rule 3003 (j)). A public notice is not required.  
Compliance is expected.

### **Conclusions & Recommendations**

The equipment is in compliance with the Rules and Regulations of the SCAQMD. A Permit to Construct is recommended for applications 518818 and 518819. For Permit Conditions please see Sample Permit. A revised Title V permit is recommended after EPA review.