

FACILITY PERMIT TO OPERATE EASTERN MUNICIPAL WATER DISTRICT

PERMIT TO CONSTRUCT/OPERATE

Permit No. TBD
A/N 541131

Equipment Description:

INTERNAL COMBUSTION ENGINE, MTU ONSITE ENERGY/MTU DETROIT DIESEL, MODEL 16V2000G85 TB/TD (R1638A37), FOUR-STROKE CYCLE, 16 CYLINDER, 1495 BHP, DIESEL FIRED, TURBOCHARGED, WITH DIESEL PARTICULATE FILTER, RYPOS, INC., MODEL HDPF/C, DRIVING AN EMERGENCY ELECTRICAL GENERATOR.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED, UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITIONS AT ALL TIMES.
[RULE 204]
3. THIS ENGINE SHALL NOT BE OPERATED UNLESS ITS EXHAUST IS VENTED TO THE DIESEL PARTICULATE FILTER SYSTEM WHICH IS IN FULL OPERATION AND WHICH IS IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 1303-LAER/BACT]
4. THIS ENGINE SHALL NOT BE OPERATED MORE THAN A TOTAL OF 200 HOURS IN ANY ONE YEAR, WHICH INCLUDES NO MORE THAN 50 HOURS IN ANY ONE YEAR FOR MAINTENANCE AND PERFORMANCE TESTING, AND NO MORE THAN 24 HOURS IN ANY ONE MONTH FOR MAINTENANCE AND TESTING.
[RULE 1110.2, RULE 1303-BACT, RULE 1304(a) (4)-MODELING AND OFFSET EXEMPTIONS, RULE 1470]
5. OPERATION BEYOND THE 50 HOURS PER YEAR ALLOTTED FOR ENGINE MAINTENANCE AND TESTING SHALL BE ALLOWED ONLY IN THE EVENT OF A LOSS OF GRID POWER OR UP TO 30 MINUTES PRIOR TO A ROTATING OUTAGE, PROVIDED THAT THE UTILITY DISTRIBUTION COMPANY HAS ORDERED ROTATING OUTAGES IN THE CONTROL AREA WHERE THE ENGINE IS LOCATED OR HAS INDICATED THAT IT EXPECTS TO ISSUE SUCH AN ORDER AT A CERTAIN TIME, AND THE ENGINE IS LOCATED IN A UTILITY SERVICE BLOCK THAT IS SUBJECT TO THE ROTATING OUTAGE. ENGINE OPERATION SHALL BE TERMINATED IMMEDIATELY AFTER THE UTILITY DISTRIBUTION COMPANY ADVISES THAT A ROTATING OUTAGE IS NO LONGER IMMINENT OR IN EFFECT.
[RULE 1303- BACT, RULE 1470]

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6. THIS ENGINE SHALL NOT BE USED AS PART OF AN INTERRUPTIBLE SERVICE CONTRACT IN WHICH A FACILITY RECEIVES A PAYMENT OR REDUCED RATES IN RETURN FOR REDUCING ELECTRIC LOAD ON THE GRID WHEN REQUESTED TO DO SO BY THE UTILITY OR THE GRID OPERATOR.
[RULE 1303-BACT, RULE 1470]
7. AN OPERATIONAL NON-RESETTABLE ELAPSED TIME METER SHALL BE INSTALLED AND MAINTAINED TO INDICATE THE ENGINE ELAPSED OPERATING TIME.
[RULE 1110.2; RULE 1303-BACT, 1304(a) (4)-MODELING AND OFFSET EXEMPTIONS, RULE 1470, 40CFR60 Subpart III]
8. AFTER EVERY 1,000 HOURS OF ENGINE OPERATION, THE OPERATOR SHALL INSPECT THE INTEGRITY OF THE FILTER AND, IF NECESSARY, CLEAN IT.
[RULE 204]
9. AN ENGINE OPERATING LOG SHALL BE MAINTAINED WHICH ON A MONTHLY BASIS SHALL LIST ALL ENGINE OPERATIONS IN EACH OF THE FOLLOWING AREAS:
 - A. EMERGENCY USE HOURS OF OPERATION.
 - B. MAINTENANCE AND TESTING HOURS.
 - C. HOURS OF OPERATION FOR DEMONSTRATING COMPLIANCE.
 - D. INITIAL START-UP HOURS.
 - E. OTHER OPERATING HOURS (DESCRIBE THE REASON FOR OPERATION)

IN ADDITION, EACH TIME THE ENGINE IS STARTED MANUALLY, THE LOG SHALL INCLUDE THE DATE OF OPERATION AND THE TIMER READING IN HOURS AT THE BEGINNING AND END OF OPERATION. THE LOG SHALL BE KEPT FOR A MINIMUM OF FIVE CALENDAR YEARS AND SHALL BE MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST. THE TOTAL HOURS OF OPERATION FOR THE PREVIOUS CALENDAR YEAR SHALL BE RECORDED SOMETIME DURING THE FIRST 15 DAYS OF JANUARY OF EACH YEAR.
[RULE 1110.2, RULE 1303-BACT, 1304(a) (4)-MODELING AND OFFSET EXEMPTIONS, RULE 1470, 40CFR60 Subpart III]

10. THE SULFUR CONTENT OF DIESEL FUEL SUPPLIED TO THIS ENGINE SHALL NOT EXCEED 15 PPM (0.0015%) BY WEIGHT.
[RULE 431.2, RULE 1470, 40CFR60 Subpart III]
11. THE OWNER/OPERATOR SHALL DEMONSTRATE COMPLIANCE TO THE EXECUTIVE OFFICER'S SATISFACTION BY AT LEAST ONE OF THE FOLLOWING:
 - A. THIS ENGINE SHALL BE EQUIPPED WITH A CARB LEVEL 3 VERIFIED DIESEL PARTICULATE FILTER FOR THE MAKE AND MODEL OF THIS ENGINE AND THE OWNER OR OPERATOR SHALL RETAIN THE CARB ISSUED EXECUTIVE ORDER ON SITE AND MAKE IT AVAILABLE TO SCAQMD PERSONNEL UPON REQUEST AND FOLLOW THE CARB ISSUED EXECUTIVE ORDER.
 - B. CONDUCT A SOURCE TEST OF THIS EQUIPMENT NO LATER THAN 180 DAYS AFTER INSTALLATION TO DEMONSTRATE COMPLIANCE WITH 85% PM CONTROL EFFICIENCY AND TO MEET THE FOLLOWING REQUIREMENTS:

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1. A TEST PROTOCOL SHALL BE SUBMITTED TO THE AQMD, REFINERY AND WASTE MANAGEMENT TEAM, NOT LATER THAN 30 DAYS BEFORE THE PROPOSED TEST DATE AND SHALL BE APPROVED BY AQMD BEFORE THE TEST COMMENCES.
 2. THE TEST SHALL BE PERFORMED BY A TESTING LABORATORY CERTIFIED TO MEET THE CRITERIA IN AQMD RULE 304 (NO CONFLICT OF INTEREST).
 3. THE AQMD ENGINEER SHALL BE NOTIFIED OF THE DATE AND TIME OF THE TEST AT LEAST 10 DAYS PRIOR TO THE TEST, OR WITHIN A TIME PERIOD AGREED UPON BY THE AQMD ENGINEER.
 4. SAMPLING FACILITIES SHALL COMPLY WITH AQMD "GUIDELINES FOR CONSTRUCTION OF SAMPLING AND TESTING FACILITIES" PURSUANT TO RULE 217.
- C. THIS ENGINE SHALL BE EQUIPPED WITH A LEVEL 3 VERIFIED DIESEL EMISSION CONTROL STRATEGY IN COMBINATION WITH A CERTIFIED CI ENGINE THAT MEETS A 0.15 G/BHP-HR OR LESS PM EMISSION STANDARD, OR,
- AN ALTERNATIVE DIESEL PM CONTROL METHOD THAT IS EQUAL TO OR MORE EFFECTIVE THAN A LEVEL 3 VERIFIED DIESEL EMISSION CONTROL STRATEGY IN COMBINATION WITH A CERTIFIED CI ENGINE THAT MEETS A 0.15 G/BHP-HR OR LESS PM EMISSION STANDARD, AND IS APPROVED FOR USE BY THE EXECUTIVE OFFICER.
[RULE 204]
12. A BACK PRESSURE MONITOR SHALL BE INSTALLED AND MAINTAINED ON THE DIESEL PARTICULATE FILTER (DPF) TO INDICATE THE BACKPRESSURE OF THE DPF.
[RULE 204]
 13. OWNER OR OPERATOR SHALL KEEP RECORDS OF ANY CORRECTIVE ACTION TAKEN AFTER THE BACKPRESSURE MONITOR HAS NOTIFIED THE OWNER OR OPERATOR THAT THE HIGH BACKPRESSURE LIMIT OF THE ENGINE IS APPROACHED.
[RULE 204, 40CFR60 Subpart III]
 14. THIS ENGINE SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF RULE 431.2, RULE 1470, 40CFR60 SUBPART III, AND 40CFR63 SUBPART ZZZZ.
[RULE 431.2, RULE 1470, 40CFR60 Subpart III, 40CFR63SUBPART ZZZZ]

Emissions and Requirements:

15. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS
PM: 0.15 gm/bhp-hr, 40CFR60 Subpart III
PM: 0.0225 gm/bhp-hr, RULE 1303-LAER/BACT
NOx +NMHC: 4.8 g/bhp-hr, RULE 1303-LAER/BACT, 40CFR60 Subpart III
CO: 2.6 g/bhp-hr, RULE 1303-LAER/BACT, 40CFR60 Subpart III

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A/N 534092
Granted: TBD

Equipment Description:

ALTERATION OF:

INTERNAL COMBUSTION ENGINE, CATERPILLAR, MODEL NO. G3512 SITA SCAC, TURBOCHARGED, AFTERCOOLED, 814 BHP, RICH-BURN, NATURAL GAS FIRED, WITH A DCL CATALYST, MODEL NO. DLC 2-DC74-10, AND AN AIR/FUEL RATIO CONTROLLER, ALTRONIC EPC-100E, DRIVING A WATER PUMP.

BY ADDITION OF:

SPARK IGNITION
12 CYLINDERS
MIRATECH NON-SELECTIVE CATALYTIC CONVERTER, MODEL SP-IQ2SX3-26-10-EC2

BY REMOVAL OF:

DCL CATALYST, MODEL NO. DLC 2-DC74-10

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
3. THIS ENGINE SHALL NOT BE OPERATED UNLESS ITS EXHAUST IS VENTED TO AN AIR POLLUTION CONTROL DEVICE, WHICH IS IN FULL OPERATION AND WHICH IS IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]
4. THIS ENGINE SHALL ONLY BE FIRED ON NATURAL GAS.
[RULE 204, RULE 1110.2]
5. THIS EQUIPMENT SHALL BE OPERATED IN COMPLIANCE WITH ALL APPLICABLE PROVISIONS OF RULE 1110.2, RULE 431.1, AND 40 CFR 63 SUBPART ZZZZ.
[RULE 1110.2, RULE 431.1, 40CFR63 SUBPART ZZZZ]

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6. THE IGNITION TIMING OF THIS ENGINE SHALL BE INSPECTED, ADJUSTED AND CERTIFIED AT A MINIMUM ONCE EVERY THREE YEARS OF OPERATION. INSPECTIONS, ADJUSTMENTS AND CERTIFICATIONS SHALL BE PERFORMED BY A QUALIFIED MECHANIC AND ACCORDING TO THE ENGINE MANUFACTURER'S PROCEDURES.
[RULE 204]
7. THE CATALYST IN THE CONVERTER SHALL BE MAINTAINED IN GOOD WORKING CONDITION. THE OPERATOR SHALL MAINTAIN RECORDS OF CATALYST CLEANING PERIODS AND REPLACEMENT FREQUENCY.
[RULE 1303]
8. A DIFFERENTIAL PRESSURE MEASURING DEVICE SHALL BE INSTALLED TO MEASURE THE PRESSURE DROP ACROSS THE CATALYST. IF THE PRESSURE DROP EXCEEDS 2 INCHES OF WATER COLUMN (W.C.), AS COMPARED TO THE PRESSURE MEASURED AFTER THE MOST RECENT CLEANING, THE CATALYST SHALL BE CLEANED ACCORDING TO THE PROCEDURE RECOMMENDED BY THE MANUFACTURER. THE TOTAL PRESSURE DROP SHALL NOT EXCEED 7 INCHES W.C.
[RULE 204, RULE 1110.2, RULE 1303]
9. A HIGH TEMPERATURE SHUT-DOWN MECHANISM SHALL BE INSTALLED AT THE OUTLET PORT OF THE CONVERTER AND SET TO 1350 DEGREES FAHRENHEIT OR LESS.
[RULE 1303]
10. WHENEVER THE ENGINE IS OPERATING, THE TEMPERATURE AT THE INLET OF THE CATALYTIC OXIDIZER SHALL BE MAINTAINED BETWEEN 600 DEGREES FAHRENHEIT AND 1250 DEGREES FAHRENHEIT, EXCEPT DURING START-UP OR SHUT-DOWN OPERATION WHICH DOES NOT EXCEED 30 MINUTES PER EVENT.
[RULE 1303]
11. THE OPERATOR SHALL MAINTAIN AND IMPLEMENT AN INSPECTION AND MONITORING (I&M) PLAN, BASED ON EQUIPMENT AS DESCRIBED IN THIS PERMIT IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF RULE 1110.2(f)(1)(D).
[RULE 1110.2]
12. A NON-RESETTABLE OPERATIONAL TOTALIZING FUEL METER SHALL BE INSTALLED AND MAINTAINED TO INDICATE THE FUEL USAGE, IN CUBIC FEET, IN THE FUEL SUPPLY LINE TO THE ENGINE.
[RULE 1110.2]
13. A NON-RESETTABLE OPERATIONAL TOTALIZING TIME METER SHALL BE INSTALLED AND MAINTAINED TO INDICATE, IN CUMULATIVE HOURS, THE ENGINE ELAPSED OPERATING TIME.
[RULE 1110.2]

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14. AN ENGINE OPERATING LOG SHALL BE MAINTAINED WHICH ON A MONTHLY BASIS SHALL LIST ALL ENGINE OPERATIONS IN EACH OF THE FOLLOWING AREAS:
- A. TOTAL HOURS OF OPERATION.
 - B. THE NUMBER OF HOURS THE ENGINE IS OPERATED ON SPECIFIC FUEL OR FUEL BLENDS USED AND THE FUEL USED.
 - C. FUEL CONSUMPTION OF EACH FUEL TYPE.
 - D. CUMULATIVE HOURS OF OPERATION SINCE THE LAST SOURCE TEST.
- [RULE 204, RULE 1110.2]
15. THE ENGINE SHALL OPERATE BETWEEN 1044 AND 1276 RPM, EXCEPT DURING START-UP OR SHUT-DOWN OPERATION WHICH DOES NOT EXCEED 30 MINUTES, PER EVENT.
- [RULE 1110.2]
16. TESTING SHALL BE CONDUCTED AT THE OUTLET OF THE ENGINE AT LEAST ONCE EVERY TWO YEARS, OR EVERY 8,760 OPERATING HOURS, WHICHEVER OCCURS FIRST. THE SOURCE TEST FREQUENCY MAY BE REDUCED TO ONCE EVERY THREE YEARS IF THE ENGINE HAS OPERATED LESS THAN 2,000 HOURS SINCE THE LAST SOURCE TEST. IF THE ENGINE HAS NOT BEEN OPERATED WITHIN THREE MONTHS OF THE DATE A SOURCE TEST IS REQUIRED, THE SOURCE TEST SHALL BE CONDUCTED WHEN THE ENGINE RESUMES OPERATION FOR A PERIOD LONGER THAN EITHER SEVEN CONSECUTIVE DAYS OR 15 CUMULATIVE DAYS OF OPERATION. THE RESULTS OF THESE TESTS SHALL BE FURNISHED TO THE SCAQMD IN WRITING WITHIN 60 DAYS AFTER THE TESTS ARE CONDUCTED. WRITTEN NOTICE OF THE PERFORMANCE TESTS SCHEDULE SHALL BE PROVIDED TO THE SCAQMD 7 DAYS PRIOR TO THE TESTS SO THAT AN OBSERVER MAY BE PRESENT. THE TESTING SHALL INCLUDE, BUT NOT BE LIMITED TO:
- A. TOTAL NON-METHANE ORGANICS
 - B. OXIDES OF NITROGEN
 - C. CARBON MONOXIDE
 - D. CARBON DIOXIDE
 - E. OXYGEN
 - F. NITROGEN
 - G. MOISTURE CONTENT
 - H. TEMPERATURE
 - I. FLOW RATE

THE FINAL REPORT SHALL INCLUDE FUEL CONSUMPTION AND THE ENGINE LOAD DURING THE TESTS.

[RULE 1110.2, RULE 1303]

17. THE OPERATOR SHALL COMPLY WITH THE REPORTING REQUIREMENTS OF RULE 1110.2(f)(1)(H)(i) THROUGH (iii) – AMENDED 7/9/2010, PERTAINING TO ANY EQUIPMENT BREAKDOWN THAT RESULTS IN EMISSIONS IN EXCESS OF RULE OR PERMIT EMISSION LIMITS.
- [RULE 1110.2]

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Periodic Monitoring:

18. THIS ENGINE SHALL NOT BE OPERATED WITHOUT THE USE OF AN AUTOMATIC AIR TO FUEL RATIO CONTROLLER WHICH SHALL BE MAINTAINED AND KEPT IN PROPER OPERATING CONDITIONS AT ALL TIMES AS SPECIFIED BY THE MANUFACTURER.
[RULE 1110.2, RULE 1303, RULE 3004(a)(4)]
19. A TEMPERATURE MEASUREMENT AND RECORDING DEVICE SHALL BE INSTALLED AND MAINTAINED AT THE INLET AND OUTLET OF THE CATALYST.
[RULE 1303, RULE 3004(a)(4)]
20. THE OPERATOR SHALL USE THIS EQUIPMENT IN SUCH A MANNER THAT THE OXYGEN CONCENTRATION BEING MONITORED, AS INDICATED BELOW, DOES NOT EXCEED 0.5%. TO COMPLY WITH THIS CONDITION, THE OPERATOR SHALL INSTALL AND MAINTAIN A SENSOR TO ACCURATELY INDICATE THE OXYGEN CONCENTRATION OF THE EXHAUST GAS ENTERING THE CATALYST. THE OPERATOR SHALL ALSO INSTALL AND MAINTAIN A DEVICE TO CONTINUOUSLY RECORD THE PARAMETER BEING MEASURED. PARAMETRIC OPERATING DATA MAY BE USED IN LIEU OF DIRECT OXYGEN MEASUREMENTS.
[RULE 1303, RULE 3004(a)(4)]
21. OPERATING RECORDS FOR THE EQUIPMENT, WHICH SHALL INCLUDE ALL DATA, LOGS, TEST REPORTS, DATES OF OPERATION, TOTAL HOURS OF OPERATION, AND FUEL CONSUMPTION FOR EACH TYPE OF FUEL SHALL BE MAINTAINED AND KEPT FOR AT LEAST FIVE YEARS AND MADE AVAILABLE TO AQMD PERSONNEL UPON REQUEST.
[RULE 1110.2, RULE 3004(a)(4)]

Emissions and Requirements:

22. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

PM10 RULE 404, SEE APPENDIX B FOR EMISSIONS LIMITS
NOX: 11 PPMV, RULE 1110.2@ 15% O2 DRY
NOX: 11 PPMV, RULE 1303@ 15% O2 DRY, ONE HOUR AVERAGE
VOC: 30 PPMV, RULE 1110.2@ 15% O2 DRY
VOC: 37 PPMV, RULE 1303@ 15% O2 DRY, ONE HOUR AVERAGE
CO: 250 PPMV, RULE 1110.2@ 15% O2 DRY
CO: 86 PPMV, RULE 1303@ 15% O2 DRY, ONE HOUR AVERAGE