

FACILITY PERMIT TO CONSTRUCT LA COUNTY SANITATION DISTRICTS

Facility Equipment and Requirements (Section H)

This section consists of a table listing all permitted equipment at the facility, facility wide requirements, all individual Permits to Construct issued to various equipment at the facility subject to source-specific requirements. Each permit will list operating conditions including periodic monitoring requirements, and applicable emission limits and requirements that the equipment is subject to. Also included is the rule origin and authority of each emission limit and permit condition.

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PERMITTED EQUIPMENT LIST

THE FOLLOWING IS A LIST OF ALL PERMITS TO CONSTRUCT AT THIS FACILITY:

Application No.	Equipment description	Page
483598	LFG MICROTURBINE SYSTEM	3
483617	LFG FUEL CELL SYSTEM	6
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NOTE: ANY OTHER APPLICATIONS THAT ARE STILL BEING PROCESSED AND HAVE NOT BEEN ISSUED PERMITS TO CONSTRUCT WILL NOT BE FOUND IN THIS TITLE V PERMIT

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PERMIT TO CONSTRUCT

**Granted as of
A/N 483598**

Equipment Description:

LANDFILL GAS MICROTURBINE SYSTEM CONSISTING OF:

1. LANDFILL GAS PRETREATMENT UNIT WITH EQUIPMENT EQUIVALENT TO THE FOLLOWING:
 - A. INLET CONTAMINANT REMOVAL
 - B. CHILLED LIQUID KNOCKOUT
 - C. GAS COMPRESSORS
 - D. SILOXANE REMOVAL
2. EIGHT MICROTURBINES, INGERSOLL RAND, MODEL NO. MT250, 3.3 MM BTU/HR, EACH LANDFILL GAS FIRED, AUGMENTED WITH NATURAL GAS, EACH DRIVING A 250 KW ELECTRIC GENERATOR

Conditions:

1. CONSTRUCTION AND 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 EQUIPMENT SHALL BE OPERATED AND MAINTAINED BY PERSONNEL PROPERLY TRAINED IN ITS OPERATION.
[RULE 204]
4. A FLOW MONITORING AND RECORDING DEVICE SHALL BE INSTALLED AND OPERATED IN THE LANDFILL GAS SUPPLY LINE TO THIS SYSTEM TO CONTINUOUSLY MEASURE AND RECORD THE LANDFILL GAS CONSUMPTION IN STANDARD CUBIC FEET PER MINUTE.
[RULE 1303(b)(2)-OFFSET]
5. THE MICROTURBINES SHALL ONLY BE AUGMENTED WITH A MAXIMUM OF 25% NATURAL GAS, ON AN ANNUAL BASIS, IF THE ELECTRICITY PRODUCED IS USED ONSITE AND NOT EXPORTED.
[RULE 1303(b)(2)-OFFSET]
6. THE MAXIMUM HEATING VALUE TO EACH MICROTURBINE SHALL NOT EXCEED 3.3 MILLION BTU PER HOUR. THE METHANE CONTENT OF THE LANDFILL GAS SHALL BE MONITORED AND RECORDED WEEKLY AND RESULTS RECORDED BASED ON THE FOLLOWING EQUATION:

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MM BTU/HR = METHANE CONTENT (BTU/SCF) X FLOW RATE (SCFM) X 60 MIN/HR.
[RULE 1303(b)(2)-OFFSET]

7. THIS EQUIPMENT SHALL COMPLY WITH RULES 431.1 AND 1150.1.
[RULE 1150.1, 431.1]
8. A SAMPLING PORT SHALL BE INSTALLED AND MAINTAINED AT THE INLET GAS LINE TO THE SYSTEM TO ALLOW THE COLLECTION OF A LANDFILL GAS SAMPLE AND FOR FLOW RATE TESTING.
[RULE 217]
9. SAMPLING PORTS SHALL BE MAINTAINED IN EACH MICROTURBINE EXHAUST DUCT 8-10 DUCT DIAMETERS DOWNSTREAM AND TWO (2) EQUIVALENT DUCT DIAMETERS UPSTREAM OF ANY FLOW DISTURBANCE AND SHALL CONSIST OF TWO 4-INCH WELDED NIPPLES WITH CAPS. THE OWNER/OPERATOR SHALL PROVIDE ADEQUATE AND SAFE ACCESS TO THE TEST PORTS. AN EQUIVALENT METHOD SHALL BE USED UPON PRIOR APPROVAL BY THE AQMD.
[RULE 217]
10. EMISSIONS FROM EACH MICROTURBINE EXHAUST SHALL NOT EXCEED THE FOLLOWING:

POLLUTANT	LBS/HR
NMHC AS METHANE	0.16
NOX	0.12
SOX	0.08
CO	0.072
PM10	0.11

[RULE 1303(b)(2)-OFFSET]

11. WITHIN 180 DAYS FROM INITIAL STARTUP, AND ANNUALLY THEREAFTER, UNLESS OTHERWISE APPROVED BY THE AQMD, APPLICANT SHALL CONDUCT PERFORMANCE TESTS IN ACCORDANCE WITH AQMD TEST PROCEDURES AND FURNISH THE AQMD WRITTEN RESULTS OF SUCH PERFORMANCE TESTS. WRITTEN RESULTS SHALL BE SUBMITTED WITHIN 45 DAYS OF INITIAL TEST. WRITTEN NOTICE OF THE PERFORMANCE TESTS SHALL BE PROVIDED TO THE AQMD 10 DAYS PRIOR TO TESTING SO THAT AN OBSERVER MAY BE PRESENT. ALL SOURCE TESTING AND ANALYTICAL METHODS SHALL BE SUBMITTED TO THE AQMD FOR APPROVAL AT LEAST 30 DAYS PRIOR TO START OF TESTS. THE TESTS SHALL BE CONDUCTED AT THE MAXIMUM RATED HEAT INPUT. THE TEST SHALL INCLUDE, BUT MAY NOT BE LIMITED TO A TEST OF THE INLET GAS TO THE MICROTURBINE AND EXHAUST OF THE MICROTURBINE FOR:

- A. METHANE
- B. TOTAL NON-METHANE ORGANICS
- C. OXIDES OF NITROGEN (EXHAUST ONLY)
- D. CARBON MONOXIDE (EXHAUST ONLY)
- E. TOTAL PARTICULATES (EXHAUST ONLY)
- F. HYDROGEN SULFIDE (INLET ONLY)
- G. TOTAL SULFUR COMPOUNDS AS H₂S
- H. FORMALDEHYDES (EXHAUST ONLY)
- I. CARBON DIOXIDE
- J. RULE 1150.1 TABLE 1 COMPOUNDS

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- K. OXYGEN
- L. NITROGEN
- M. MOISTURE
- N. TEMPERATURE
- O. FLOW RATE
- P. NMOC DESTRUCTION EFFICIENCY
- Q. BTU CONTENT (INLET ONLY)

ALL MICROTURBINES SHALL BE TESTED UNLESS OTHERWISE APPROVED BY THE AQMD.
[RULE 1303(b)(2)-OFFSET, 1401]

12. THE OPERATION OF THIS EQUIPMENT SHALL NOT RESULT IN THE RELEASE OF RAW LANDFILL GAS INTO THE ATMOSPHERE. ANY BREAKDOWN OR MALFUNCTION WHICH RESULTS IN EMISSION OF LANDFILL GAS SHALL BE REPORTED TO THE AQMD WITHIN ONE HOUR AFTER OCCURRENCE OR WITHIN ONE HOUR OF THE TIME THE OPERATING PERSONNEL KNEW OR REASONABLY SHOULD HAVE KNOWN OF THE OCCURRENCE. IMMEDIATE REMEDIAL MEASURES SHALL BE UNDERTAKEN TO CORRECT THE PROBLEM AND PREVENT FURTHER EMISSIONS INTO THE ATMOSPHERE
[RULE 402, 430]
13. PRIOR TO INSTALLATION, THE SPECIFIC VENDOR DATA AND SPECIFICATIONS FOR EQUIPMENT IN THE PRETREATMENT UNIT SHALL BE SUBMITTED TO AND APPROVED BY THE AQMD. ADDITIONAL CONDITIONS MAY BE INCLUDED, IF NECESSARY TO ENSURE PROPER OPERATION.
[RULE 204]
14. ALL RECORDS SHALL BE KEPT FOR AT LEAST FIVE YEARS AND MADE AVAILABLE TO AQMD PERSONEL UPON REQUEST
[RULE 1150.1,303(b)(2)-OFFSET]

Emissions and Requirements:

15. NMOC: 20 PPMV OR 98 % WEIGHT REDUCTION, RULE 1150.1
SO_x: 150 PPM, RULE 431.1
CO: 2000 PPMV, RULE 407
PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS
PM: 0.1 GR/SCF, RULE 404

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PERMIT TO CONSTRUCT

Granted as of
A/N 483617

Equipment Description:

LANDFILL GAS FUEL CELL SYSTEM CONSISTING OF:

1. FUEL CELL LANDFILL GAS PRETREATMENT UNIT WITH EQUIPMENT EQUIVALENT TO A COMPRESSOR, COALESCING FILTER, GAS CHILLER AND A SORBENT BED.
2. FUEL CELL, FUEL CELL ENERGY, MODEL DFC300, 2.2MM BTU/HR, 300 KW POWER OUTPUT, LANDFILL GAS FIRED, AUGMENTED WITH NATURAL GAS.

Conditions:

1. CONSTRUCTION AND 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. A NON-RESETTABLE TOTALIZING FLOW METER SHALL BE INSTALLED AND MAINTAINED TO MEASURE AND RECORD THE TOTAL QUANTITY OF GAS TREATED
[RULE 1303(a)(1)-BACT]
4. THE MAXIMUM HEATING VALUE TO THE FUEL CELL SHALL NOT EXCEED 2.2 MILLION BTU/HR. THE METHANE CONTENT OF THE LANDFILL GAS SHALL BE MONITORED AND RECORDED WEEKLY AND RESULTS RECORDED BASED ON THE FOLLOWING EQUATION:

$$\text{MM BTU/HR} = \text{METHANE CONTENT (BTU/SCF)} \times \text{FLOW RATE (SCFM)} \times 60 \text{ MIN/HR.}$$

[RULE 1303(b)(2)-OFFSET]
5. TWO SAMPLING PORTS SHALL BE PROVIDED IN THE FUEL-CELL EXHAUST DUCT, 8-10 DUCT DIAMETERS DOWNSTREAM, AND TWO DUCT DIAMETERS UPSTREAM. THE SAMPLING PORT SHALL CONSIST OF TWO 4 INCH WELDED NIPPLES WITH PLUGS, SET 90 DEGREES APART. AN ALTERNATE SAMPLING LOCATION OR EQUIVALENT METHOD FOR EMISSION SAMPLING MAY BE USED UPON WRITTEN APPROVAL OF THE SCAQMD. ADEQUATE AND SAFE ACCESS TO THE TEST PORTS SHALL BE SUPPLIED BY THE APPLICANT
[RULE 218]

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6. SAMPLING PORTS SHALL BE INSTALLED AT THE INLET GAS LINE TO THE LANDFILL GAS TREATMENT SYSTEM AND TO THE FUEL-CELL PRE-CONVERTER TO ALLOW THE COLLECTION OF LANDFILL GAS SAMPLES.
[RULE 218]
7. THE OPERATOR SHALL MEASURE THE CONCENTRATION OF TOTAL SULFUR AT THE INLET AND OUTLET OF THE LANDFILL GAS TREATMENT SYSTEM ONCE EACH QUARTER, USING METHODS APPROVED BY THE SCAQMD. ALL RESULTS SHALL BE RECORDED AND REPORTED IN PPMV AS H₂S.
[RULE 431.1]
8. THE CONCENTRATION OF SULFUR COMPOUNDS MEASURED AS HYDROGEN SULFIDE (H₂S) AT THE INLET TO THE FUEL CELL PRE-CONVERTER SHALL NOT EXCEED 40 PPMV
[RULE 431.1]
9. THE SPENT MEDIA WHICH IS REMOVED FROM THE SYSTEM SHALL BE MAINTAINED OR STORED IN CLOSED CONTAINERS PRIOR TO REMOVAL FROM THE FACILITY
[RULE 402]
10. THE SULFUR AND SILOXANE TREATMENT MEDIA SHALL BE REPLACED AT A FREQUENCY NECESSARY TO MAINTAIN COMPLIANCE WITH THE EMISSION LIMITS IN THIS PERMIT AND TO OPERATE THE FUEL CELL IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
[RULE 1303(a)(1)-BACT, 431.1]
11. EMISSIONS RESULTING FROM THE FUEL CELL SHALL NOT EXCEED THE FOLLOWING:
- | POLLUTANT | LBS/HR |
|----------------|--------|
| ROG, AS HEXANE | 0.12 |
| NOX | 0.05 |
| SOX | 0.024 |
| CO | 0.027 |
| PM | 0.023 |
- [RULE 1303(b)(2)-OFFSET]
12. WITHIN 180 DAYS FROM INITIAL STARTUP, AND ONCE EVERY 5 YEARS THEREAFTER, APPLICANT SHALL CONDUCT PERFORMANCE TESTS IN ACCORDANCE WITH AQMD TEST PROCEDURES AND FURNISH THE AQMD WRITTEN RESULTS OF SUCH PERFORMANCE TESTS. WRITTEN RESULTS SHALL BE SUBMITTED WITHIN 45 DAYS OF INITIAL TEST. WRITTEN NOTICE OF THE PERFORMANCE TESTS SHALL BE PROVIDED TO THE AQMD 10 DAYS PRIOR TO TESTING SO THAT AN OBSERVER MAY BE PRESENT. ALL SOURCE TESTING AND ANALYTICAL METHODS SHALL BE SUBMITTED TO THE AQMD FOR APPROVAL AT LEAST 30 DAYS PRIOR TO START OF TESTS. THE TESTS SHALL BE CONDUCTED AT THE MAXIMUM RATED HEAT INPUT. THE TEST SHALL INCLUDE, BUT MAY NOT BE LIMITED TO, A TEST OF THE OUTLET EXHAUST OF THE FUEL CELL, THE UNTREATED LANDFILL GAS, AND THE TREATED LANDFILL GAS, UNLESS OTHERWISE INDICATED BELOW. THE TEST SHALL INCLUDE THE FOLLOWING RESULTS AND PROCESS DATA:
- A. METHANE CONTENT OF THE RAW AND TREATED LANDFILL GAS
 - B. TOTAL NON-METHANE ORGANIC COMPOUNDS OF THE RAW LANDFILL GAS, TREATED LANDFILL GAS, AND FUEL CELL EXHAUST OUTLET

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- C. OXIDES OF NITROGEN AND OXIDES OF SULFUR (FUEL CELL OUTLET), IN PPM, AND LB/HR
 - D. CARBON MONOXIDE, (FUEL CELL OUTLET), IN PPM, AND LB/HR
 - E. TOXIC AIR CONTAMINANTS, INCLUDING BUT NOT LIMITED TO, BENZENE, CHLOROBENZENE, DICHLOROBENZENE, DICHLOROETHANE, DICHLOROETHYLENE, DICHLOROMETHANE, ETHYL BENZENE, TETRACHLOROETHYLENE, TRICHLOROETHYLENE, TOLUENE, AND XYLENE ISOMERS
 - F. OXYGEN CONTENT
 - G. NITROGEN CONTENT
 - H. MOISTURE CONTENT
 - I. TEMPERATURE OF THE REFORMER
 - J. TEMPERATURE AT INLET AND OUTLET OF THE PRE-CONVERTER
 - K. FLOW RATE OF THE FUEL CELL EXHAUST
 - L. TOTAL REDUCED SULFUR COMPOUNDS (RAW LANDFILL GAS AND TREATED LANDFILL GAS)
 - M. POWER OUTPUT OF THE FUEL CELL
 - N. BTU CONTENT OF THE TREATED LANDFILL GAS
 - O. FUEL UTILIZATION OF THE FUEL CELL
 - P. TREATED LANDFILL GAS FEED RATE TO THE PRE-CONVERTER.
[RULE 1303(b)(2)-OFFSET, 1401, 431.1]
13. THE OPERATION OF THIS EQUIPMENT SHALL NOT RESULT IN THE RELEASE OF RAW LANDFILL GAS INTO THE ATMOSPHERE. ANY BREAKDOWN OR MALFUNCTION WHICH RESULTS IN EMISSION OF LANDFILL GAS SHALL BE REPORTED TO THE AQMD WITHIN ONE HOUR AFTER OCCURRENCE OR WITHIN ONE HOUR OF THE TIME THE OPERATING PERSONNEL KNEW OR REASONABLY SHOULD HAVE KNOWN OF THE OCCURRENCE. IMMEDIATE REMEDIAL MEASURES SHALL BE UNDERTAKEN TO CORRECT THE PROBLEM AND PREVENT FURTHER EMISSIONS INTO THE ATMOSPHERE
[RULE 402, 431.1]
14. PRIOR TO INSTALLATION, THE SPECIFIC VENDOR DATA AND SPECIFICATIONS FOR EQUIPMENT IN THE PRETREATMENT UNIT SHALL BE SUBMITTED TO AND APPROVED BY THE AQMD. ADDITIONAL CONDITIONS MAY BE INCLUDED, IF NECESSARY TO ENSURE PROPER OPERATION.
[RULE 204]
15. THE OWNER OR OPERATOR OF THIS EQUIPMENT SHALL KEEP RECORDS OF OPERATING AND MONITORING DATA, AND TREATMENT MEDIA REPLACEMENT DATES. THESE RECORDS SHALL BE MAINTAINED FOR A MINIMUM OF FIVE YEARS AND MADE AVAILABLE TO AQMD PERSONNEL UPON REQUEST
[RULE 3004(a)(4)-Periodic Monitoring]

Emissions and Requirements:

16. NMOC: 20 PPMV OR 98 % WEIGHT REDUCTION, RULE 1150.1
SO_x: 150 PPMV, RULE 431.1
CO: 2000 PPMV, RULE 407
PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS
PM: 0.1 GR/SCF, RULE 404

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**Granted as of
A/N 483623**

Equipment Description:

LANDFILL GAS FLARING SYSTEM CONSISTING OF:

1. LIQUID KNOCKOUT/PARTICULATE REMOVAL VESSEL, JOHN ZINK, 2'-6", DIA. X 6'-0" H.
2. BLOWER, LANDFILL GAS, MAXIMUM FLOW RATE, 8100 SCFM
3. FLARE, JOHN ZINK, ZULE, 13'-0" DIA. X 35'-0" H., 75.6 MMBTU/HR, LANDFILL GAS FIRED, AUGMENTED WITH NATURAL GAS, WITH A MULTI JET BURNER, A PROPANE GAS PILOT, ELECTRIC IGNITER, UV FLAME SENSOR, THERMOCOUPLE WITH TEMPERATURE INDICATOR AND RECORDER, AUTOMATIC SHUTDOWN AND ALARM SYSTEM, AUTOMATIC COMBUSTION AIR REGULATING SYSTEM, TEMPERATURE CONTROLLER AND FLAME ARRESTOR

Conditions:

1. CONSTRUCTION AND 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 EQUIPMENT SHALL BE OPERATED AND MAINTAINED BY PERSONNEL PROPERLY TRAINED IN ITS OPERATION.
[RULE 204]
4. ALL LANDFILL GAS COLLECTED SHALL BE DIRECTED TO A LANDFILL GAS CONTROL SYSTEM WHICH HAS BEEN ISSUED A VALID PERMIT BY THE AQMD.
[RULE 1150.1, 1303(a)(1)-BACT]
5. WHENEVER THE FLARE IS IN OPERATION, A TEMPERATURE OF NOT LESS THAT 1400 DEGREES F AS MEASURED BY THE TEMPERATURE INDICATOR SHALL BE MAINTAINED IN THE FLARE STACK. THE THERMOCOUPLE USED TO MEASURE THE TEMPERATURE SHALL BE ABOVE THE FLAME ZONE AND AT LEAST 3 FEET BELOW THE TOP OF THE FLARE SHROUD AND AT LEAST 0.6 SECONDS DOWNSTREAM OF THE BURNER.
[RULE 1150.1, 1303(a)(1)-BACT]

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6. A SAMPLING PORT SHALL BE INSTALLED AT THE INLET GAS LINE TO THE FLARE.
[RULE 217]
7. A SET OF FOUR SAMPLING PORTS SHALL BE INSTALLED IN THE FLARE SHROUD AND LOCATED AT LEAST TWO FEET ABOVE THE FLAME ZONE AND AT LEAST THREE FEET BELOW THE TOP OF THE FLARE SHROUD. EACH PORT SHALL BE INSTALLED AT 90 DEGREES APART, AND SHALL CONSIST OF FOUR INCH COUPLINGS WITH PLUGS. ADEQUATE AND SAFE ACCESS TO ALL TEST PORTS SHALL BE PROVIDED.
[RULE 217]
8. THE SAMPLING PORTS SHALL BE MAINTAINED ON THE FLARE STACK. ADEQUATE AND SAFE ACCESS TO ALL SOURCE TEST PORTS SHALL BE PROVIDED BY THE APPLICANT WITHIN TWENTY FOUR (24) HOURS OF A REQUEST BY THE AQMD TO CONDUCT A TEST.
[RULE 217]
9. THE SKIN TEMPERATURE OF THE FLARE SHROUD WITHIN FOUR FEET OF ALL THE SOURCE TEST PORTS SHALL NOT EXCEED 250 DEGREES F. IF A HEAT SHIELD IS REQUIRED TO MEET THIS REQUIREMENT, ITS DESIGN SHALL BE APPROVED BY THE AQMD PRIOR TO CONSTRUCTION. THE HEAT SHIELD, IF REQUIRED TO MEET THE TEMPERATURE REQUIREMENT, SHALL BE IN PLACE WHENEVER A SOURCE TEST IS CONDUCTED BY THE AQMD.
[RULE 217]
10. PRIOR TO OPERATING THIS EQUIPMENT, A SUFFICIENT NUMBER OF SIGHT GLASS WINDOWS SHALL BE INSTALLED IN THE FLARE TO ALLOW VISUAL INSPECTION OF THE FLAME AND THERMOCOUPLE LOCATION WITHIN THE FLARE AT ALL TIMES. PERMANENT AND SAFE ACCESS SHALL BE PROVIDED FOR ALL SIGHT GLASS WINDOWS.
[RULE 1303(a)(1)-BACT, 217]
11. THE FLARE SHALL BE EQUIPPED WITH AN AUTOMATIC DAMPER SYSTEM TO REGULATE THE FLOW OF COMBUSTION AIR.
[RULE 1303(a)(1)-BACT]
12. THE FLARE SHALL BE EQUIPPED WITH A TEMPERATURE INDICATOR AND RECORDER WHICH MEASURES AND RECORDS THE GAS TEMPERATURE IN THE FLARE STACK THE TEMPERATURE INDICATOR AND RECORDER SHALL OPERATE WHENEVER THE FLARE IS IN OPERATION.
[RULE 1150.1, 1303(a)(1)-BACT]
13. THE FLARE SHALL BE EQUIPPED WITH AN AUTOMATIC PILOT RESTART SYSTEM APPROVED BY THE AQMD.
[RULE 1303(a)(1)-BACT]
14. A FLARE FAILURE ALARM WITH AUTOMATIC BLOWER AND LANDFILL GAS SUPPLY VALVE SHUT-OFF SYSTEM, APPROVED BY THE AQMD, SHALL BE INSTALLED. THIS SYSTEM SHALL BE TESTED MONTHLY FOR PROPER OPERATION AND RESULTS RECORDED.
[RULE 1303(a)(1)-BACT]

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15. AMBIENT METHANE ANALYZERS SHALL BE INSTALLED AROUND THE FLARE STATION IN THE VICINITY OF THE BLOWERS AND POSITIVE PRESSURE LANDFILL GAS PIPELINES TO MONITOR FOR LINE BREAKS AND MAJOR LEAKS. AN ALARM SYSTEM AND SUBSEQUENT BLOWER SHUTDOWN SHALL BE ACTIVATED BY ANY ONE OF THE MONITORS WHEN SPECIFIED CONCENTRATIONS ARE MEASURED. THIS SYSTEM SHALL BE TESTED MONTHLY FOR PROPER OPERATION AND RESULTS RECORDED.
[RULE 1303(a)(1)-BACT]
16. A FLOW INDICATOR AND RECORDER SHALL BE INSTALLED IN THE LANDFILL GAS SUPPLY LINE TO THE FLARE AND SHALL OPERATE WHENEVER THE FLARE IS IN OPERATION.
[RULE 1303(b)(2)-OFFSET]
17. ALL RECORDING DEVICES SHALL BE SYNCHRONIZED WITH RESPECT TO THE TIME OF DAY.
[RULE 1303(b)(2)-OFFSET]
18. THE FLARE SHALL ONLY BE OPERATED ON LANDFILL GAS UNLESS THE LANDFILL GAS HEATING VALUE IS NOT SUFFICIENT TO SUPPORT GOOD COMBUSTION. TO ASSIST GOOD COMBUSTION ONLY, NATURAL GAS SHALL BE BLENDED WITH LANDFILL GAS AT THE FLARE INLETS. THE NATURAL GAS INPUT RATE SHALL NOT EXCEED 25% OF TOTAL HEAT INPUT TO THE FLARE.
[RULE 1303(a)(1)-BACT]
19. THE TOTAL FLOW RATE OF LANDFILL GAS TO THE FLARE SHALL NOT EXCEED 8100 SCFM.
[RULE 1303 (b)(2)-OFFSET]
20. THE MAXIMUM HEATING VALUE TO THE FLARE SHALL NOT EXCEED 75.6 MILLION BTU PER HOUR. THE METHANE CONTENT OF THE LANDFILL GAS SHALL BE MONITORED AND RECORDED WEEKLY AND RESULTS RECORDED BASED ON THE FOLLOWING EQUATION:

$$\text{MM BTU/HR} = \text{METHANE CONTENT (BTU/SCF)} \times \text{FLOW RATE (SCFM)} \times 60 \text{ MIN/HR.}$$

[RULE 1303(b)(2)-OFFSET]
21. WITHIN 180 DAYS FROM INITIAL STARTUP, AND ANNUALLY THEREAFTER, APPLICANT SHALL CONDUCT PERFORMANCE TESTS IN ACCORDANCE WITH AQMD TEST PROCEDURES AND FURNISH THE AQMD WRITTEN RESULTS OF SUCH PERFORMANCE TESTS. WRITTEN RESULTS SHALL BE SUBMITTED WITHIN 45 DAYS OF INITIAL TEST. WRITTEN NOTICE OF THE PERFORMANCE TESTS SHALL BE PROVIDED TO THE AQMD 10 DAYS PRIOR TO TESTING SO THAT AN OBSERVER MAY BE PRESENT. ALL SOURCE TESTING AND ANALYTICAL METHODS SHALL BE SUBMITTED TO THE AQMD FOR APPROVAL AT LEAST 30 DAYS PRIOR TO START OF TESTS. THE TESTS SHALL BE CONDUCTED AT THE MAXIMUM RATED HEAT INPUT AND SHALL INCLUDE, BUT MAY NOT BE LIMITED TO, A TEST OF THE INLET LANDFILL GAS FLARE AND THE FLARE EXHAUST FOR:
 - A. METHANE
 - B. TOTAL NON-METHANE ORGANICS
 - C. OXIDES OF NITROGEN (EXHAUST ONLY)
 - D. CARBON MONOXIDE (EXHAUST ONLY)
 - E. TOTAL PARTICULATES (EXHAUST ONLY)
 - F. HYDROGEN SULFIDE (INLET ONLY)

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- G. C1 THROUGH C3 SULFUR COMPOUNDS (SPECIATED)
- H. CARBON DIOXIDE
- I. QUALITATIVE IDENTIFICATION OF CHEMICAL COMPOUNDS USING
A GAS CHROMATOGRAPH/MASS SPECTROMETRY METHOD
(GC/MS) FOR ITS VOLUME CONCENTRATION
- J. OXYGEN
- K. NITROGEN
- L. MOISTURE CONTENT
- M. TEMPERATURE
- N. FLOW RATE
[RULE 1303(b)(2)-OFFSET, 1401]

22. EMISSIONS RESULTING FROM THE FLARE SHALL NOT EXCEED THE FOLLOWING:

POLLUTANT	LBS/HR
ROG, AS HEXANE	1.23
NOX	1.89
SOX	3.39
CO	4.46
PM	1.15

[RULE 1303(b)(2)-OFFSET]

23. THE OPERATION OF THIS EQUIPMENT SHALL NOT RESULT IN THE RELEASE OF RAW LANDFILL GAS INTO THE ATMOSPHERE. ANY BREAKDOWN OR MALFUNCTION WHICH RESULTS IN EMISSION OF LANDFILL GAS SHALL BE REPORTED TO THE AQMD WITHIN ONE HOUR AFTER OCCURRENCE OR WITHIN ONE HOUR OF THE TIME THE OPERATING PERSONNEL KNEW OR REASONABLY SHOULD HAVE KNOWN OF THE OCCURRENCE. IMMEDIATE REMEDIAL MEASURES SHALL BE UNDERTAKEN TO CORRECT THE PROBLEM AND PREVENT FURTHER EMISSIONS INTO THE ATMOSPHERE
[RULE 402, 430]
24. ALL RECORDS SHALL BE KEPT FOR A PERIOD OF AT LEAST FIVE (5) YEARS AND SHALL BE MADE AVAILABLE TO THE AQMD UPON REQUEST.
[RULE 1150.1, 303(b)(2)-OFFSET]

Emissions and Requirements:

25. NMOC: 20 PPMV OR 98 % WEIGHT REDUCTION, RULE 1150.1, 40 CFR 63 SUBPART AAAA
NOX: 0.025 LBS/MMBTU, RULE 1303(a)(1)-BACT
SOx: 150 PPMV, RULE 431.1
CO: 0.06 LBS/MMBTU, RULE 1303(a)(1)-BACT
CO: 2000 PPMV, RULE 407
PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS
PM: 0.1 GR/SCF, RULE 404

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PERMIT TO CONSTRUCT

**Granted as of
A/N 483625**

Equipment Description:

MODIFICATION TO AN EXISTING LANDFILL GAS COLLECTION SYSTEM CONSISTING OF:

1. FOUR HUNDRED EIGHTY TWO (482) VERTICAL LANDFILL GAS COLLECTION WELLS.
2. 3,500 LINEAR FEET OF HORIZONTAL LANDFILL GAS COLLECTION TRENCHES AND ASSOCIATED PIPING.
3. SIXTY (60) VERTICAL LANDFILL GAS COLLECTION WELLS AND 5,000 LINEAR FEET OF HORIZONTAL LANDFILL GAS COLLECTION TRENCHES AND ASSOCIATED PIPING TO BE INSTALLED ON "AS NEED BASIS" AT A LOCATION TO BE DETERMINED.

BY THE ADDITION OF:

4. LATERAL CONNECTIONS TO THE FUEL CELL AND EIGHT MICROTURBINES.

Conditions:

1. CONSTRUCTION AND OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN COMPLIANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THIS 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 EQUIPMENT SHALL BE OPERATED AND MAINTAINED BY PERSONNEL PROPERLY TRAINED IN ITS OPERATION.
[RULE 204]
4. DURING WELL DRILLING, AN APPROVED EMISSION CONTROL BOX SHALL BE PLACED OVER THE WELL HOLE TO COLLECT LANDFILL GAS. THE COLLECTED GAS SHALL BE DIRECTED TO A LANDFILL GAS CONTROL SYSTEM WHICH HAS A VALID PERMIT ISSUED BY THE AQMD.
[RULE 402]
5. WELL DRILLING, DRIVING AND/OR TRENCHING SHALL NOT BE CONDUCTED BETWEEN THE HOURS OF 6 P.M. AND 7 A.M. OR ON SATURDAYS, SUNDAYS OR LEGAL HOLIDAYS, UNLESS OTHERWISE APPROVED BY THE AQMD.
[RULE 1150, 402]

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6. WELL DRILLING, DRIVING AND/OR TRENCHING SHALL NOT BE CONDUCTED ON DAYS WHEN THE AQMD FORECASTS FIRST, SECOND OR THIRD STAGE EPISODES FOR AREA NO.3, OR WHEN THE AQMD REQUIRES COMPANIES IN AREA NO.3 TO IMPLEMENT THEIR FIRST, SECOND OR THIRD STAGE EPISODE PLANS. EPISODE FORECASTS FOR THE FOLLOWING DAY CAN BE OBTAINED BY CALLING (800) 288-7664.
[RULE 1150, 402]
7. WELL DRILLING, DRIVING AND/OR TRENCHING SHALL NOT BE CONDUCTED WHEN THE WIND SPEED IS GREAT THAN 15 MPH AVERAGE (OVER 15 MINUTES) OR THE WIND SPEED INSTANTANEOUSLY EXCEEDS 25 MPH.
[RULE 1150, 402, 403]
8. EACH WELL SHALL BE COMPLETED AND CAPPED THE SAME DAY ITS CONSTRUCTION COMMENCES UNLESS THE HOLE IS COMPLETELY SEALED AND THE WELL CASING IS CONNECTED TO THE GAS COLLECTION HEADER TO PREVENT ANY LANDFILL GAS FROM ESCAPING INTO THE ATMOSPHERE.
[RULE 1150]
9. THE CONSTRUCTION OF ANY PIPING OR WELL TRENCH WHICH EXPOSES LANDFILL TRASH TO THE ATMOSPHERE SHALL BE STAGED SUCH THAT NO MORE THAN ONE HUNDRED (100) LINEAR FEET OF TRENCH IS EXPOSED AT ANY TIME PRIOR TO BACKFILLING.
[RULE 1150.1, 402]

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10. WELL HOLES, TRENCHES, AND EXPOSED LANDFILL TRASH SHALL BE COMPLETELY COVERED TO PREVENT ANY EMISSIONS OF LANDFILL GAS TO THE ATMOSPHERE WHENEVER WORK IS NOT ACTIVELY IN PROGRESS. THE COVER SHALL INCLUDE, BUT MAY NOT BE LIMITED TO A MINIMUM OF 6 INCHES OF CLEAN DIRT, APPROVED FOAM, OR HEAVY-DUTY PLASTIC SHEETING. FOAM BY ITSELF SHALL NOT BE USED AS A NIGHT COVER IF IT IS RAINING OR RAIN IS PREDICTED BY THE NATIONAL WEATHER SERVICE PRIOR TO THE NEXT SCHEDULED WORKING DAY.
[RULE 1150, 402]
11. FOR PURPOSES OF THIS PERMIT, CONSTRUCTION SPOILS ARE LANDFILL TRASH, MATERIAL THAT IS MIXED WITH LANDFILL TRASH, MATERIAL THAT HAS BEEN IN CONTACT WITH LANDFILL TRASH, OR ODOROUS MATERIAL THAT IS REMOVED FROM WELL HOLES OR TRENCHES.
[RULE 1150, 402, 403]
12. CONSTRUCTION SPOILS AND ALL WORKING AREAS BEING ACTIVELY USED FOR TRUCK AND CONSTRUCTION EQUIPMENT TRAFFICKING SHALL BE MAINTAINED IN A MOIST CONDITION TO MINIMIZE DUST AND EMISSIONS.
[RULE 1150, 402, 403]
13. ALL CONSTRUCTION SPOILS SHALL BE DISPOSED PROPERLY WITHIN ONE HOUR OF GENERATION OR AS DEEMED NECESSARY BY AQMD PERSONNEL.
[RULE 1150, 402]
14. DURING TRANSPORT OF THE CONSTRUCTION SPOILS, NO MATERIAL SHALL EXTEND ABOVE THE SIDES OR REAR OF THE VEHICLE HAULING THE MATERIAL.
[RULE 1150]
15. THE EXTERIOR OF THE VEHICLE (INCLUDING THE TIRES) HAULING THE CONSTRUCTION SPOILS SHALL BE CLEANED OFF PRIOR TO LEAVING THE WORKING SITE.
[RULE 1150]
16. IF A DISTINCT ODOR LEVEL (LEVEL III OR GREATER) RESULTING FROM THE CONSTRUCTION IS DETECTED AT OR BEYOND THE PROPERTY LINE, ALL WORK SHALL CEASE UNTIL THE ODOR SOURCES ARE DETERMINED AND ELIMINATED. ODOR LEVELS SHALL BE DETERMINED BY AQMD PERSONNEL OR ON-SITE SAFETY COORDINATOR IN THE ABSENCE OF AQMD PERSONNEL.
[RULE 1150, 402]
17. DURING CONSTRUCTION, IF A CONSIDERABLE NUMBER OF COMPLAINTS ARE RECEIVED, ALL WORK SHALL CEASE AND APPROVED MITIGATION MEASURES SHALL BE IMPLEMENTED IMMEDIATELY. WORK SHALL NOT RESUME UNTIL THE EMISSIONS CAUSING THE COMPLAINTS IS MITIGATED AND THE APPROVAL TO RESUME WORK IS RECEIVED FROM THE AQMD.
[RULE 1150, 402]

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18. EACH WELL HEAD SHALL BE EQUIPPED WITH A SHUT-OFF VALVE AND A SAMPLING PORT.
[RULE 1150.1]
19. EACH WELL SHALL BE SECURELY SEALED TO PREVENT ANY EMISSIONS OF LANDFILL GAS FROM AROUND THE WELL CASING.
[RULE 1150.1]
20. UNTIL CONNECTED TO AN OPERATING LANDFILL GAS COLLECTION SYSTEM, EACH COMPLETED WELL SHALL BE CAPPED AND ITS GAS CONTROL VALVE CLOSED TO AVOID VENTING LANDFILL GAS TO THE ATMOSPHERE.
[RULE 1150, 1150.1]
21. ALL OPENINGS OF THIS SYSTEM INCLUDING CONDENSATE REMOVAL EQUIPMENT SHALL BE PROPERLY COVERED AND SEALED TO PREVENT ANY VAPORS FROM ENTERING INTO THE ATMOSPHERE. EACH WELL SHALL BE SECURELY SEALED TO PREVENT ANY EMISSIONS OF LANDFILL GAS FROM AROUND THE WELL CASING.
[RULE 1150.1, 402]
22. ALL GASES COLLECTED BY THIS SYSTEM SHALL BE VENTED TO A COMBUSTION OR PROCESSING FACILITY WHICH IS IN FULL USE, CAN ADEQUATELY PROCESS THE VOLUME OF GAS COLLECTED, AND HAS BEEN ISSUED A VALID PERMIT TO CONSTRUCT OR OPERATE BY THE DISTRICT.
[RULE 1150.1, 1303(a)(1)-BACT]
23. THE OPERATION OF THIS EQUIPMENT SHALL NOT RESULT IN THE RELEASE OF RAW LANDFILL GAS INTO THE ATMOSPHERE. ANY BREAKDOWN OR MALFUNCTION WHICH RESULTS IN EMISSION OF LANDFILL GAS SHALL BE REPORTED TO THE AQMD WITHIN ONE HOUR AFTER OCCURRENCE OR WITHIN ONE HOUR OF THE TIME THE OPERATING PERSONNEL KNEW OR REASONABLY SHOULD HAVE KNOWN OF THE OCCURRENCE. IMMEDIATE REMEDIAL MEASURES SHALL BE UNDERTAKEN TO CORRECT THE PROBLEM AND PREVENT FURTHER EMISSIONS INTO THE ATMOSPHERE.
[RULE 1150, 402]
24. WITHIN 30 DAYS AFTER CONSTRUCTION OF A GROUP OF WELLS AND THE ASSOCIATED PIPING IS COMPLETE, THE PERMITTEE SHALL SUBMIT AS BUILT DRAWINGS IN DUPLICATE TO THE AQMD (ATTN: REFINERY AND WASTE MANAGEMENT PERMITTING).
[RULE 1150.1]