

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES 10	PAGE 1
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Permit to Operate (PC → PO)

Applicant Inland Empire Utilities Agency (IEUA), Regional Plant 5 (RP-5), Solids Handling Facility (SHF)

Mailing Address P.O. Box 9020
Chino Hills, CA 91709

Equipment Location 6063 Kimball Avenue (contiguous facility)
Chino, CA 91708

16090 Mountain Avenue (physical address)
Chino, CA 91708

Equipment Description
APPLICATION 449064, FACILITY ID 147371

BOILER, NO. 1, RITE BOILER, MODEL NO. 500WGGE, WATER TUBE TYPE, WITH POWER FLAME MODEL NUMBER LNINVGR3-25B, 3750 MBH LOW NO_x BURNER, 5 H.P. COMBUSTION AIR FAN, WITH MAXIMUM 3,750,000 BTU PER HOUR HEAT INPUT, DIGESTER GAS FIRED, AND NATURAL GAS AS STAND-BY FUEL.

APPLICATION 449065, FACILITY ID 147371

BOILER, NO. 2, RITE BOILER, MODEL NO. 500WGGE, WATER TUBE TYPE, WITH POWER FLAME MODEL NUMBER LNINVGR3-25B, 3750 MBH LOW NO_x BURNER, 5 H.P. COMBUSTION AIR FAN, WITH MAXIMUM 3,750,000 BTU PER HOUR HEAT INPUT, DIGESTER GAS FIRED, AND NATURAL GAS AS STAND-BY FUEL.

Background/Process Description

The above applications were submitted on September 27, 2005 for New Construction Permits to Construct expedited permit processing (XPP) to install two identical digester gas or natural gas fired 3.75 mmBtu/hr boilers. Boiler no. 1 is to be used to supply hot water used to heat the plug-flow digester. Boiler no. 2 is to be used to supply hot water used to heat the two European conical roof digesters. The boilers shall use digester gas as the primary fuel and natural gas as back-up when sufficient digester is not available. These boilers are constructed.

Boiler no. 2 was source tested on January 22, 2009 (STID PR08005) for CO, NO_x, & DG H₂S while operating on natural gas and digester gas at low, mid, and high fire. SCAQMD MSTE evaluated the source test as Conditionally Acceptable for CO, NO_x, & H₂S although the fuel based emissions for mass are not reliable and should only be used qualitatively and Unacceptable for VOC, PM, & speciated organics, since these compounds were not reported.

Boiler no. 2 was re-source tested on December 11, 2012 (STID PR12308) after submitting a new source test protocol for VOC, PM, & speciated organics. SCAQMD MSTE evaluated the source test as

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Unacceptable, since the compounds were not source tested and low, mid, and high fire as required by the permit conditions and source test protocol evaluation. It was determined by E&C staff that since the composite source test results demonstrated compliance with future Rule 1146.1 emission limits that a future re-test would not be necessary. Additional source tests per Rule 1146.1 would be sufficient to demonstrate compliance.

IEUA RP-5 consists of a sewage treatment facility and solids handling facility (SHF) on a contiguous property. The sewage treatment facility accepts and treats municipal sewage and produces Title 22 recycled water. The solids handling facility is a manure and food waste processing plant that digests manure and food waste to produce digester gas to fuel these two engines to produce power for the facility. The current sewage influent throughput for the facility is 12 million gallons per day (MGD), although an application A/N 534813 has been submitted to increase the permitted throughput to 15 MGD. There shall be no change of emissions for these engine applications. There is no school within 1000 feet of the emission source. No public notice is required. There are no complaints filed or Notices to Comply or issued against the above facility in the last two years. A Notice of Violation was issued on September 19, 2012 for constructing and operating equipment at a Title V facility without first obtaining a permit revision allowing such construction and operation. The facility is currently operating under a Stipulated Order for Abatement Case No. 5209-4 concerning IEUA RP-5's restarted operations in January 2011 of the solids handling facility (SHF) since the February 2009 SHF shut down.

Emission Calculations

Maximum heat input rate: 3.75 mmBtu/hr
Natural gas HHV: 1,050 Btu/scf
Natural gas F-Factor: 8710 dscf/mmBtu
Estimated digester gas HHV: 735 Btu/scf
Estimated digester gas F-Factor: 8900 dscf/mmBtu
8,900 dscf/mmBtu x 3.75 mmBtu/hr = 33,375 dscfh = 556 dscfm exhaust

Fuel consumption (NG) = 3,750,000 Btu/hr x scf/1,050 Btu
= 3,571 scfh = 60 scfm
= 60 scfm natural gas x 13.5 scfm combustion products/scfm gas
= 810 scfm (exhaust flow rate)

Fuel consumption (DG) = 3,750,000 Btu/hr x scf/735 Btu
= 5,102 scfh = 85 scfm
= 85 scfm natural gas x 13.5 scfm combustion products/scfm gas (assumed)
= 1,148 scfm (exhaust flow rate)

Emissions listed in **bold font** below are used for NSR purposes.

CO emissions

A/N 449065 (boiler no. 2) source test (3/12/2009): 31.1 ppm @ 3% O2 (NG), 28.4 ppm @ 3% O2 (DG)

AER Emission Factors (NG): 84.00 lb/mmscfNG
NG: 84.00 lb/mmscfNG x mmscfNG/1E6scfNG x 3,571 scfhNG = 0.30 lbs/hr = 7.30 lbs/day (NSR)

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Rule 1146.1 requirement (NG): 400 ppmvd @ 3% O2 or 0.30 lbs/mmBtu

$$\text{NG: } 400 \text{ ppmvd @ 3\% O}_2 \times 7.27\text{E-}8 \text{ lb/ppm-scf} \times 8710 \text{ dscf/mmBtu} \times 20.9/(20.9-3) \times 3.75 \text{ mmBtu/hr}$$

$$= 0.98 \text{ lbs/hr} \qquad = 23.85 \text{ lbs/day (NSR)}$$

or

$$\text{NG: } 0.30 \text{ lbs/mmBtu} \times 3.75 \text{ mmBtu/hr} = 1.13 \text{ lbs/hr} = 27.50 \text{ lbs/day (NSR)}$$

Rule 1146.1 requirement (DG): 400 ppmvd @ 3% O2

$$\text{DG: } 400 \text{ ppmvd @ 3\% O}_2 \times 7.27\text{E-}8 \text{ lb/ppm-scf} \times 8900 \text{ dscf/mmBtu} \times 20.9/(20.9-3) \times 3.75 \text{ mmBtu/hr}$$

$$= 1.13 \text{ lbs/hr} \qquad = 27.50 \text{ lbs/day (NSR)}$$

Rule 1303 BACT requirement (NG): 100 ppmvd @ 3% O2 (watertube)

$$\text{NG: } 100 \text{ ppmvd @ 3\% O}_2 \times 7.27\text{E-}8 \text{ lb/ppm-scf} \times 8710 \text{ dscf/mmBtu} \times 20.9/(20.9-3) \times 3.75$$

$$\text{mmBtu/hr} \qquad = 0.28 \text{ lbs/hr} \qquad = 6.81 \text{ lbs/day (NSR)}$$

Rule 1303 BACT requirement (DG): 100 ppmvd @ 3% O2

$$\text{DG: } 100 \text{ ppmvd @ 3\% O}_2 \times 7.27\text{E-}8 \text{ lb/ppm-scf} \times 8900 \text{ dscf/mmBtu} \times 20.9/(20.9-3) \times 3.75$$

$$\text{mmBtu/hr} \qquad = 0.28 \text{ lbs/hr} \qquad = 6.81 \text{ lbs/day (NSR)}$$

$$\text{Maximum monthly emission: } 0.28 \text{ lbs/hr} \times 24 \text{ hr/day} \times 365 \text{ day/yr} \times \text{yr}/12\text{month} = 204.4 \text{ lbs/month}$$

Rule 1303 Modeling requirement (> 2 < 5mmBTU), CO: 17.1 lbs/hr > 0.28 lbs/hr

NOx emissions (as NO2)

A/N 449065 (boiler no. 2) source test (3/12/2009): 6.88 ppm @ 3% O2 (NG), 6.86 ppm @ 3% O2 (DG)

AER Emission Factors (NG): 100.00 lb/mmscfNG

$$\text{NG: } 100.00 \text{ lb/mmscfNG} \times \text{mmscfNG}/1\text{E}6\text{scfNG} \times 3,571 \text{ scfhNG} = 3.57 \text{ lbs/hr} = 86.87 \text{ lbs/day (NSR)}$$

Rule 1146.1 requirement (DG): 30 ppmvd @ 3% O2

$$\text{DG: } 30 \text{ ppmvd @ 3\% O}_2 \times 1.194\text{E-}7 \text{ lb/ppm-scf} \times 8900 \text{ dscf/mmBtu} \times 20.9/(20.9-3) \times 3.75$$

$$\text{mmBtu/hr} \qquad = 0.14 \text{ lbs/hr} \qquad = 3.41 \text{ lbs/day (NSR)}$$

$$\text{Maximum monthly emission: } 0.14 \text{ lbs/hr} \times 24 \text{ hr/day} \times 365 \text{ day/yr} \times \text{yr}/12\text{month} = 102.2 \text{ lbs/month}$$

Rule 1146.1 requirement (DG): 15 ppmvd @ 3% O2 (effective 1/1/2015)

$$\text{DG: } 15 \text{ ppmvd @ 3\% O}_2 \times 1.194\text{E-}7 \text{ lb/ppm-scf} \times 8,900 \text{ dscf/mmBtu} \times 20.9/(20.9-3) \times 3.75 \text{ mmBtu/hr}$$

$$= 0.07 \text{ lbs/hr} \qquad = 1.70 \text{ lbs/day (NSR)}$$

Rule 1146.1 requirement (NG): 9 ppmvd @ 3% O2 or 0.011 lbs/mmBtu

$$\text{NG: } 9 \text{ ppmvd @ 3\% O}_2 \times 1.194\text{E-}7 \text{ lb/ppm-scf} \times 8710 \text{ dscf/mmBtu} \times 20.9/(20.9-3) \times 3.75 \text{ mmBtu/hr}$$

$$= 0.04 \text{ lbs/hr} \qquad = 0.97 \text{ lbs/day (NSR)}$$

or

$$\text{NG: } 0.011 \text{ lbs/mmBtu} \times 3.75 \text{ mmBtu/hr} = 0.04 \text{ lbs/hr} = 0.97 \text{ lbs/day (NSR)}$$

Rule 1303 BACT requirement (NG): 12 ppmvd @ 3% O2

$$\text{NG: } 12 \text{ ppmvd @ 3\% O}_2 \times 1.194\text{E-}7 \text{ lb/ppm-scf} \times 8710 \text{ dscf/mmBtu} \times 20.9/(20.9-3) \times 3.75 \text{ mmBtu/hr}$$

$$= 0.05 \text{ lbs/hr} \qquad = 1.22 \text{ lbs/day (NSR)}$$

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Rule 1303 BACT requirement (DG): 30 ppmvd @ 3% O2

DG: 30 ppmvd @ 3% O2 x 1.194E-7 lb/ppm-scf x 8900 dscf/mmBtu x 20.9/(20.9-3) x 3.75 mmBtu/hr = 0.14 lbs/hr = 3.41 lbs/day (NSR)
Maximum monthly emission: 0.14 lbs/hr x 24 hr/day x 365 day/yr x yr/12month = 102.2 lbs/month

Rule 1303 Modeling requirement (> 2 < 5mmBTU), NOx: 0.31 lbs/hr ≥ 0.14 lbs/hr

PM10 emissions

A/N 449065 (boiler no. 2) source test (12/11/2012) Total PM: 0.0028 grain/scf, 0.011 lbs/hr (DG)

Previous permitted emission limit: 0.02 lbs/hr = 0 lbs/day (NSR)

AER Emission Factors (NG): 7.60 lb/mmscfNG

NG: 7.60 lb/mmscfNG x mmscfNG/1E6scfNG x 3,571 scfhNG x 0.97PM10/PM*
= 0.03 lbs/hr = 0.73 lbs/day (NSR)

AER Emission Factors (DG): 7.60 lb/mmscfDG (assume emission factor for NG is the same for DG)

DG: 7.60 lb/mmscfNG x mmscfNG/1E6scfNG x 5,102 scfhDG x 0.97PM10/PM*
= 0.04 lbs/hr = 0.97 lbs/day (NSR)

Maximum monthly emission: 0.04 lbs/hr x 24 hr/day x 365 day/yr x yr/12month = 29.2 lbs/month

*Based on Weight Fraction for PM Category by Size Distribution for Utility Boilers-Residual

Rule 1303 BACT requirement (NG): Using natural gas

Rule 1303 BACT requirement (DG): 0.1 grain/scf @ 12% CO2 (Rule 409)

DG: 0.1 grain/scf @ 12% CO2 x 1,148 scfm x 60 min/hr x 1lb/7000grains x 0.97PM10/PM*
= 0.95 lbs/hr = 23.12 lbs/day (NSR)

*Based on Weight Fraction for PM Category by Size Distribution for Utility Boilers-Residual

Rule 1303 Modeling requirement (> 2 < 5mmBTU), PM10: 1.9 lbs/hr > 0.02 lbs/hr

Rule 404 requirement (NG): Exhaust flow rate: 810 dscfm, 0.196 grains/dscf

NG: 0.196 grains/dscf x 810 dscfm x 60min/hr x 1lb/7000grains = 1.36 lbs/hr > 0.02 lbs/hr

Rule 404 requirement (DG): Exhaust flow rate: 1,148 dscfm, 0.178 grains/dscf

DG: 0.178 grains/dscf x 1,148 dscfm x 60min/hr x 1lb/7000grains = 1.75 lbs/hr > 0.02 lbs/hr

Rule 409 requirement (NG): 0.1 grain/scf @ 12% CO2

NG: 0.1 grains/dscf @ 12% CO2 x 810 dscfm x 60min/hr x 1lb/7000grains = 0.69 lbs/hr > 0.02 lbs/hr

Rule 409 requirement (DG): 0.1 grain/scf @ 12% CO2

DG: 0.1 grains/dscf @ 12% CO2 x 1,148 dscfm x 60min/hr x 1lb/7000grains = 0.95 lbs/hr > 0.02 lbs/hr

ROG emissions

A/N 449065 (boiler no. 2) source test (12/11/2012) TNMOC: 2.3 ppmv, 0.0008 lbs/hr (NG);
12.2 ppmv, 0.014 lbs/hr (DG)

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Previous permitted emission limit: 0.03 lbs/hr = 0.73 lbs/day (NSR)

AER Emission Factors (NG): 5.50 lb/mmscfNG

NG: 5.50 lb/mmscfNG x mmscfNG/1E6scfNG x 3,571 scfhNG = 0.02 lbs/hr = 0.24 lbs/day (NSR)

AER Emission Factors (DG): 5.50 lb/mmscfDG (assume emission factor for NG is the same for DG)

DG: 5.50 lb/mmscfNG x mmscfNG/1E6scfNG x 5,102 scfhDG = 0.03 lbs/hr = 0.73 lbs/day (NSR)

Maximum monthly emission: 0.03 lbs/hr x 24 hr/day x 365 day/yr x yr/12month = 21.9 lbs/month

SOx emissions

Previous permitted emission limit: 0.046 ~ 0.05 lbs/hr = 1.22 lbs/day (NSR)

AER Emission Factors (NG): 0.60 lb/mmscfNG

NG: 0.60 lb/mmscfNG x mmscfNG/1E6scfNG x 3,571 scfhNG = 0.002 ~0 lbs/hr = 0 lbs/day (NSR)

AER Emission Factors (DG): 0.60 lb/mmscfDG (assume emission factor for NG is the same for DG)

DG: 0.60 lb/mmscfNG x mmscfNG/1E6scfNG x 5,102 scfhDG = 0.003 ~0 lbs/hr = 0 lbs/day (NSR)

Rule 1303 BACT requirement (NG): Using natural gas

Rule 431.1 compliance: 1) NG ≤ 16 ppmv, 2) Facility wide emission < 5 lbs/day, 3) 40 ppmv w/CFGMS

1) 16 ppmv x 1,286 scfm x 60 min/hr x lb-moleH2S/379x10⁶ ft³ x lbmoleSO2/lbmoleH2S x 64.07
lbsSO2/lbmole SO2 = 0.21 lbs/hr SOx (as SO2)

2) 5 lbs/day H2S x lb-mole/34.08 lbsH2S x 64.07 lbsSOx/lb-mole = 9.40 lbs/day SOx (as SO2)
= 0.39 lbs/hr SOx (as SO2)

3) 40 ppmvH2S(in DG) x 5,102 scfhDG x lb-moleH2S/379x10⁶ ft³ x lbmoleSO2/lbmoleH2S x 64.07
lbsSO2/lbmole SO2 = 0.03 lbs/hr 0.73 lbs/day (NSR)

Maximum monthly emission: 0.03 lbs/hr x 24 hr/day x 365 day/yr x yr/12month = 21.9 lbs/month

Annual Emissions (AER 2012) SOx emission: 0.158 tons/yr

0.158 tons/yr x 2,000lbs/ton x 1yr/365days = 0.87 lbs/day SOx = 0.04 lbs/hr SOx

CO2 emissions

EPA AP 42 Emission Factors (NG): 120,000 lb/mmscf

NG: 120,000 lb/mmscf x 3.75 mmBtu/hr / 1050 Btu/scf = 428.57 lbs/hr = 10,428.54lbs/day (NSR)

The Climate Registry 2013 Default Emission Factors (NG): 53.06 kg/mmBtu

NG: 53.06 kg/mmBtu x 2.2046 lb/kg x 3.75 mmBtu/hr = 438.66 lbs/hr = 10,674.06 lbs/day (NSR)

1) The Climate Registry 2013 Default Emission Factors (DG): 52.07 kg/mmBtu

DG: 52.07 kg/mmBtu x 2.2046 lb/kg x 3.75 mmBtu/hr = 430.48 lbs/hr = 10,475.01 lbs/day (NSR)

2) Assume DG is 30% CO2.

30% x 5,102 scfhDG x lb-moleH2S/379 ft³ x 44.01 lbsCO2/lbmole CO2

= 177.74 lbs/hr = 4,325.01 lbs/day (NSR)

Total emissions

430.48 lbs/hr + 177.74 lbs/hr = 608.22 lbs/hr = 14,800.02 lbs/day (NSR)

Maximum monthly emission: 608.22 lbs/hr x 24 hr/day x 365 day/yr x yr/12month = 444,000.6 lbs/month

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CH4 emissions

EPA AP 42 Emission Factors (NG): 2.3 lb/mmscf

NG: 2.3 lb/mmscf x 3.75 mmBtu/hr / 1050 Btu/scf = 0.008 ~ 0.01 lbs/hr = 0.24 lbs/day (NSR)

The Climate Registry 2013 Default Emission Factors (NG): 0.0009 kg/mmBtu

NG: 0.0009 kg/mmBtu x 2.2046 lb/kg x 3.75 mmBtu/hr = 0.007 ~ 0.01 lbs/hr = 0.24 lbs/day (NSR)

The Climate Registry 2013 Default Emission Factors (DG): 0.0032 kg/mmBtu

DG: 0.0032 kg/mmBtu x 2.2046 lb/kg x 3.75 mmBtu/hr = 0.03 lbs/hr = 0.73 lbs/day (NSR)

Maximum monthly emission: 0.03 lbs/hr x 24 hr/day x 365 day/yr x yr/12month = 21.9 lbs/month

N2O emissions

EPA AP 42 Emission Factors (NG): 0.64 lb/mmscf

NG: 0.64 lb/mmscf x 3.75 mmBtu/hr / 1050 Btu/scf = 0.002 ~ 0.00 lbs/hr = 0 lbs/day (NSR)

The Climate Registry 2013 Default Emission Factors (NG): 0.0009 kg/mmBtu

NG: 0.0009 kg/mmBtu x 2.2046 lb/kg x 3.75 mmBtu/hr = 0.007 ~ 0.01 lbs/hr = 0.24 lbs/day (NSR)

Maximum monthly emission: 0.01 lbs/hr x 24 hr/day x 365 day/yr x yr/12month = 7.3 lbs/month

The Climate Registry 2013 Default Emission Factors (DG): 0.00063 kg/mmBtu

DG: 0.00063 kg/mmBtu x 2.2046 lb/kg x 3.75 mmBtu/hr = 0.005 ~ 0.01 lbs/hr = 0.24 lbs/day (NSR)

Toxic Risk Analysis

There is no expected increase of emissions or health risk due to the Permit to Construct to Permit to Operate conversion.

Rules Evaluation

Rule 212: Rule 212 (c)(1)- There is no school within 1000 feet of the facility.
 Rule 212 (c)(2)- On-site emission increases does not exceed the following:

Volatile Organic Compounds	30 lbs/day
Nitrogen Oxides	40 lbs/day
PM10	30 lbs/day
Sulfur Dioxide	60 lbs/day
Carbon Monoxide	220 lbs/day
Lead	3 lbs/day

Rule 212(c)(3)(A)(i)- MICR is expected to be below 1 in a million.
Public Notice is not required.

Rule 401: Visible Emissions
 No violations are expected, limits are listed under Rule 401(b)(1).

Rule 402: Nuisance

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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 two 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 ≤ 16 ppmv sulfur compounds as H₂S.
 Rule 431.1(c)(2)- Other gases ≤ 40 ppmv sulfur compounds as H₂S, averaged over 4 hours.
 Rule 431.1(d)(1)- If burning gaseous fuels, other than exclusively natural gas, in stationary equipment shall have a properly operating continuous fuel gas monitoring system (CFGMS) to determine the sulfur content, calculated as H₂S, of the fuel gas prior to burning; or a continuous emission monitoring system (CEMS) to determine SO_x emissions after burning. All continuous monitors require District approval, which shall be based on the requirements as specified in Attachment A.
 Rule 431.1(d)(1)(B)- A person subject to paragraph (c)(4) of this rule shall comply with paragraphs (d)(1) & (d)(2) no later than 12 months after the date a Permit to Construct is issued by the District for a sulfur removal system or comply with paragraph (d)(3).
 Rule 431.1(d)(1)(C)- Compliance with the Table 1 sulfur limits shall be determined based on readings obtained from an approved continuous monitor.
 Rule 431.1(d)(2)- A person installing a continuous monitor shall submit to the District for approval, a quality assurance procedure as specified in U.S. EPA 40 CFR, Part 60, Appendix F, Procedure 1 for CEMS and, as applicable, for CFGMS.
 Rule 431.1(d)(2)(A)- The quality assurance procedure specified above shall be submitted to the District for written approval by the Executive Officer prior to the CFGMS or CEMS final certification.
 Rule 431.1(d)(2)(B)- Any CFGMS or CEMS deemed to be out of control, as specified in Attachment A, according to the facility quality assurance procedure approved by the Executive Officer shall be corrected within 72 hours.
 Rule 431.1(d)(2)(B)(i)- The person operating the CFGMS or CEMS shall notify the Executive Officer by telephone or facsimile of any breakdown(s) of the monitoring systems if the duration of the breakdown is in excess of 60 minutes or if there are three or more breakdowns in any one day within 24 hours of the occurrence of the breakdown which triggers notification. Such report shall identify the time, location, equipment involved, and contact person.
 Rule 431.1(d)(2)(B)(ii)- The person who complies with the provisions of clause (d)(2)(B)(i) and paragraph (e)(3) shall not be considered in violation of this rule for the 72 hour period of breakdown provided that the breakdown did not result from operator error, neglect or improper operation or maintenance procedures.

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Rule 431.1(d)(3)- A person burning landfill gas or sewage digester gas, or who is subject to paragraph (c)(4) of this rule may use an alternative monitoring method, in lieu of the requirements in paragraphs (d)(1) and (d)(2), that ensures compliance with the daily total sulfur content limitation as specified in Table 1. Alternative monitoring methods shall not be used unless first approved in writing by the Executive Officers of the District, the CARB, and the Regional Administrator of the EPA, Region IX, or their designees.

Rule 431.1(d)(3)(A)- At a minimum, the alternative monitoring method shall meet the guidelines of Attachment A, Section III.

Rule 431.1(d)(3)(B)- A person subject to (c)(4) of this rule shall submit an alternative monitoring method for approval no later than 45 days after the date a Permit to Construct a sulfur removal system is issued.

Rule 431.1(d)(3)(C)- All monitoring must comply with the approved alternative monitoring method.

Rule 431.1(g)(8)- Any facility which emits less than 5 pounds per day total sulfur compounds, calculated as H₂S from the burning of gaseous fuels other than natural gas (not applicable to (c)(1)).

This facility is expected to comply either with sulfur limits as required or exemption requirement under Rule 431.1(g)(8). Compliance is expected.

Rule 53A: San Bernardino County – Specific Contaminants (Contained in Addendum to Reg IV)
Rule 53A(a)- Sulfur compound emission limit, as SO₂ 500 ppmv. Compliance is expected due to biofilter H₂S surface emission limits.

Rule 53(b)- Combustion contaminants, this permit unit does not contain any combustion equipment, although the combustion equipment on site is expected to be in compliance.

Rule 53(c)- HF, HC, HBr, Br₂, Cl₂, F₂, and other fluorine compounds are to be controlled to the maximum degree technically feasible. There is no expected potential emission from the above listed compounds from this equipment. Compliance is expected.

Reg IX: Part 63, Chapter I, Title 40 of Code of Federal Regulations, Subpart DDDDD- National Emissions Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters
63.07485- Not applicable, since industrial, commercial, or institutional boiler or process heater is not located at or part of a major source of HAP.

Rule 1146.1: Rule 1146.1: Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters

Rule 1146.1(a)- Rule applicable to boiler ≥ 2 , < 5 mmBtu/hr in all industrial, institutional, or commercial operations. Equipment is applicable to this rule.

Rule 1146.1(c)(1) - NO_x emission limit: 30 ppmd @3%O₂ or 0.037 lbs/mmBtu (NG).

Rule 1146.1(c)(2)- NG Units: NO_x emission limit: 9 ppmd @3%O₂ or 0.011 lbs/mmBtu (NG). DG Units (effective 1/1/2015): 15 ppmd @3%O₂. March 12, 2009 source test demonstrates compliance with all limits.

Rule 1146.1(c)(4)- Heat input capacity ≥ 2 mmBtu/hr, shall exceed CO 400 ppmd 3%O₂ or 0.30 lbs/mmBtu (NG). March 12, 2009 source test demonstrates compliance.

Rule 1146.1(c)(7)- Those that choose the lb/mmBtu limit shall install a non-resettable totalizing fuel meter to measure the total of each fuel used by each individual unit, as approved by the Executive Officer.

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Rule 1146.1(d)(2)- All emission determinations shall be made in as-found operating condition, except during start up, shutdown, or under breakdown conditions. Compliance determination shall be conducted at least 250 operating hours, or at least 30 days subsequent to tuning or servicing of any unit, unless it is an unscheduled repair.

Rule 1146.1(d)(4)- NOx and CO emission requirements shall be determined using District approved contractor under the LAP.

Rule 1146.1(d)(6)- Compliance determination with NOx emission requirements shall be conducted once every 5 years.

Rule 1146.1(d)(7)(A)- Shall check NOx emissions with a portable NOx, CO and O2 analyzer according to the Protocol for the Periodic Monitoring of Nitrogen Oxides, Carbon Monoxide, and Oxygen from Units Subject to SCAQMD Rules 1146 and 1146.1 at least quarterly or every 2,000 unit operating hours, whichever occurs later. If a unit is in compliance for four consecutive emission checks, without any adjustments to the oxygen sensor set point, then the unit may be checked semi-annually or every 4,000 unit operating hours, whichever occurs later, until there is an emission check indicating noncompliance.

Rule 1146.1(d)(7)(C)- Records shall be maintained for a rolling 12 month period of 2 years and shall be made available to SCAQMD personnel upon request.

Rule 1146.1(d)(7)(D)- Portable analyzer tests shall only be conducted by a person who has completed District approved training program in the operation of portable analyzers and has received a certification issued by the District.

Rule 1146.1(d)(8)- Comply with requirements as applied to CO in (d)(6) or (d)(7). Compliance with all applicable requirements of this Rule is expected.

Rule 1147 NOx Reductions From Miscellaneous Sources

Rule 1147(a)- Applicability: not applicable to boilers subject to SCAQMD Rule 1146.1.

Reg XIII: Rule 1303(a)- There is no increase of emissions due to the conversion of the Permits to Construct to Permits to Operate. Therefore LAER/BACT is not required, but was already applied to the equipment at the time of the Permit to Construct.

BACT Natural gas: CO: 50 ppmvd 3%O2(firetube), NOx: 12 ppmvd 3%O2, SOx & PM10: Natural gas.

BACT Digester gas: CO: 100 ppmvd @ 3%O2, NOx: 30 ppmvd @ 3%O2, PM10: 0.1 gram/scf @ 12%CO2.

Rule 1303(b)(1)- There are no increases of emissions due to the conversion of the Permits to Construct to Permits to Operate, modeling is not required. Although NOx, CO and PM10 are less than the allowable emissions in Table A-1 (1303 Appendix A).

Rule 1303(b)(2)- There is no increase of emissions due to the conversion of the Permits to Construct to Permits to Operate. 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 1.0×10^{-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.

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Compliance is expected

Rule 1401.1: Rule 1401.1(b)- Equipment is exempt since it is located at an existing facility.

Reg. XXX: Converting the DG or NG boilers Permits to Construct into Permits to Operate , removing Permit to Construct requirements which are no longer applicable, revising source testing requirements, updating equipment description, and clarifying rule requirements is considered a Title V Minor permit revision under Rule 3000(b)(15), since the 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 Operate is recommended for applications 449064 and 449065. For Permit Conditions please see Sample Permit. A revised Title V permit is recommended after EPA review.