



MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT

14306 Park Avenue Victorville, CA 92392-2310
760.245.1661 -- 800.635.4617 -- FAX 760.245.2022

AUTHORITY TO CONSTRUCT

B015033

If construction is not completed by the expiration date of this permit, it may be renewed for one additional year upon payment of applicable fees. Any additional extension will require the written approval of the Air Pollution Control Officer. This Authority to Construct may serve as a temporary Permit to Operate provided the APCO is given prior notice of intent to operate and the Permit to Operate is not specifically denied.

EXPIRES LAST DAY OF: APRIL 2025

OWNER OF OPERATOR (Co. #3025)

StratosFuel, Inc.
P.O. Box 1446
Riverside, CA 92502

EQUIPMENT LOCATION (Fac. #4460)

Mojave River Hydrogen Facility
TBD
Victorville, CA 92394

Description:

PROCESS HEATER, STEAM METHANE REFORMER (SMR) consisting of: One Steam Methane Reformer, burner design rating of 68.28 MMBtu/hr, manufactured by Boustead International Heaters (BIH); model no. TBD, serial no. TBD.

CONDITIONS:

1. This equipment shall be installed, operated and maintained in strict accordance with those recommendations of the manufacturer/supplier and/or sound engineering principles which produce the minimum emissions of contaminants. Unless otherwise noted, this equipment shall also be operated in accordance with all data and specifications submitted with the application(s) for this permit.

[District Rule 204]

2. Owner/operator shall combust only natural gas and pressure swing adsorption tail gas (PSA tail gas) in this steam methane reformer. The natural gas fuel combusted by this equipment is limited to using only PUC-Regulated pipeline quality natural gas. The PSA tail gas combusted by this equipment is limited to a sulfur concentration of 40 ppmv (as hydrogen sulfide) over a 4-hour averaging period.

[District Rule 431]

3. Sulfur content of the PSA tail gas combusted by this equipment shall be quantified once per quarter via Drager-Tube measurement. Records of quarterly sulfur content measurements shall be utilized in the monthly averaging of the sulfur content, as required under condition #6.

[District Rule 431]

Fee Schedule: 2 (e)

Rating: 68280000Btu

SIC: 2813

SCC: 30107101

Location/UTM(Km): 466E/3827N

This permit does not authorize the emission of air contaminants in excess of those allowed by law, including Division 26 of the Health and Safety Code of the State of California and the Rules and Regulations of the District. This permit cannot be construed as permission to violate existing laws, ordinances, statutes or regulations of this or other governmental agencies. This permit must be renewed by the expiration date above. If billing for renewal fee required by Rule 301(c) is not received by expiration date above, please contact the District.

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By: **COPY**
Brad Poiriez
Air Pollution Control Officer

4. The owner/operator shall monitor and record for this equipment the cumulative monthly and annual usage of both natural gas and PSA tail gas. The usage of each fuel shall be monitored using fuel meter(s) or calculated on equipment operation, and reported in standard cubic feet. A statement of the heat input for the previous calendar year shall be submitted to the District by March 1 each year. This report may be submitted electronically to reporting@mdaqmd.ca.gov.
[District Rules 431, 1157(C)(5)(a) and (E)(2)(a), and 1302]

5. The post-SCR (MDAQMD permit no. C015035) emissions from the fuel combustion at these burners shall not exceed the following emission limits as verified by the source tests required in Condition #7:

- a. NOx: No more than 0.341 lb/hr and no more than 0.006 lb/MMBtu;
- b. CO: No more than 0.936 lb/hr;
- c. PM10: No more than 0.785 lb/hr, nor more than 20% opacity; and,
- d. VOC: No more than 0.203 lb/hr.

[District Rules 1157(C)(3)(b)(iv), 1302, 1303 and 1320]

6. The owner/operator shall maintain an operations log for this equipment on-site and current for a minimum of five (5) years, and log shall be provided to District personnel upon request. The operations log shall include, at a minimum, the following information:

- a. Total operation time (hours per month and an annual total);
- b. Total volume of each fuel (both natural gas and PSA tail gas) and combined fuel combusted on a monthly and annual basis (reported in standard cubic feet);
- c. Monthly average sulfur content of the PSA tail gas fuel. Records of quarterly sulfur content measurements, as required by condition #3, shall be utilized in the monthly averaging of the sulfur content;
- d. Results of the quarterly sulfur measurements, as required by condition #3;
- e. Results of all initial and annual source testing, as required by condition #7;
- f. Records of all maintenance and repair actions performed on this equipment or the SCR (MDAQMD permit no. C015035) required to be operated concurrently with this equipment by description and date; and,
- g. Records of malfunctions, including dates and durations, a description of each malfunction, and the corrective action taken for each malfunction.

[District Rules 431, 1157 and 1302(C)(2)(a)]

7. The owner/operator must conduct an initial performance test (source test) for NOx, PM10, VOC and CO within 60 days of achieving full production rate, but in no case later than 180 days after initial startup. Additionally, annual source testing for NOx shall be conducted at least once in every 12 month period following the most current test date. The NOx source test must be conducted in accordance with USEPA Method 7E or CARB Method 100, the CO source test must be conducted in accordance with USEPA Method 10 or CARB Method 100, the VOC source test must be conducted in accordance with USEPA Method 18 or 25 or CARB Method 100, the PM10 source test must be conducted in accordance with USEPA Method 5 or CARB Method 5, and the Stack Gas Oxygen must be measured in accordance with USEPA Method 3 or 3A or ARB Method 100. All tests must be conducted while the burners are combusting at a minimum of 90% of the maximum heat input, considering the bottlenecking limitations of this specific emissions unit. The owner/operator must submit a source test protocol at least thirty (30) days prior to the scheduled source test date for District review and approval, and the owner/operator must conduct all required tests in accordance with the District-approved test protocol. The owner/operator must notify the District a minimum of ten (10) days prior to the first day of testing so that an observer may be present. The final source test results must be submitted to the District within forty-five (45) days of completion of the test. All compliance/certification test notifications, protocols, and results may be submitted electronically to reporting@mdaqmd.ca.gov
[District Rules 204, 1157, 1302, 1303 and 1320]

8. In the event of a malfunction of any emissions related part of this reformer, the unit must be shut down as soon as safely possible and shall not be restarted until all malfunctions have been corrected. Equipment breakdowns shall be reported to the District in accordance with District Rule 430.
[District Rules 430 and 1302]

9. The owner/operator shall monitor and record for this equipment the High Heat Value (HHV) for the PSA tail gas. PSA tail gas HHV determination must be conducted on an annual basis and shall be by one of the following test methods: ASTM D 1826-03, or ASTM D 1945-03 (2010), or D 1945-14 in conjunction with ASTM D 3588-98 (2003) for Gaseous Fuels. The HHV for natural gas may be obtained annually from the supplying public utility provider and documentation must be retained on site and provided upon District request.
[District Rule 1157(E)(2)(a)]

10. This equipment shall operate concurrently with the Selective Catalytic Reduction (SCR) system permitted under MDAQMD permit no. C015035. In the event of a malfunction of any emissions related part of this operation or associated control equipment, this process line must be shut down as soon as safely possible and shall not be restarted until all malfunctions have been corrected. Equipment breakdowns shall be reported to the District in accordance with District Rule 430.
[District Rules 430 and 1303]

11. The entire facility shall not emit any of the Regulated Pollutants listed below in excess of the following limits in any consecutive 12 month period to remain below the USEPA's Synthetic Minor - 80% (SM-80) threshold:

- a. Oxides of Nitrogen (NO_x): 20 tons per consecutive twelve (12) month period, measured as NO₂;
- b. Oxides of Sulfur (SO_x): 20 tons per consecutive twelve (12) month period;
- c. Volatile Organic Compounds (VOC): 20 tons per consecutive twelve (12) month period;
- d. Carbon Monoxide (CO): 80 tons per consecutive twelve (12) month period;
- e. Hydrogen Sulfide (H₂S): 8 tons per consecutive twelve (12) month period;
- f. Lead (Pb): 0.48 tons per consecutive twelve (12) month period;
- g. Particulate Matter 10 microns and less (PM₁₀): 14.5 tons per consecutive twelve (12) month period;
- h. Any single Hazardous Air Pollutant (HAP): 8 tons per consecutive twelve (12) month period; and,
- i. All HAPs combined: 20 tons per consecutive twelve (12) month period.

Compliance with these limits shall be demonstrated through the submission of a facility-wide Comprehensive Emission Inventory (CEI) for all emitted Regulated Air Pollutants. Exceedance of these emission limits may trigger offsets, BACT, National Emission Standards for Hazardous Air Pollutants (NESHAP), and/or require submission of a Title V permit application.
[District Rules 1302 and 1303]

12. A facility wide Comprehensive Emission Inventory (CEI) Plan and Report for all emitted criteria and toxic air pollutants must be submitted to the District, in a format approved by the District, upon District request.
[District Rule 107(b), H&S Code 39607 & 44341-44342 and 40 CFR 51, Subpart A]