



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

B013336

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: JUNE 2025

OWNER OF OPERATOR (Co. #2500)

5E Boron Americas, LLC
9329 Mariposa Rd. Suite # 210
Hesperia, CA 92344

EQUIPMENT LOCATION (Fac. #3893)

5E Boron Americas, LLC
27555 Hector Road
Newberry Springs, CA 92365

Description:

SOP MANNHEIM FURNACE #4 consisting of: A 20,000 Ton per Hour (Throughput to be verified with Applicant) Sulfate of Potash ('SOP' or Potassium Sulfate, K₂SO₄) production process manufactured by the Kindly Tech Trading Company (KTT). Heated to a nominal reaction temperature of 1100 degrees Fahrenheit with two 3.75 MMBtu/Hour Low-NOx burners using a maximum calculated fuel flow of 7,350 scfh of natural gas. HCl/Cl₂ gases are routed to one of four HCl adsorbers and then on to one of two caustic scrubbers and finally exhaust to atmosphere through baghouse C013601. Flue gases from the two burners go directly to the baghouse.

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 for this permit. [District Rules 204 and 1303]
2. This furnace shall only be fueled with PUC-Regulated pipeline quality natural gas. A dedicated fuel meter shall be installed to directly measure fuel usage. [District Rules 431, 1157 and 1303]
3. This furnace shall consume no more than 64.4 MMSCF of natural gas in any consecutive twelve month period. [District Rules 1302 and 1303]

Fee Schedule: 2 (d) Rating: 7500000Btu SIC: 1479 SCC: 3019003 Location/UTM(Km): 552E/3846N

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 natural gas burners shall not exceed the following emission limits as verified by the source tests required in Condition #5:

a. NO_x: 14 ppmvd measured as NO₂ at 3% O₂ nor more than 0.018 lb/MMBtu; and

b. CO: 80 ppmvd at 3% O₂ nor more than 0.059 lb/MMBtu.

All measurements shall be taken at the exit of the exhaust stack described in District Permit C013601.

[District Rules 1157, 1303, and 1320]

5. This equipment is a high annual heat input unit as defined in District Rule 1157; therefore, the owner/operator must conduct an initial performance test (source test) for NO_x 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 NO_x and CO shall be conducted at least once in every 12 month period following the most current test date. All measurements shall be taken at the exhaust of the baghouse described in District Permit C013601.

The NO_x 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, 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 furnace is running at a minimum load of 90%. Additionally, the VOCs vented from the solvent extraction process described in District Permit B013320 shall be vented to this burner during testing.

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(E)(1), and 1320]

6. This equipment shall only be operated in conjunction with one of the four HCl Absorbers described in District Permits B013344-B013347, one of the two scrubbers described in District Permits C013593-C013594, and the baghouse described in District Permit C013601. The absorber, scrubber, and baghouse must be fully functional and operating normally.

[District Rules 1302 and 1320]

7. Emissions from the entire facility shall not exceed the following limits:

a. Oxides of Nitrogen (NO_x): 24 tons per consecutive twelve month period, measured as NO₂;

b. Oxides of Sulfur (SO_x): 24 tons per consecutive twelve month period;

c. Volatile Organic Compounds (VOC): 24 tons per consecutive twelve month period;

d. Carbon Monoxide (CO): 95 tons per consecutive twelve month period;

e. Hydrogen Sulfide (H₂S): 9.5 tons per consecutive twelve month period;

f. Lead (Pb): 0.5 tons per consecutive twelve month period;

g. Particulate Matter 10 microns and less (PM₁₀): 14.5 tons per consecutive twelve month period;

h. Any single Hazardous Air Pollutant (HAP): 9.5 tons per consecutive twelve month period; and

i. All HAPs combined: 24 tons per consecutive twelve month period.

Compliance shall be demonstrated to the District through the submission of a District approved Comprehensive Emission Inventory Report (CEI) or other equivalent and District approved method.

[District Rules 1302 and 1320]

8. This furnace is subject to the requirements of District Rule 1157.

[District Rule 1157]

9. In the event of a malfunction of any emissions related part of this furnace, the HCl adsorber, caustic scrubber, or baghouse, the 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 1302]

10. The owner/operator must maintain an operations log for this equipment. This log shall be maintained current, kept for a total of five (5) years and be provided to authorized personnel upon request. The log shall contain the following at a minimum:

a. The monthly natural gas usage, in MMSCF.

b. Consecutive rolling 12 month period natural gas usage, in MMSCF.

c. Monthly SOP throughput, in tons;

- d. Times and durations of malfunctions, a description of each malfunction, and the corrective action taken for each malfunction.
- e. Calibration records for all monitoring devices.
- f. The results of the initial and all subsequent source tests (if any).
- g. Equipment vendor specifications and related operation and maintenance requirements for the furnace and its monitoring equipment.
- h. Fuel sulfur concentration (the owner/operator may use the supplier's certification of sulfur content if it is maintained as part of this log).

[District Rules 1157 and 1302]

11.A statement certifying the total heat input for this boiler for the previous calendar year shall be submitted to the District no later than March first each year. The District's default value for the High Heating Value of natural gas is 1020 Btu/scf. This statement may be submitted electronically to reporting@mdaqmd.ca.gov

[District Rule 1157(E)(2)(a)]

12.A facility wide Comprehensive Emission Inventory (CEI) 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]