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 B000483

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: DECEMBER 2026

OWNER OF OPERATOR (Co.#3254)

5E SVM Operations, LLC
13200 Main Street
Trona, CA 93562

EQUIPMENT LOCATION (Fac.#2)

SVM - Trona Plant
13200 Main Street
Trona, CA 93562

Description:
BOILER NO. 22, NATURAL GAS FIRED consisting of: Babcock and Wilcox, Type PF1-28'10"-16, Natural gas with fuel oil backup, heating surface 17,900 sq. ft., 300,000 lb/hr steam capacity @ 550 psig @ 760 degrees F, with four (4) 27" Babcock and Wilcox combination gas and oil burners rated at 418 million Btu/hr; forced draft Westinghouse fan, size 2371-D, style AKY-4655-2, driven by Elliot turbine drive, type 2BYRO, 750 bhp, inlet pressure 400 psig, outlet pressure 35 psig steam: Date of manufacture is pre-1960. ATC issued in April of 2024 is to implement BARCT for compliance options with District Rule 1157.1 which will change the description/capacity to the following: Babcock and Wilcox, Type PF1-28'10"-16, Natural gas fired, heating surface 17,900 sq. ft., 300,000 lb/hr steam capacity @ 760 psig @ 650 degrees F, with four (4) 27" NAT-COM combination gas burners rated at 384 million Btu/hr; forced draft Westinghouse fan, size 2371-D, style AKY-4655-2, driven by Elliot turbine drive, type 2BYRO, 750 bhp, inlet pressure 400 psig, outlet pressure 35 psig steam, with flue gas recirculation. Date of manufacture is pre-1960. BARCT includes the Selective Catalytic Reduction (SCR) System under District permit C014967.

EQUIPMENT

Capacity	Equipment Description
384	Rated for 384 MMBtu/hr heat input

CONDITIONS:

Fee Schedule: 2 (f) Rating: 384000000 Btu SIC: 1474 SCC: 10200601 Location/UTM(Km): 466E/3957N

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.

5E SVM Operations, LLC
P.O. Box 367
Trona, CA 93592-0367

By: **COPY**
Brad Poiriez
Executive Director

UNOFFICIAL

1. This equipment (Boiler No. 22) must be fired under the following conditions:
(a) Boiler No. 22 shall not operate in excess of 354,262 MMBtu/year of heat input, except under the operating condition specified in item (b) or (c) below.
(b) Boiler No. 22, Boiler No. 25, and Boiler No. 26 shall not exceed a combined heat input of 2,050 MMBtu/hr and a combined hourly NOx limit of 442 lb/hr.
(c) Once BARCT has been installed on Boiler No. 22 (as described under the ATC Equipment Description), Boiler No. 22, Boiler No. 25, and Boiler No. 26 shall not exceed a combined heat input of 2,050 MMBtu/hr and a combined hourly NOx limit of 410 lb/hr.
[District Rule 1303]

2. To demonstrate compliance with Condition 1 above, the owner/operator must adhere to the monitoring and record requirements of Condition 8. In addition, compliance with Conditions 1(b) and 1 (c) above, the owner/operator must maintain records of hourly CEMS data for Boiler No. 22 (once CEMS is installed when the BARCT modification is installed), Boiler No. 25, and Boiler No. 26. The owner/operator must also maintain records of Boiler No. 22 operating hours and firing rate (using a fuel meter and hour meter), separately reporting hours and total MMBTU fired where Boiler No. 22 operated under condition 1(a) or under conditions (1)(b)/1(c) (where condition (1)(c) applies once BARCT has been installed on Boiler No. 22). These records must be kept for at least five (5) years and made available to the District, state, or federal personnel upon request.
[District Rule 1303; 40 CFR 70.6(a)(3)(B) - Periodic Monitoring Requirements]

3. Reports of hourly and annual NOx emission totals for Boiler No. 22 under each of the three operating scenarios under condition 1 (operating in parallel with Boiler No. 25 and Boiler No. 26 versus operating when either Boiler No. 25, Boiler No. 26 or both are not operating) will be submitted to MDAQMD upon request.
[District Rule 1303]

4. To demonstrate compliance with District Rule 1157.1 (effective December 31, 2023), the owner/operator may operate this unit as a "Low Annual Heat Input Unit"; therefore; this unit may be operated with an annual heat input of less than 50,000 million Btu.
[District Rule 1157.1(B)(1)(i)]

5. When the owner/operator is operating this equipment as a Low Annual Heat Input Unit, this equipment shall be tuned at least annually pursuant to the provisions of District Rule 1157.1(C)(3)(b)(iii).
[District Rule 1157.1(C)(3)(b)(iii)]

6. To demonstrate compliance with District Rule 1157.1 (effective December 31, 2023), the owner/operator may operate this equipment as a "High Annual Heat Input Unit", meaning the annual heat input is greater than or equal to 50,000 million Btu. When the owner/operator operates this equipment as a High Annual Heat Input Unit the equipment shall not emit:
(a) CO in excess of 400 ppmv measured by volume on a dry basis at 3% oxygen; and,
(b) NOx in excess of 30 ppmv measured by volume on a dry basis at 3% oxygen, and/or 0.036lbs.MMBtu of heat input when operated on Gaseous Fuel; and,
(c) NOx in excess of 40 ppm, and/or 0.052 lbs/MMBtu of heat input, when operated on CARB Diesel Fuel; and,
(d) NOx in excess of the heat-input weighted average of the limits specified in (C)(3)(a)(ii) and (C)(3)(a)(iii) of District Rule 1157.1 when operated on combinates of Gaseous and/or CARB Diesel Fuel.
Compliance with these limits must be demonstrated on an annual basis by the source testing requirements of Condition 13:
[District Rule 1157.1(C)(3)]

7. In order to monitor the fuel firing of different fuels, the owner/operator must:
(a) Install mass flow rate meters in each fuel line; or
(b) Install volumetric flow rate meters in conjunction with temperature and pressure probes in each fuel line; or
(c) Maintain a fuel log.
The owner/operator must record and maintain the amount of each fuel combusted during each consecutive calendar month. These records must be kept for at least five (5) years, and made available to District, state, or federal personnel upon request.
[District Rule 1157.1(C)(5)]

8. The owner/operator shall monitor and record for this equipment the High Heat Value, hourly heat input, and cumulative annual usage of each fuel. The usage of each fuel shall be monitored from utility service meters, purchase or tank fill records. 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 Rule 1157.1(E)(2)(a); District Regulation XIII]

9. This equipment shall only be operated on pipeline quality natural gas as the primary fuel, except that CARB diesel fuel can be burned only during periods of natural gas curtailment, gas supply interruptions, startups, or for periodic testing, maintenance, or operator training on liquid fuel. Periodic testing, maintenance, or operator training on liquid fuel shall not exceed a combined total of 48 hours during any calendar year. Additionally, the owner/operator must employ good combustion practices to minimize excess emissions while operating this equipment.
[District Rules 431 and 1303(A) - BACT; 40 CFR 63.11237 - Definition of Gas-fired Boiler for exemption from 40 CFR 63, Subpart JJJJJJ]

Whenever this equipment is operated on CARB Diesel Fuel the owner/operator must keep the following records:
(a) The date of operation;
(b) The reason the equipment was operated on CARB Diesel (curtailment, testing, maintenance, training, etc.);
(c) The duration of the operation on CARB Diesel in hours;
(d) The amount of CARB Diesel Fuel used; and,
(e) Safety Data Sheet(s) (SDS) or other purchase records demonstrating the fuel meets the definition of CARB Diesel.
These records must be kept for at least five (5) years, and made available to District, state, or federal personnel upon request.

"CARB Diesel Fuel" means any diesel fuel that is commonly or commercially known, sold, or represented by the supplier as diesel fuel No. 1-D or No. 2-D, pursuant to the specification for Diesel Fuel Oils D975-81, and that meets the specifications defined in title 13 Cal. Code Regs., sections 2281, 2282, and 2284.

[District Rule 431; 40 CFR 63.11237 - Definition of Gas-fired Boiler for exemption from 40 CFR 63, Subpart JJJJJJ]

10. During periods of unexpected curtailment of normal Gaseous Fuels, this equipment, which normally burns only Gaseous Fuel, shall comply with a NOx emission limit of either:
(a) 150 ppmv, measured by volume on a dry basis at 3% oxygen or,
(b) 0.215 lbs/MMBtu of heat input when burning Liquid Fuel (CARB Diesel).
These limits shall not exceed the period of natural gas curtailment, and specifically includes equipment and emission testing time not exceeding 48 hours per calendar year.
[District Rules 431 and 1157.1(D)(1)]

11. The owner/operator shall operate this boiler in accordance with all applicable requirements of District Rule 1157.1 - BARCT Requirements for Boilers and Process Heaters Outside the FONA.
[District Rule 1157.1]
District and State Enforceable Only

12. This equipment must not exceed the following emission limits at any firing rate after the BARCT modification (as described in the Equipment Description) is installed:
(a) Hourly rates, computed every 15 consecutive minutes, verified by CEMS and compliance testing as outlined by Condition 13:
(i) NOx: 2.34 lbs/hr and 5 ppmv, measured by volume on a dry basis at 3% oxygen averaged over one hour.
(ii) CO: 28.5 lbs/hr, and 100 ppmv, measured by volume on a dry basis at 3% oxygen averaged over one hour.
(b) Hourly limits demonstrated on an annual basis by compliance testing:
(i) NH3: 1.73 lbs/hr and 10 ppmv, measured by volume on a dry basis at 3% oxygen averaged over three hours.
[District Rules 1303(A) - BACT; 40 CFR 70.6 (a)(3)(B) - Periodic Monitoring Requirements]

13. Initial (within 180 days of completion of the BARCT modification installment) and annual compliance tests (at least once every 12 months) must be performed on this boiler and its air pollution control equipment Selective Catalytic Reduction System (C014967). The owner/operator must submit a compliance/source test protocol at least thirty (30) days prior to the compliance/source test date. The owner/operator must conduct all required compliance/source tests in accordance with a District-approved test protocol. The owner/operator must notify the District a minimum of ten (10) days prior to the compliance/source test date so that an observer may be present. The final compliance/source test results must be submitted to the District within forty-five (45) days of completion of the test. All compliance/source test notifications, protocols, and results may be submitted electronically to reporting@mdaqmd.ca.gov

The following Regulated Air Pollutants must be tested:

(a) Oxides of nitrogen (NOx as NO2)
(b) Carbon Monoxide (CO)
(c) Ammonia (NH3)
[District Rules 1303(A) - BACT limiting and 1157.1]

14. Compliance testing for the demonstration of District Rule 1157.1 must, at a minimum, include one emission compliance test conducted at 90% of the maximum firing rate allowed by the District permit. All lbs/MMBtu NOx emission rates shall be calculated as pounds of nitrogen dioxide per MMBtu of heat input. All emission concentrations and emission rates shall be based on hourly averages unless otherwise specified. Test methods used must be in compliance with District Rule 1157.1(F).
[District Rules 1303(A) - BACT and Rule 1157.1(E)(1)(b) and (F)]

15. Once the BARCT modification (as described in the ATC Equipment Description) is installed, emissions from this equipment may not exceed the following emission limits in any consecutive twelve-month period, based on operation in accordance with condition 1:
(a) NOx: 2,157 pounds year, verified by Continuous Emissions Monitoring System (CEMS) and Compliance Testing.
(b) CO: 26,264 pounds per year, verified by CEMS and Compliance Testing.
(c) NH3: 1, 597 pounds per year, verified by PEMS (Parametric Emissions Monitoring System) and Compliance Testing.
[District Rule 1303(A) - BACT and 1303(B) - offsets for NOx; 40 CFR 70.6 (a)(3)(B) - Periodic Monitoring Requirements]

16. The emissions of the following pollutants CO, and NOx (as NO2) as well as O2 (a diluent gas) shall be continuously monitored using a Continuous Emissions Monitoring System (CEMS). The owner/operator must install, calibrate, maintain and operate these CEMS according to a District-approved CEMS Monitoring and Quality Assurance Plan. No later than forty-five (45) days prior to the CEMS installation the owner/operator must submit a CEMS Monitoring and Quality Assurance Plan for District review and approval. Ammonia slip is monitored by compliance tests coupled with parametric monitoring as described under C014967. The CEMS must be operating at all times in accordance with the District-approved CEMS Monitoring and Quality Assurance Plan.

The following are the acceptability testing requirements for the CEMS:
(a) NOx CEMS - Performance Specification 2 of 40 CFR 60 Appendix B.
(b) For CO CEMS - Performance Specification 4 of 40 CFR 60 Appendix B.
(c) For O2 CEMS - Performance Specification 3 of 40 CFR 60 Appendix B.
(d) For quality assurance - Performance Specification 40 CFR 60 Appendix F.
[40 CFR 70.6 (a)(3)(B) - Periodic Monitoring Requirements]

17. After the installation of the SCR System (C014967) this equipment must exhaust to, and operate concurrently with, the SCR System under valid MDAQMD permit C014967 when Boiler No. 22 is operated on natural gas.
[District Rule 204]

18. The owner/operator must maintain the following records for this equipment and its associated air pollution control devices:
(a) All compliance testing results, including all calibrations.
(b) All continuous CEMS and PEMS data reduced and reported in accordance with the District-approved CEMS and PEMS Monitoring and Quality Assurance Plans.
(c) District-approved CEMS and PEMS Monitoring and Quality Assurance Plans.
(d) Any maintenance made to this equipment, including date and nature of repairs.
These records must be kept for at least five (5) years, and made available to District, state, or federal personnel upon request.
[District Rule 204; 40 CFR 70.6 (a)(3)(B) - Periodic Monitoring Requirements]