

AUTHORITY TO CONSTRUCT

A/C NO.: 27784**ISSUED BY:***Brian F Krebs***DATE ISSUED:** AUGUST 30, 2024

BRIAN F. KREBS

DATE EXPIRES: AUGUST 30, 2024**ISSUED TO:** SACRAMENTO AREA SEWER DISTRICT**LOCATION:** 8521 LAGUNA STATION ROAD, ELK GROVE, CA 95758**DESCRIPTION:** IC ENGINE (PRIME POWER), JENBACHER, MODEL: JMS 616 J325_J09, SERIAL NO.: TO BE DETERMINED, 3,681 HP AT 1,800 RPM, DIGESTER GAS FUELED, EQUIPPED WITH AN OXIDATION CATALYST AND SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM, DRIVING AN ELECTRIC GENERATOR.

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START-UP REQUIREMENTS

S1. After completing the equipment installation authorized under this Authority to Construct (ATC), the permit holder must contact the Sacramento Metropolitan Air Quality Management District (SMAQMD) to arrange a start-up inspection. SMAQMD may be contacted at (279) 207-1122.

[Basis: SMAQMD Rule 201, Section 405]

S2. This Authority to Construct may serve as a temporary Permit to Operate provided that:

- A. The permit holder has notified SMAQMD that the equipment installation is complete and the facility is ready for a start-up inspection,
- B. The equipment installed matches the equipment authorized in this Authority to Construct,
- C. The equipment is operated in compliance with all conditions in this Authority to Construct, and
- D. The equipment and its operation complies with SMAQMD, state and federal laws and regulations.

[Basis: SMAQMD Rule 201, Sections 303.1 and 405]

S3. The permit holder agrees to indemnify and defend SMAQMD, its officers, agents, and employees if this permit, or the environmental review of the permit under the California Environmental Quality Act (CEQA) or the National Environmental Policy Act (NEPA), including any exemption determination, is challenged in state or federal court. This indemnification includes attorney fees awarded against SMAQMD, as well as attorney fees, court costs, legal fees, and other expenses incurred in defending the challenge. The District will provide written notice to the permit holder within 5 days if it receives a petition, complaint or other legal notice by a third party challenging this Authority to Construct (ATC) or the environmental review of the ATC. The permit holder may, within 10 days of notification, request cancellation of the ATC. If the permit holder requests cancellation, SMAQMD will cancel the permit within 5 days, and will notify the plaintiffs of the cancellation and request dismissal of the litigation.

[Basis: SMAQMD Rule 201, Section 405]

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GENERAL

1. The equipment must be properly maintained and operated in accordance with the information submitted with the application and the manufacturer's recommendations at all times.

[Basis: SMAQMD Rule 201, Section 405 and Rule 202, Section 408.1]

2. The Air Pollution Control Officer and/or authorized representatives must be permitted to do all of the following:
 - A. Enter the source premises or any location at which any records required by this ATC are kept.
 - B. Access and copy any records required by this ATC.
 - C. Inspect or review any equipment, operation, or method required under this ATC.
 - D. Sample emissions from the source or require samples to be taken.

[Basis: SMAQMD Rule 201, Section 405]

3. This ATC does not authorize the emission of air contaminants in excess of those allowed by Division 26, Part 4, Chapter 3, of the California Health and Safety Code or the SMAQMD Rules and Regulations.

[Basis: SMAQMD Rule 201, Sections 303.1 and 405]

4. The facility may not discharge air contaminants or other materials that cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

[Basis: SMAQMD Rule 402, Section 301]

5. A legible copy of this ATC must be maintained on the premises with the equipment.

[Basis: SMAQMD Rule 201, Section 401]

EMISSION LIMITATIONS

6. The IC engine must not discharge into the atmosphere any visible air contaminants other than uncombined water vapor, for a period or periods aggregating more than three minutes in any one hour, which are as dark as or darker than Ringelmann No. 1 or equivalent to or greater than 20% opacity.

[Basis: SMAQMD Rule 401, Section 301]

7. The IC engine must meet the following BACT and T-BACT emission standards:

[Basis: SMAQMD Rule 202, Section 408.2a]

| Pollutant | Emission Standard and Work Practice (A) |
|--------------|--|
| VOC | 30 ppmvd corrected to 15% oxygen measured as methane |
| NOx | 11 ppmvd corrected to 15% oxygen |
| SOx | 40 ppmvd hydrogen sulfide (H ₂ S) in the fuel (daily average) |
| PM10/PM2.5 | 0.07 g/hp-hr |
| Formaldehyde | Oxidation catalyst achieving ≥ 50% reduction of formaldehyde emissions |

(A) Based on SMAQMD BACT and T-BACT standard for this size and category (BACT Determination 363).

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8. The emissions from the IC engine must not exceed the following:

[Basis: SMAQMD Rule 201, Section 405 and Rule 202, Section 301 and Section 408.2]

| Pollutant | Emission Factors (A) (g/hp-hr) | Emission Limits (B) | | | | | |
|-----------|-----------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----------|
| | | (lb/day) | 1st Qtr (lb/qtr) | 2nd Qtr (lb/qtr) | 3rd Qtr (lb/qtr) | 4th Qtr (lb/qtr) | (lb/year) |
| VOC | 0.10 | 19.5 | 1,753 | 1,772 | 1,792 | 1,792 | 7,109 |
| NOx | 0.10 | 19.5 | 1,753 | 1,772 | 1,792 | 1,792 | 7,109 |
| SOx | 0.025 | 4.9 | 438 | 443 | 448 | 448 | 1,777 |
| PM10 | 0.07 | 13.6 | 1,227 | 1,241 | 1,254 | 1,254 | 4,976 |
| PM2.5 | 0.07 | 13.6 | 1,227 | 1,241 | 1,254 | 1,254 | 4,976 |
| CO | 0.65 | 126.6 | 11,394 | 11,520 | 11,647 | 11,647 | 46,208 |
| Ammonia | 0.034 | 6.6 | 596 | 603 | 609 | 609 | 2,417 |

(A) Emission factors for VOC and NOx are based on 30 ppm at 15% oxygen and 11 ppm at 15% oxygen respectively and is BACT. Emission factor for SOx is based on 40 ppm H₂S in the fuel and is BACT. Emission factors for PM10 and PM2.5 are BACT. Emission factor for CO was requested by the applicant. Emission factor for ammonia is based on 10 ppm at 15% O₂ from retrofit manufacturer's data.

(B) Emissions are based on 3681 hp; 24 hours/day; 90 days, 91 days, 92 days, and 92 days for each sequential quarter; 365 days/year; and the emission factors in this table.

9. Emissions from P/Os 12526, 24421, 24222, 24682, 26464, 26465, and 25901 must not exceed the following quarterly VOC limits. Emissions from 12526, 24426, 24682, 25403, 25901, 26464, 26465, 27781, 27782, 27783, 27784, and 27785 must not exceed the following quarterly PM10 emission limits and annual PM2.5 emission limits. The most recent version of Attachments C and E must be completed quarterly and annually respectively to demonstrate compliance with this condition.

[Basis: SMAQMD Rule 201, Section 405 and Rule 202, Section 302]

| Emission Limits | | | | | |
|-------------------------------------|-------------|-------------|-------------|---|--------------------------------------|
| Quarterly VOC Limit (lb/quarter) | | | | Quarterly PM10 Limit (lb/quarter) | Annual PM2.5 limit (tons/year) |
| 1st Quarter | 2nd Quarter | 3rd Quarter | 4th Quarter | | |
| 7,335 | 7,345 | 7,368 | 7,354 | 7,299 | 14.4 |

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10. Emissions from all permitted emission units at the stationary source (Sacramento Regional Wastewater Treatment Plant) must not exceed the following annual emission limits. The most recent version of Attachment B must be completed annually to demonstrate compliance with this condition.

[Basis: SMAQMD Rule 201, Section 405 and Rule 202, Section 228]

| Annual Emission Limits (ton/year) | | | | |
|--------------------------------------|------|------|--------------------------------|---|
| VOC | NOx | CO | Single Hazardous Air Pollutant | Combination of All Hazardous Air Pollutants |
| 24.4 | 24.4 | 99.4 | 9.4 (A) | 24.4 (A) |

(A) HAP emission factor for sewage influent is 7.5885E-5 tons/MMgal (single HAP) and 1.5774E-4 tons/MMgal (combined HAPs). HAPs are defined as any air pollutant listed pursuant to Section 112(B) (42 U.S.C. Section 7412(B) of the Federal Clean Air Act). This limit includes permitted and non-permitted sources of HAPs.

EQUIPMENT OPERATION

11. The IC engine must be equipped with a non-resetting hour meter with a minimum display capability of 99,999 hours.

[Basis: SMAQMD Rule 201, Sections 303.1 and 405]

12. The IC engine must be fired only on digester gas. The engine fuel may be supplemented with pipeline quality natural gas to facilitate optimal combustion.

[Basis: SMAQMD Rule 202, Section 408.1]

13. The digester gas used in the IC engine must have a sulfur content that does not exceed 40 ppm hydrogen sulfide.

[Basis: SMAQMD Rule 201, Section 405]

14. The hydrogen sulfide concentration of the digester gas fuel must be tested at least once per day whenever the IC engine is fired on digester gas. All measurements must be made in a vent in the fuel line at a location after the digester gas conditioning system. The hydrogen sulfide analyzer must be suitable for measurement and calibrated according to manufacturer's specifications within the previous 12 month period.

[Basis: SMAQMD Rule 201, Section 405]

15. To determine whether the engine complies with opacity requirements, the Air Pollution Control Officer or designee may require the permit holder to operate the IC engine during a SMAQMD inspection. The inspection will be conducted during daylight hours, and the IC engine must be operated at maximum anticipated load and from a cold start condition.

[Basis: SMAQMD Rule 201, Section 405]

16. The IC engine, oxidation catalyst, and SCR system must be operated and maintained in accordance with the manufacturer's recommendations and be consistent with good air pollution control practice for minimizing emissions.

[Basis: SMAQMD Rule 202, Section 408.2 and 40 CFR 60 Subpart ZZZZ, Section 63.6625(e)]

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17. The air-to-fuel ratio controller on the engine must be properly maintained per the manufacturer. The air-to-fuel ratio controller installed on the engine must be in operation anytime that the engine is operated.
[Basis: SMAQMD Rule 202, Section 408.2 and 40 CFR 60 Subpart ZZZZ, Section 63.6625(e)]

18. The permit holder must keep and maintain an Operation and Maintenance (O&M) plan for the IC engine. The O&M plan must be submitted to the Air Pollution Control Officer within 60 days of startup.
[Basis: SMAQMD Rule 202, Section 408.2 and 40 CFR 60 Subpart ZZZZ, Section 63.6625(e)]

19. The engine must be operated in a manner consistent with good air pollution control practice for minimizing emissions.
[Basis: SMAQMD Rule 202, Section 408.2 and 40 CFR 60 Subpart JJJJ, Section 60.4243(b)]

EMISSION REDUCTION CREDITS

20. Sacramento Area Sewer District must provide sufficient Emission Reduction Credits (ERCs) to the Air Pollution Control Officer to fully offset the following amount of emissions:
[Basis: SMAQMD Rule 202, Section 302.1]

| Pollutant | Emissions to be Offset (A) (lb/quarter) | | | |
|-----------|--|-------------|-------------|-------------|
| | 1st Quarter | 2nd Quarter | 3rd Quarter | 4th Quarter |
| VOC | 1,753 | 1,772 | 1,792 | 1,792 |
| NOx | 1,753 | 1,772 | 1,792 | 1,792 |

(A) Emission offset ratios required by Rule 202, Section 303 have not been applied to the VOC emissions.

21. Prior to commencing operation, the Sacramento Area Sewer District must provide sufficient Emission Reduction Credits (ERCs) to the Air Pollution Control Officer as indicated below:
[Basis: SMAQMD Rule 202, Section 302.1]

| Emission Reduction Credits | Pollutant | Emission Offsets Provided (lb/quarter) | | | |
|--|-----------|---|-------------|-------------|-------------|
| | | 1st Quarter | 2nd Quarter | 3rd Quarter | 4th Quarter |
| SMAQMD ERC Cert. Nos. 17-01210, 17-01215, and 21-01246 | VOC | 744.8 | 518.2 | 409.2 | 474.2 |
| SMAQMD ERC Community Bank Loan (A) | VOC | 1,132.3 | 1,340.2 | 1,451.0 | 1,396.8 |
| | NOx | 1,753 | 1,772 | 1,792 | 1,792 |

(A) These credits are returned to the Community Bank if the permit is surrendered, revoked, not renewed or ownership is transferred.

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22. The emission reduction credits specified in Condition No. 21 that are borrowed from the Community Bank are valid only if the facility operates in a manner consistent with the requirements of Rule 205 – COMMUNITY BANK AND PRIORITY RESERVE BANK and the facts, including the information provided in the application, that were presented to the Board of Directors

[Basis: SMAQMD Rule 205, Section 307.7]

23. In order for ownership of this process to be transferred, the new owner must provide replacement credits for those Community Bank credits that were returned pursuant to Condition No. 21.

[Basis: SAMQD Rule 205, Section 315]

24. **This permit will expire on September 30, 2054 unless replacement credits have been provided.** To replace the Community Bank credits specified in Condition No. 21, the facility must submit an application to modify the current permit six months prior to September 30, 2054. Failure to provide replacement credits by October 1, 2054, will require the facility to reapply for a permit and the emission unit will be subject to Rule 202 – NEW SOURCE REVIEW at the time of re-permitting.

[Basis: SMAQMD Rule 205, Section 307 and Section 312]

EMISSIONS TESTING

25. Within 60 days of startup and every 8,760 operating hours or 3 years thereafter, whichever comes first, the permit holder must conduct a performance test for oxides of nitrogen, volatile organic compounds measured as methane, oxides of sulfur, particulate matter, and formaldehyde in accordance with the methods specified in Condition Nos. 23 through 24 to verify compliance with Condition No. 7.

[Basis: SMAQMD Rule 201, Sections 303.2 and 405 and Rule 202, Section 408.2]

26. An initial notification must be submitted to the EPA and SMAQMD 30 days prior to the source test.

A. A source test plan must be submitted to SMAQMD 45 days prior to source test.

B. All items needed for the source test must be provided by the applicant:

- 1) Sampling ports.
- 2) Construction of the air pollution control system such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and procedures.
- 3) Provide a stack or duct free of cyclonic flow during performance tests as demonstrated by applicable test methods and procedures.
- 4) Safe sampling platforms.
- 5) Safe access to sampling platforms(s).
- 6) Utilities for sampling and testing equipment.

[Basis: SMAQMD Rule 201, Section 303.2]

27. The performance test must be conducted within 10 percent of 100 percent peak (or the highest achievable) load using the following methods:

- A. Sampling port locations – EPA Method 1 or 1A
- B. Oxygen – Method 3, 3A, or 3B
- C. Exhaust flow rate – EPA Method 2 or 19
- D. Moisture – EPA Method 4 or Method 320
- E. NOx – EPA Method 7E, Method D6522-00, Method 320, or ASTM D6348-03

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F. CO – EPA Method 10, Method D6522-00, Method 320

G. VOC - EPA Method 25A and 18. Method 25A with the use of a methane cutter as described in 40 CFR 1065.265, Method 18 or 40 CFR part 60 appendix A or ASTM D6348-03. Results of this test consist of the average of three 1 – hour or longer runs.

H. PM – EPA Method 5

I. Formaldehyde – EPA Method 323 or other method approved by the SMAQMD.

[Basis: SMAQMD Rule 201, Sections 303.2 and 405 and Rule 202, Section 408.2]

28. The performance test must not be conducted during periods of startup, shutdown, or breakdown. If the IC engine is non-operational, the engine does not need to be started up solely to conduct a performance test; however, the performance test must be conducted immediately upon startup of the engine.

[Basis: SMAQMD Rule 201, Sections 303.2 and 405 and Rule 202, Section 408.2]

29. The performance test must consist of three separate runs using the applicable test methods. Each test run must last at least 60 minutes. For the purposes of determining compliance with applicable standards, the arithmetic means of the results of the three runs must apply.

[Basis: SMAQMD Rule 201, Sections 303.2 and 405 and Rule 202, Section 408.2]

30. A source test report must be submitted to SMAQMD within 60 days of test completion.

[Basis: SMAQMD Rule 201, Sections 303.2 and 405 and Rule 202, Section 408.2]

RECORD KEEPING

31. The following records must be continuously maintained onsite for the most recent five year period and must be made available to the Air Pollution Control Officer upon request. Quarterly and annual records must be made available within 30 days of the end of the reporting period.

[Basis: SMAQMD Rule 201, Section 405]

| Frequency | Information to be Recorded |
|--------------|--|
| At All Times | A. Maintenance plan to keep the engines and air-to-fuel ratio controllers properly operating per the manufacturer's standards. B. Record of maintenance activities performed during maintenance of the engines. C. All notifications submitted to EPA. D. Copies of source test plans and final reports. E. Calibration reports for the portable analyzer that is used for Condition No. 14. |
| Daily | F. Concentration of hydrogen sulfide measured in the fuel line (ppm). |
| Quarterly | G. Total number of hours of operation (hours/quarter). H. Most recent version of Attachment E or approved equivalent. |
| Annually | I. Total number of hours of operation (hours/year). J. Most recent version of Attachment B or approved equivalent. |

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32. Emission test reports must be maintained on-site for a continuous 5-year period and must be made available to the Air Pollution Control Officer upon request.

[Basis: SMAQMD Rule 201, Section 405]

REPORTING

33. The following reports must be submitted to the Air Pollution Control Officer:

[Basis: SMAQMD Rule 201, Section 405]

| Frequency | Reports to be Submitted |
|---|--|
| Submit by 60 days after the end of each calendar quarter. | A. Most recent completed version of Attachment E (An equivalent report may be submitted by SacSewer upon written approval from the Air Pollution Control Officer). B. Annual number of hours that the IC engine operated (hours/year) C. VOC, NOx, CO, and HAPs emissions (in tons/year) for the entire facility to comply with Condition No. 10. D. A truth and accuracy certification signed by the facility's responsible official |
| Submit by 90 days after the end of each calendar year. | |

ANNUAL REPORTING

34. Unless otherwise directed by SMAQMD, the permit holder must submit their applicable Annual Report to the District by March 15th of every calendar year. The Annual Report forms can be found at www.airquality.org/AnnualReporting. SMAQMD may require the permit holder to supply additional information under the Air Toxics "Hot Spots" Information and Assessment Act (California Health and Safety Code Section 44300 et seq.) and CARB's Criteria Pollutant and Toxics Emissions Reporting (California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 7.7). If additional information is required, the SMAQMD will notify the permit holder.

[Basis: SMAQMD Rule 201, Section 303.1 and 405]

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Your application for this air quality Authority to Construct was evaluated for compliance with Sacramento Metropolitan Air Quality Management District (SMAQMD), state and federal air quality rules. The following list identifies the rules that most commonly apply to the operation of your equipment. Other rules may also be applicable.

| <u>SMAQMD RULE NO.</u> | <u>RULE TITLE</u> |
|------------------------|--|
| 201 | GENERAL PERMIT REQUIREMENTS (8-24-06) |
| 202 | NEW SOURCE REVIEW (8-23-12) |
| 217 | PUBLIC NOTICE REQUIREMENTS FOR PERMITS (8-23-12) |
| 401 | RINGELMANN CHART (4-19-83) |
| 402 | NUISANCE (8-3-77) |
| 406 | SPECIFIC CONTAMINANTS (12-6-78) |
| 420 | SULFUR CONTENT OF FUELS (8-13-81) |

| <u>FEDERAL</u> | <u>REGULATION TITLE</u> |
|---------------------------|---|
| 40 CFR 60 SUBPART JJJJ | NEW SOURCE PERFORMANCE STANDARDS - STATIONARY SPARK IGNITION INTERNAL COMBUSTION ENGINES |
| 40 CFR 63 SUBPART ZZZZ | NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS - STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES |

The conditions on this Authority to Construct reflect some, but not all, of the requirements of these rules. Because other rule requirements may apply to the operation, the owner/operator should be familiar with all of the rules and related requirements. In addition, because future changes in prohibitory rules may establish more stringent requirements that may supersede the conditions listed here, the owner/operator should monitor proposed rules and rule adoption actions at SMAQMD.

For further information please consult your SMAQMD rulebook or contact the SMAQMD for assistance.