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Connect with the  
Bay Area Air District:



September 8, 2020

Richard Peary  
Compliance Manager  
Ameresco Half Moon Bay LLC  
111 Speen St., Suite 410  
Framingham, MA 01701

RE: Responses to Comments of proposed Title V Permit

Dear Mr. Peary:

After receiving your comments of the proposed Title V Permit for Ameresco Half Moon Bay LLC (Facility ID #B7040), the Air District made some revisions to the proposed Title V permit and the Statement of Basis to address your comments. Please see responses to detailed comments below. We will proceed to the final approval phase for this proposed Title V Permit.

Thank you for commenting on the proposed Title V Permit. Please contact Mr. Davis Zhu at 415-749-4743 should you have any questions to this response.

Sincerely

Davis Zhu  
Engineering Division  
Bay Area Air Quality Management District

CC: Dennis Jiang  
May Leung  
Carol Allen  
Sanjeev Kamboj

*Comment 1: H2S Monitoring – Draeger Tubes  
P39 Condition 25465 Part 8.*

*Could the District include the use of Draeger tubes as an acceptable H2S monitoring method?*

**Response:** The District will include the use of Draeger tubes as an acceptable H2S monitoring method. The permit condition now states:

8. The owner/operator shall ensure that the concentration of total reduced sulfur compounds in the landfill gas fuel burned at the engines (S-1 through S-6) does not exceed 150 ppmv, expressed as H<sub>2</sub>S. To demonstrate compliance with this requirement, the owner/operator shall use either a District approved portable hydrogen sulfide monitor (such as Draeger tubes) or a District laboratory analysis method to determine the concentration of TRS (measured as H<sub>2</sub>S) in the treated landfill gas fuel that is delivered to the engines on a quarterly basis. The sampling dates and results shall be recorded in a District approved log. If the portable H<sub>2</sub>S analysis method is used, the TRS concentration shall be calculated by multiplying the measured H<sub>2</sub>S concentration by 1.05 (TRS = 1.05 \* H<sub>2</sub>S). If a laboratory analysis method is used, the TRS concentration shall be calculated as the sum of the measured concentrations for the individual sulfur compounds, expressed as H<sub>2</sub>S. (Basis: BACT and Cumulative Increase).

*Comment 2: H2S 150 ppm limit*

**Response:** As stated in our April 17, 2020 response to this request, the Air District cannot change a BACT limit in a Title V permit. This type of permit condition change would trigger new source review (i.e. it would result in emission increases of sulfur dioxide and hydrogen sulfide over the current permitted emission levels), these proposed emissions must be re-assessed for compliance with BACT & TBACT standards, offsets, and project risk limits. A change in permit conditions must be requested by submitting a standard District permit application. We recommend that you submit a new source review application for this request at your convenience by submitting a P-101B Form

(<https://www.baaqmd.gov/~media/files/engineering/forms/permit-application/p101b.pdf?la=en>) along with a cover letter explaining your requested permit condition change. You should include your arguments submitted to date on this issue and all available sulfur content results to support your position. The permit engineer assigned to this application will review your request through that permit application and make a determination regarding the appropriate sulfur content limit for your engines. You should also include the appropriate Title V permit application forms for either a minor revision (if the total increase in sulfur dioxide emissions is less than 40 tons/year) or a significant revision (if the total increase in

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sulfur dioxide emissions is greater than 40 tons/year). Title V application forms and instructions are located here: <https://www.baaqmd.gov/forms/permits>.

*Comment 3: Source testing date*

*Conditions VI.9 and VI.11 (Pages 45-46): The permit states that source testing is required within 60 days of the permit issuance date. Ameresco is currently scheduled to conduct source testing at the facility on August 18 and 19, 2020. Is Ameresco expected to conduct additional source testing in 2020 if the permit is not issued before the test date? In addition, could the District please clarify when the first source test that includes testing for toxics compounds is required?*

**Response:** Since the 2020 source test was conducted before issuance of the Title V permit, the facility can begin the new source testing requirements, including toxics, at the next scheduled annual source test event in 2021. The Air District has removed the requirement to test within 60 days of issuance of the permit to operate from Condition # 25465, Part 11 and Condition # 26865, Part 9. In addition, the Air District has harmonized the source testing procedural description, notification requirements, and source test report submittal requirements (now 60 days for all 3 parts) in Condition # 25465, Part 11 and Condition # 26865, Parts 9 and 11. The clean version of the revised text for these parts is shown below.

**Condition # 25465**

FOR S-1 IC ENGINE – GENSET; ABATED BY A-7 SELECTIVE CATALYTIC REDUCTION SYSTEM AND A-1 OXIDATION CATALYST;  
FOR S-2 IC ENGINE – GENSET; ABATED BY A-2 OXIDATION CATALYST;  
FOR S-3 IC ENGINE – GENSET; ABATED BY A-3 OXIDATION CATALYST;  
FOR S-4 IC ENGINE – GENSET; ABATED BY A-4 OXIDATION CATALYST;  
FOR S-5 IC ENGINE – GENSET; ABATED BY A-5 OXIDATION CATALYST;  
FOR S-6 IC ENGINE – GENSET; ABATED BY A-6 OXIDATION CATALYST;  
FOR: A-8 WASTE GAS FLARE

11. To demonstrate compliance with Parts 3, 4, 5, 7, 8, Regulations 9-1-302, 9-8-302.1, and 9-8-302.3, the owner/operator shall conduct a source test on an annual basis. Tests shall be conducted no later than 12 months after the previous annual source test, except subpart I (subpart I TACs shall be tested at least once every 4 years). Each annual source test shall determine the following:
- a. Operating rate for each engine during the test period (bhp);
  - b. Total flow rate of all gaseous fuel to each engine (dry basis, scfm);
  - c. Concentrations (dry basis) of carbon dioxide (CO<sub>2</sub>), nitrogen (N<sub>2</sub>), oxygen (O<sub>2</sub>), methane (CH<sub>4</sub>), total non-methane organic compounds (NMOC), hydrogen sulfide (H<sub>2</sub>S), and total reduced sulfur compounds (TRS) in the gaseous fuel burned in the engines (percent by volume or ppmv);
  - d. High heating value for the landfill gas (BTU/scf);

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- e. Heat input rate to each engine averaged over the test period (BTU/hour);
  - f. Exhaust gas flow rate from each engine based on EPA Method 19 (dry basis, sdcfm);
  - g. Concentrations (dry basis) of NO<sub>x</sub>, CO, CH<sub>4</sub>, NMOC, SO<sub>2</sub>, and O<sub>2</sub> in the exhaust gas from each engine (ppmv or percent by volume);
  - h. NO<sub>x</sub>, CO, and POC concentrations corrected to 15% O<sub>2</sub> in the exhaust gas from each engine (ppmv);
  - i. NO<sub>x</sub>, CO, and POC emission rates from each engine (grams/bhp-hour);
  - j. NMOC concentrations corrected to 3% O<sub>2</sub> in the exhaust gas from each engine (ppmv);
  - k. NMOC and methane destruction efficiencies achieved by each engine (weight percent);
  - \*l. Benzene, Formaldehyde, Acetaldehyde, and PAH emission rates from each engine (pounds/hour and grams/bhp-hour);

The owner/operator shall comply with all applicable testing requirements as specified in Volume IV of the District's Manual of Procedures. The owner/operator shall notify the District's Source Test Section of the source test protocols at least 14 days before the scheduled test date and shall notify the Source Test Section of the projected test dates at least 7 days prior to testing. The owner/operator shall submit the source test report to the Source Test Section within 60 days of the test date. (Basis: BACT, Cumulative Increase, Regulations 2-5-301, 2-5-302, 8-34-301.4, 8-34-412, 9-1-302, 9-8-302.1, and 9-8-302.3)

**Condition # 26865**

FOR S-7 TSA GAS TREATMENT SYSTEM; ABATED BY A-8 WASTE GAS FLARE:

- 9. To demonstrate compliance with Parts 3 through 8, the owner/operator shall conduct a source test at least every 12 months from the date of the last successful test.  
The source test shall be conducted while the flare is burning waste gas from the carbon desorption process. If the duration of waste gas combustion is insufficient to allow a full source test during the waste gas desorption cycle, the source test shall be conducted while the flare is operating in its normal mode and cycling between desorption cycle on and off. In this case, record the flow rate of desorption gas to the flare, amount of time this gas is flowing to flare per run and the flow rate and time per run for treated landfill gas.  
The owner/operator shall comply with all applicable testing requirements as specified in Volume IV of the District's Manual of Procedures. The owner/operator shall notify the District's Source Test Section of the source test protocols at least 14 days before the

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scheduled test date and shall notify the Source Test Section of the projected test dates at least 7 days prior to testing. The owner/operator shall submit the source test report to the Source Test Section within 60 days of the test date. Each annual source test shall measure or determine the criteria in subparts a-h below (except subpart i TACs shall be tested at least once every 4 years). (Basis: RACT, BACT, TBACT, and Regulations 2-5-301, 2-5-302, 8-34-301.3, 8-34-412, and 9-1-302)

- a. inlet gas flow rate for each gas delivered to the flare (scfm, dry basis);
  - b. concentrations (dry basis) of carbon dioxide (CO<sub>2</sub>), nitrogen (N<sub>2</sub>), oxygen (O<sub>2</sub>), methane (CH<sub>4</sub>), and total non-methane organic compounds (NMOC) in each inlet gas to the flare;
  - c. total inlet heat input rate to the flare in units of MM BTU (HHV) per hour;
  - d. stack gas flow rate from the flare (scfm, dry basis);
  - e. concentrations (dry basis) of CH<sub>4</sub>, NMOC, NO<sub>x</sub>, CO, SO<sub>2</sub>, and O<sub>2</sub>, in the flare stack gas;
  - f. NMOC and CH<sub>4</sub> destruction efficiencies achieved by the flare (by weight);
  - g. average combustion zone temperature in the flare during the test period;
  - h. NO<sub>x</sub>, CO, and SO<sub>2</sub> emission rates from the flare in units of pounds per hour and pounds per MM BTU,
  - i. Benzene, Formaldehyde, Acetaldehyde, and PAH emissions from the flare in units of pounds per hour.
11. The owner/operator shall conduct a characterization of both the treated landfill gas from S-7 and the desorption cycle waste gas going to flare concurrent with the source test required by Part 9 above. The flare inlet gas shall be analyzed for, as a minimum, the organic compounds listed below. All concentrations shall be reported on a dry basis. The test report shall be submitted to the Compliance and Enforcement Division and Source Test Section within 60 days of the test date. (Basis: Regulations 2-1-403 and 2-5-501)

Organic Compounds

Benzene  
Formaldehyde  
Acetaldehyde  
PAH

*Comment 4: Flare NO<sub>x</sub> and CO Limits*

*Table VII - C (Page 60): The District has agreed to remove the 15 ppmv @ 15% O<sub>2</sub> NO<sub>x</sub> limit for the A-8 Flare and has taken out all references to this limit from the*

*draft permit except for one on Page 60. Could the District please remove this from the table?*

*Table VII - C (Page 61): The District has agreed to remove the 81 ppmv@ 15% O<sub>2</sub> CO limit for the A-8 Flare and has taken out all references to this limit from the draft permit except for one on Page 61. Could the District please remove this from the table?*

**Response:** The Air District has made these corrections. Table VII-C entries now read as follows:

NO <sub>x</sub>	BAAQM D Condition # 26865, Part 6	Y		For A-8 Flare: ≤ 0.06 pounds/MM BTU, calculated as NO <sub>2</sub>	BAAQMD Condition # 26865, Part 9e,h	P/A	Flare Source Tests and Records
CO	BAAQM D Condition # 26865, Part 7	Y		For A-8 Flare: ≤ 0.20 pounds/MM BTU	BAAQMD Condition # 26865, Part 9e,h	P/A	Flare Source Tests and Records