



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

May 23, 2022

Mr. Eric Guarino, P.G.
Environmental Department Manager
Southern Earth Sciences, Inc.
6460 Rangeline Road
Mobile, Alabama 36619

Dear Mr. Guarino:

This letter is in response to your letter dated April 11, 2022, on behalf of American Environmental Incorporated (AEI) requesting an alternative monitoring procedure (AMP) and stack testing waiver for a portable thermal oxidizing unit (TOU) used by AEI on a temporary basis to control hydrogen sulfide (H₂S) emissions during degassing of tanks, vessels, and pipes at petroleum refineries in Region 4.¹ AEI's AMP covers refineries subject to Title 40, Code of Federal Regulations (CFR) Part 60, Subpart J (Standards of Performance for Petroleum Refineries) and Subpart Ja (Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced after May 14, 2007). On April 25, 2022, the U.S. Environmental Protection Agency requested additional information from you and received the information on April 26, 2022. Based upon our review, the EPA conditionally approves AEI's AMP and grants a performance testing waiver for tank degassing activities that use the temporary TOU at refineries located within Region 4 states, as explained in the remainder of this letter and further delineated in the enclosure to this letter.

AEI performs degassing services for tanks, vessels, and pipes at petroleum refineries. The use of the TOU to combust vapors that are refinery fuel gas vent streams results in the TOU being considered a fuel gas combustion device subject to either NSPS Subpart J or Subpart Ja, depending on the refinery-specific requirements. NSPS Subparts J and Ja prohibit the owner or operator of a fuel gas combustion device from burning vent gas generated at a petroleum refinery that contains H₂S in excess of the following limits:

1. 230 milligrams H₂S per dry standard cubic meter (mg/dscm), per § 60.104(a)(1).
2. 162 parts per million by volume (ppmv) H₂S determined hourly on a 3-hour rolling average basis, and 60 ppmv H₂S determined daily on a 365-day successive calendar day rolling average basis, per § 60.102a(g)(1)(ii).

¹ The AMP approval is limited to states within the EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee).

NSPS Subparts J and Ja require the owner or operator of a fuel gas combustion device to install, calibrate, maintain, and operate a continuous emission monitoring system (CEMS) to monitor and record the concentration of H₂S in the fuel gases before being burned in a combustion device, per §§ 60.105(a)(4) and 60.107a(a)(2). Since AEI's TOU is used on a temporary basis at each facility, AEI contends that installation of an H₂S CEMS would not be economically feasible and would be technically impractical to implement.


Based upon the information provided, the EPA agrees that, for the specific portable and temporary combustion device used, as described in your request, it is impractical to require monitoring via an H₂S CEMS as specified by NSPS Subparts J and Ja. Therefore, in accordance with § 60.13(i), the EPA conditionally approves AEI's AMP. In addition, based on AEI's proposed alternate testing protocol to be used during each degassing event, the EPA waives performance testing pursuant to § 60.8(b)(4). Our conditional approval is limited to the monitoring of H₂S for the operations described in AEI's AMP as delineated in the enclosure to this letter, and does not alter AEI's or a particular refinery's obligations to meet all other applicable NSPS requirements, including, but not limited to, the following NSPS general provisions:

1. The requirement to maintain and operate affected facilities and associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions, per § 60.11(d);
2. The prohibition against concealing emissions which would otherwise constitute a violation of an applicable standard, including the use of gaseous diluents to achieve compliance with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere, per § 60.12;
3. Applicable state implementation plan or permitting requirements; and
4. The National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries (Subpart CC). The combustion of pollutants in the TOU during the degassing of tanks may also be subject to Subpart CC. This approval does not address Subpart CC requirements.

This conditional approval is based upon prior consultation with our Office of Air Quality Planning and Standards and our Office of Enforcement and Compliance Assurance and is consistent with similar approvals issued by our office. This conditional approval will automatically expire on the effective date of any change to NSPS Subparts J or Ja that directly affects the requirements to monitor H₂S concentrations in fuel gases burned in portable combustion devices. In addition, if AEI's use of the TOU during degassing operations changes from the representations made in the AMP request, this approval will become null and void. Furthermore, if an affected refinery's operations change such that the sulfur content of the off-gas vent streams increases beyond levels specified in the enclosure to this letter, then the refinery must document the change(s) so that AEI may follow appropriate steps in either §§ 60.105(b)(3)(i)-(iii) or 60.107a(b)(3)(i)-(iii), based upon refinery-specific requirements.

If you have any questions about this conditional approval, please contact Tracy Watson of my staff at (404) 562-8998 or by email at watson.marion@epa.gov.

Sincerely,
**CAROLINE
FREEMAN**

 Digitally signed by CAROLINE
FREEMAN
Date: 2022.05.23 16:12:36 -04'00'

Caroline Y. Freeman
Director
Air and Radiation Division

Enclosure

cc: Maria Malave, EPA OECA
Brenda Shine, EPA OAQPS

ENCLOSURE

Alternative Monitoring Procedure and Performance Testing Waiver Evaluation for Hydrogen Sulfide in Vapors Combusted in a Portable Thermal Oxidizer Unit During Degassing of Tanks at Various Petroleum Refineries²

Southern Earth Sciences, Incorporated (SESI), acting on behalf of American Environmental, Incorporated (AEI), proposed an alternative monitoring plan (AMP) in a letter to U.S. EPA Region 4 dated April 11, 2022, for monitoring hydrogen sulfide (H₂S) in vapors that are combusted in a portable thermal oxidizer unit (TOU). Under the AMP, AEI will perform degassing of tanks, vessels, and piping at various refineries located in Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee) using the temporary TOU as an emission control device. Since AEI's TOU will combust vapors that may be considered refinery fuel gas, the TOU is a combustion device subject to New Source Performance Standards (NSPS) for Petroleum Refineries, 40 CFR Part 60, Subpart Ja. While the TOU is subject to NSPS Ja, the incoming fuel gas streams from degassing at various refineries may be subject to either NSPS J or Ja. Since the TOU is a portable unit that is used on a temporary basis and is not permanent equipment owned or operated by the petroleum refineries, the EPA agrees that it is not economically feasible and is technically impractical to install H₂S CEMS as currently required under NSPS Subparts J or Ja. Additionally, in accordance with AEI's alternate testing protocol, the EPA waives the requirement to conduct performance testing for each degassing event, consistent with § 60.8(b)(4).

Based upon AEI's representations of the degassing operations that will be covered by the AMP, the operation of the TOU, and other information furnished in the company's AMP request of April 11, 2022, the following conditions must be met as part of this AMP approval:

1. If the petroleum refinery has an approved AMP in place for the control and monitoring of tank degassing operations, the petroleum refinery's approved AMP shall remain in place. This plan shall not supersede the petroleum refinery's plan.
2. Each refinery where AEI conducts tank degassing operations shall provide AEI the following information:
 - (i) A list of the tanks, vessels and piping where degassing operations occur.
 - (ii) A site plan diagram showing the locations and orientation of the tanks, vessels, and piping where degassing operations will occur, and the locations where AEI may locate the TOU and other equipment necessary for the degassing operations.
 - (iii) The names and titles of responsible refinery individuals who will review and approve degassing grab sample records and log sheets for the refinery.
 - (iv) A list of the materials stored in each tank, vessel, or piping area, and Material Safety Data Sheets (MSDS) or Safety Data Sheets (SDS) for each material.
 - (v) A list of operating restrictions, if any, to ensure that degassing operations conform to special conditions in the refinery's air permits.
 - (vi) If applicable, a copy of the refinery's AMP for degassing operations that includes the use of portable control and combustion devices.
3. AEI shall use length of stain tubes (e.g., Draeger) with a minimum detection limit of 200 ppmv H₂S to determine the concentration of H₂S in gases entering the AEI TOU (i.e., a "grab sample"),

² EPA Region 4 is not approving the AMP for the degassing of vessels and pipes.

as described in information furnished by SESI for the April 11, 2022, AMP petition. Each grab sample shall be taken at the inlet of the TOU. If the concentration of the vent gas stream entering the TOU is less than 100 ppmv H₂S, as measured by length of stain tubes, then AEI's handheld portable H₂S monitor may be used to measure concentration in subsequent grab samples. If AEI wishes to exercise the option of using a handheld monitor in lieu of using stain tubes for initial grab samples, the H₂S sensor in the monitor must be capable of detecting a concentration up to 200 ppmv.

4. For each discrete degassing event, AEI shall collect a grab sample (the "initial grab sample") for H₂S within 30 minutes of startup of the TOU. No monitoring is required during operating periods when the TOU does not combust gases generated by degassing and cleaning events.³
5. If the initial grab sample indicates an H₂S concentration less than or equal to 162 ppmv, then the inlet gas stream is deemed to meet the H₂S limits of NSPS J and Ja, and no further monitoring is required for that discrete degassing event.
6. If the initial grab sample indicates a H₂S concentration more than 162 ppmv, then for that discrete degassing event, the inlet gas stream is deemed to have exceeded the 230 mg/dscm limit of § 60.104(a)(1) and the 162 ppmv limit of § 60.102a(g)(1)(ii). AEI has two scrubbers which it may use to further reduce the H₂S concentration of such a vent gas stream. After implementation of scrubbing or other concentration reduction measures, AEI will conduct additional testing to demonstrate compliance with the H₂S limits specified in §§ 60.104(a)(1) and 60.102a(g)(1)(ii), by collecting and averaging three valid grab samples as follows:⁴
 - i. The initial grab sample;
 - ii. a grab sample taken between 61 and 120 minutes after startup of the TOU; and,
 - iii. a grab sample taken between 121 and 180 minutes after startup of the TOU.
7. AEI shall record the results of each grab sample, the key activities completed with each degassing operation, and other relevant information, on the forms included in the AMP request. AEI shall keep the records of all grab samples and degassing events for at least five years.
8. Within 5 business days after each discrete degassing event, AEI shall provide the owner or operator of the petroleum refinery where the discrete degassing event is performed the results of each grab sample, as well as a list of all dates and times when any grab sample indicated an H₂S concentration exceeded 162 ppmv. The purpose of this reporting requirement is to provide the owner or operator of the petroleum refinery with the data necessary for inclusion in excess emission reports and monitoring system performance reports required by § 60.7(c).
9. Vapors from degassing operations shall be vented only to a TOU which is in full operation as described in the AMP petition.
10. Petroleum refineries must comply with the other applicable requirements of Subparts J or Ja that apply to the petroleum refinery fuel gas when AEI conducts degassing operations. The use of

³ For example, sampling would not be required during time periods that commercially purchased propane is combusted for the purposes of heating up the TOU to operating temperature prior to treatment of degassing and cleaning emissions, or during equipment cool down after the device is no longer needed to treat emissions from degassing and cleaning events.

⁴ AEI can use this alternative averaging method of demonstrating compliance only if three valid grab samples are taken as specified and within the designated time periods.

AE's portable/temporary TOU for control of H₂S at processes other than the tank degassing operations represented is not covered or authorized by this AMP.

11. Refineries must comply with the other applicable requirements of NSPS Subpart J or Ja that apply to the refinery fuel gas when SES conducts degassing operations. The use of AEI's TOU for control of H₂S and other refinery fuel gas vent stream pollutants at processes other than the degassing operations represented is not covered or authorized by this conditional AMP.
12. AEI shall follow its internal standard operating procedures (SOP) for operation of the TOU, as furnished with the SESI's April 11, 2022, AMP petition. AEI shall review and update the SOP at least once annually to ensure consistency with requirements of the AMP conditional approval, current air permits and authorizations, and applicable federal/state air emission rules.
13. Petroleum refineries are responsible for including degassing emissions in excess emission reports and monitoring system performance reports required by § 60.7(c), as well as applicable Title V reporting.