



REGION 8
DENVER, CO 80202

May 24, 2024

Mr. Kyrik Rombough
Engineering Manager III
South Dakota Department of Agriculture and Natural Resources
Air Quality Program
Joss Foss Building, 523 E. Capitol
Pierre, South Dakota 57501

Re: EPA Public Comment on East Dakotas Renewable Energy, LLC – Centerville Biogas Facility, Permit #28.000104-01

Dear Kyrik Rombough:

The Environmental Protection Agency (EPA) Region 8 has reviewed the East Dakotas Renewable Energy, LLC – Centerville, SD Biogas Facility (East Dakotas) proposed Title V Air Quality Operation Permit, #28.000104-01. The public comment period for the East Dakotas permit runs from April 24, 2024, through May 25, 2024. The attached contains EPA’s comments on the permit.

This permit action has been assigned to Matthew Pollard. If you have any questions, or if you would like to schedule a meeting to discuss this matter further, please contact Matthew at pollard.matthew@epa.gov. We look forward to hearing from you and working with you on this permit.

Sincerely,

5/24/2024

X Adrienne Sandoval

Signed by: Environmental Protection Agency
Adrienne Sandoval
Director
Air and Radiation Division

ENCLOSURES

1. EPA Comments on East Dakotas Renewable Energy, LLC – Centerville Biogas Facility
cc: Samantha Olmstead - Samantha.Olmstead@state.sd.us

EPA Comments on East Dakotas Renewable Energy, LLC– Centerville Biogas Facility

Title V Compliance Assurance and Monitoring Requirements

All title V permits must contain sufficient monitoring to assure compliance with the applicable requirements in the permit. Section 504 §7661c(a) of the Clean Air Act (Act) states that each title V permit must include “conditions as are necessary to assure compliance with applicable requirements of [the Act], including the requirements of the applicable implementation plan” and “inspection, entry, monitoring, compliance certification, and reporting requirements to assure compliance with the permit terms and conditions.” Additionally, the regulations at 40 CFR § 70.6(c)(1) state that, consistent with § 70.6(a)(3), all part 70 permits shall contain “compliance certification, testing, monitoring, reporting, and recordkeeping requirements sufficient to assure compliance with the terms and conditions of the permit. Further, 40 CFR § 70.6(a)(3)(i)(B) states that “where the applicable requirement does not require periodic testing or instrumental or non-instrumental monitoring (which may consist of recordkeeping designed to serve as monitoring),” each permit shall contain “periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit.”

Each of the comments below highlight specific instances where there do not appear to be adequate inspection, entry, monitoring, compliance certification, and reporting requirements to assure compliance with the permit terms and conditions. The EPA recommends that for each of the permit conditions described below, South Dakota Department of Agriculture and Natural Resources (SD DANR) makes necessary revisions to the permit to ensure incorporation of appropriate requirements to assure compliance and to provide transparency and clarity to the source, the EPA and the public. While we have specifically highlighted these instances, this may be a non-comprehensive list and encourage a thorough review of the conditions within the permit.

1. Condition 6.3 on page 10 of the draft permit states: “In accordance with ARSD 74:36:06:03(2), the owner or operator shall not allow the emission of sulfur dioxide in excess of the emission limit specified in Table 5-1 for the appropriate permitted unit, operations, and process. Compliance with the sulfur dioxide emission limit is based on a three-hour rolling average, which is the arithmetic average of three contiguous one-hour periods.”

Table 5-1 on page 10 presents a sulfur dioxide (SO₂) emission limit of 3.0 pounds per million British thermal units (Btu) heat input for Unit #2 Generator. To EPA’s understanding, Unit #2 shall demonstrate compliance with this SO₂ limit by operating on natural gas. The EPA recommends that SD DANR amend Section 6.3 of the draft permit to reflect compliance based on the fuel type rather than the heat input. For example, in the POET- Hudson title V permit, SD DANR included language stating that “If a test is not required by Chapter 8.0, compliance is then based on burning natural gas or diesel fuel in accordance with permit conditions 1.1, 12.1 and 9.3.” Where the circumstances in these two permits are similar, the EPA recommends adopting similar language changes within this permit.

2. Condition 8.3 on page 13 of the draft permit states: “In accordance with ARSD 74:36:05:16.01(8), the owner or operator shall not produce biogas from the anaerobic digesters in a quantity greater than 625 million standard cubic feet in any 12-month rolling period.” However, there is does not appear to be a requirement within the permit to monitor or record

the amount of biogas produced by the biogas plant.

EPA recommends that SD DANR add appropriate monitoring and recordkeeping requirements to the permit to assure compliance with the limit.

3. Condition 8.4 on page 13 of the draft permit states: “In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall collect samples of the biogas prior to separation or combustion during the calendar month to determine the average sulfur content. Samples shall be collected on a weekly or more frequent basis to calculate the monthly average sulfur content. If the facility is not operated during a week, then a sulfur content sample will not be required that week. The monthly average is to be calculated using every weekly sulfur content sample taken while the facility was in operation. The samples shall be collected at a point prior to separation or combustion. A copy of the analyses shall be submitted with quarterly reports.”
 - a) This condition does not mention the methodology or equipment to be used to determine the average sulfur content, nor does there appear to be any other condition within the permit that states how this sulfur content is to be measured. Based on conversations with SD DANR, the EPA believes that a portable gas analyzer is to be used for the sample collection and sulfur analysis. The EPA recommends that SD DANR add permit language to state that the sulfur content required in Condition 8.4 shall be measured by a portable analyzer. If a method other than a portable analyzer shall be used, the permit should clearly specify the method.
 - b) The permit application states that the sulfur content of the biogas may spike to 6,500 parts per million (ppm). Table 5 of the application further lists scenarios where the sulfur content of the biogas may reach 15,000 ppm. These scenarios are not accounted for in weekly testing. Both the fact that sulfur content appears to be highly variable, as well as high potential sulfur content during startup and malfunction scenarios, suggest weekly sampling of sulfur content may be inadequate for practical enforceability of the potential to emit (PTE) limit. The EPA recommends that SD DANR revise the permit to ensure these higher sulfur content scenarios are adequately captured in the required sampling. The EPA recommends that SD DANR consider requiring continuous sulfur monitoring of the biogas content.
 - c) The proposed permit limits the PTE of the facility to 238 tons per year of SO₂. The EPA recommends that SD DANR revise the permit language to clarify that the sulfur sampling requirement in Condition 8.4 shall be used in conjunction with the biogas production limit in Condition 8.3 to demonstrate compliance with the 238 tons per year SO₂ limit in Condition 8.5 and specify the calculation methodology.
 - d) EPA recommends that SD DANR clearly specify the recordkeeping and reporting requirements for those periods in which a sulfur content sample is not required due to non-operation of the facility.
4. Section 4.1.2 on page 6 of the Statement of Basis and Section 4.1.6 on page 10 of the Statement of Basis describe the sulfur content estimates. Section 4.1.2 provides a worst-case scenario

sulfur content estimate of 6,500 ppm). Section 4.1.6 states “East Dakotas requested a sulfur limit of 4,600 parts per million and 625 million standard cubic feet (MMscf) of gas annually.” As stated in comment 3.b., above, Table 5 of the permit application further lists scenarios where the sulfur content of the biogas may reach 15,000 ppm.

The EPA recommends these values be substantiated in the Statement of Basis, either with literature references or documentation of actuals provided by East Dakotas. Methodology of how these actuals were obtained should be provided as well.

5. Emission Unit #3 (Perennial Energy, LLC 2021 flare) and Emission Unit #4 (Perennial Energy, LLC 2021 thermal oxidizer fired with natural gas) are subject to ARSD 74:36:06:06 and are required to conduct stack performance tests. The EPA recommends including these Emissions Units in Condition 7.0 – Performance Tests on page 11 of the draft permit.