SC DEPARTMENT *of*
ENVIRONMENTAL
SERVICES

Bureau of Air Quality
Response to Comments on Air Quality

Richland County Landfill Inc
Elgin, Richland County, South Carolina
Permit Number CP-50000191 v1.0

The following is the South Carolina Department of Environmental Services Bureau of Air Quality's (SCDES or Department) response to the comments made during the formal comment period held May 15, 2024, through July 31, 2024, regarding the draft synthetic minor source air quality construction permit for Richland County Landfill Inc.

The written Department Decision, permit, statement of basis, this response document, and a letter of notification are located for viewing at the SCDES Columbia office located at 2600 Bull Street, Columbia SC 29201, and on our webpage at https://www.des.sc.gov/programs/bureau-air-quality/air-quality-department-decisions.

Hard copies of all the above-listed documents and written comments received can be requested by contacting our Freedom of Information Office at (803) 898-3882.

A public hearing was held by the Department on July 29, 2024, to receive oral and written comments on the proposed projects. During the comment period, a total of five written and oral comments were received. The Department has reviewed and considered each comment received.

The following is a summary of the changes to the draft permit and statement of basis made by the Department following the comment period:

- Table A.2: The design capacity of the flare was changed from 6,000 standard cubic feet per min (scfm) to 3,000 scfm.

- Permit condition B.5: 1) Clarified language regarding monitoring of daily operating heat rate to provide for recording of the calculated operating heat rate and the semiannual reporting of the 12 month rolling sums of the calculated operating heat rate. 2) Add the algorithm to calculate the heat rate.

- Permit condition B.23: Add regulation 40 Code of Federal Regulations (CFR) 60.37f(h) with monitoring requirements applicability and the definition of a monitoring system malfunction.

- Permit condition B.24: Add relevant language from regulation 40 CFR 60.38f(h), including the reporting frequency.

- Permit condition C.6: Add regulation 40 CFR 63.1961(h) with monitoring requirements applicability and the definition of a monitoring system failure.

- Permit condition C.7: Add relevant language from regulation 40 CFR 63.1981(h) including the reporting frequency.

- Statement of Basis Project Description: Added the current use of the collected landfill gas and the planned flare operating scenarios.

- Statement of Basis Regulatory Review: Add 40 CFR 60 Subpart OOOOb non-applicability determination.

- Statement of Basis: The design capacity of the flare was changed from 6,000 scfm at 50% methane content with a fuel heat heating value of 506 British Thermal Unit (BTU)/ft^3 to 3,000 scfm at 100% methane content with a fuel heat heating value of 1,012 BTU/ft^3.

1. Public Participation Process

Comments were received concerning the public participation process and the small window of time provided for public feedback. Additionally, comments were received requesting a public meeting, a public hearing, and an extension to submit feedback on the proposed permit.

A comment was also received requesting that the SCDES do some additional kinds of advertising of these sorts of proposals, try to target some of the announcements to the communities, and to go beyond the minimum policy. Also, a comment was received requesting that a public hearing and a public meeting not be on the same night to allow the public to make educated comments during the public hearing based on information received during the public meeting. A comment requesting much advanced notice, easy access to notice, and links within documents for easy accessibility were also received.

Response: The Department's procedures for public participation are designed to provide opportunities for public awareness and involvement consistent with regulatory requirements, including making draft permitting resources available to the public for review and comment. In accordance with S.C. Regulation 61-62.1[1], the permit application, draft air

[1] https://des.sc.gov/sites/des/files/Library/Regulations/R.61-62.1.pdf; Accessed on August 2, 2024.

permit, and draft statement of basis were put on public notice on the SCDES Website[2] with thirty (30) days for public comment (From May 15, 2024 through June 13, 2024). The Department reviewed the public comments and interest in this project and determined that a public meeting and hearing were needed to answer questions, provide additional information and to receive additional comments. Accordingly, on June 28, 2024, the Department issued an additional public notice extending the comment period through July 31, 2024 and scheduling a public meeting and public hearing, per the requests received. The public meeting and hearing were held on July 29, 2024, meeting the regulatory requirement of providing notice of the public hearing at least thirty (30) days in advance of the hearing. The notice of the public meeting and public hearing were also provided on the SCDES Website. The Department will continue to look at ways to improve accessibility to reference documents and has provided both hyperlinks and footnotes to the references in this summary response to comments document.

Public meetings and hearings are open to everyone, and everyone is provided with the same opportunity to provide questions and/or comments on the proposed facility. The Department reviews and considers all comments received relevant to the proposed project and the applicable regulatory and permit requirements. Additionally, the SCDES Program and Community Engagement staff spoke with the commenters about their questions and concerns with the project. The SCDES staff are available to discuss any concerns and are continuously working on ways to improve the community engagement process.

2. Expedited Permit Review

A comment was also received expressing concern about the permit being processed under expedited review procedures and requesting to have the project be removed from the expedited track.

Response: Pursuant to S.C. Code Section 44-1-165, the Department implements an expedited review program for entities seeking an air construction permit. This program aids to speed up the permit application process without compromising on the quality of the review process. The review clock is paused whenever additional information or clarifications are necessary to complete the Department's review. Processing of a project through the expedited review program does not impact the public participation process. It means that additional resources are allocated to the project to have it completed in timeframes faster than the regulations require. In this case, once comments were received on the proposed project, the project was removed from the expedited review program.

3. Impact on Communities

Commenters opposed the construction of the renewable natural gas (RNG) plant at this location based on environmental justice principles, generational impacts, and impacts to

[2] https://des.sc.gov/about-scdes/about-us/community-engagement/environmental-public-notices; Accessed on August 2, 2024.

communities near and far including those that are vulnerable. A comment was also received that most of the public were lay people who do not know what the emissions are and what these emissions could mean to their lives. An additional comment stated that it seems that this proposed facility introduces new and a higher level of pollutants into the air than if the facility were not going to be built at all, even if the emissions are within federal standards.

Response: The SCDES is dedicated to environmental justice (EJ) and engaging with communities and permit applicants to address EJ concerns. The SCDES works closely with community members and EJ stakeholders across South Carolina to ensure that citizens in overburdened communities can have meaningful involvement in our decision-making processes. To facilitate meaningful involvement, the Department's procedures for public participation are designed to provide opportunities for public awareness and involvement consistent with regulatory requirements and are detailed in the Public Participation Process Section of this document.

The air permit decision is based on all applicable air quality regulations and a review of all technical and other information submitted showing compliance with requirements for issuance of the permit. Facilities are required to ensure that National Ambient Air Quality Standards ("NAAQS")[3] are not violated and that applicable regulatory requirements are met. South Carolina is currently, and has a long history of, meeting the NAAQS statewide. These standards have been established by the EPA and set to be protective of public health, including those sensitive and vulnerable populations, and the environment. The Department requires permit applicants to demonstrate the proposed construction project will not cause or contribute to a violation of the NAAQS. As detailed in the draft permit statement of basis and the public notice for the draft permit, the proposed facility would emit Particulate Matter (PM), PM_{10} (PM less than 10 microns), $PM_{2.5}$ (PM less than 2.5 microns), Nitrous Oxides (NO_x), Sulfur Dioxide (SO_2), Carbon Monoxide (CO), Hazardous Air Pollutants (HAP) and Toxic Air Pollutants (TAP), all of which are pollutants already emitted by the facility. Richland County submitted an air dispersion compliance demonstration to show the facility will not interfere with the attainment of the NAAQS for its regulated pollutants (PM_{10}, $PM_{2.5}$, NO_2, SO_2, and CO). Background concentrations (which account for emissions from other facilities and naturally occurring emissions) were included in the analysis. The facility also conducted a compliance demonstration for SC Regulation 61-62.5, Standard 8 Toxic Air Pollutants[4]. A summary of the proposed project's compliance demonstration for these standards is available in the Air Compliance Analysis Summary Sheet.

The proposed RNG project is also subject to two federal regulations, including a New Source Performance Standard (NSPS)[5]; and a National Emission Standards for Hazardous Air

[3] https://www.epa.gov/naaqs; Accessed on August 2, 2024.
[4] https://des.sc.gov/sites/des/files/Library/Regulations/R.61-62.5_Std.8.pdf; Accessed on August 2, 2024.
[5] https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-60/subpart-Cf; Accessed on August 2, 2024.

Pollutants (NESHAP)[6], and these regulations govern the operation, monitoring, recordkeeping, and reporting for the proposed facility. Also, the emissions from the RNG facility will be similar to those from the existing operations for processing the landfill gas. The facility would instead operate its own RNG equipment in lieu of sending the landfill gas (LFG) to the existing separately owned/operated onsite LFG-to-Energy facility or the existing control devices.

As previously stated, the draft construction permit was placed on public notice to allow for public participation in the permitting process. It is a priority of the Department to empower communities to work closely with regulated facilities and local officials to identify potential community hazards and steps that could be taken to reduce risks.

4. Science

A comment opposing the construction of the gas plant at this location based on climate science and scientific grounds was received. Additionally, a comment was received about the EPA's push for waste-gas-to-energy projects and inquiring about the measurement of success for these projects.

A comment was also received that the proposed RNG plant seems to counter the need for reducing greenhouse gas (GHG) emissions and that capturing and converting the existing methane from the landfill into something else that's going to be combusted is not reducing GHG emissions.

Response: EPA resources address the science and implementation of RNG projects and promote such projects from an environmental standpoint. Specifically, the EPA has stated that it "encourages the recovery and beneficial use of biogas as a renewable energy resource, including the production of [RNG] when feasible, as a means of reducing emissions and providing other environmental benefits."[7] In the case of MSW landfills, EPA further explains that "LFG is generated in the MSW landfill as the organic wastes decompose anaerobically. Instead of escaping into the air, LFG can be captured, converted and used as an energy resource. "[8] Richland County is subject to regulations that require it to capture and destroy LFG generated from the landfill. Therefore, the LFG collection infrastructure is already in place and ready for use by the proposed RNG facility. The proposed facility plans to produce RNG for sale and injection into a nearby pipeline.

Specifically, this project will offset some the emissions generated by the landfill by sending it to the RNG facility instead of flaring it. The project will not result in significantly different emissions but will rather allow for treatment of landfill gas by Richland County through its own RNG facility, as opposed to the existing, separately owned and operating LFG-to-energy

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[6] https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-63/subpart-AAAA; Accessed on August 2, 2024.

[7] U.S. EPA. An Overview of Renewable Natural Gas from Biogas, EPA 456-R-24-001, at 1. January 2024. https://www.epa.gov/system/files/documents/2024-01/lmop_rng_document.pdf

[8] *Id*. at 2.

facility.

7LMOP[7] encourages the recovery and beneficial use of biogas generated from organic municipal solid waste and has developed a LFG Energy Benefits Calculator[9]. The Calculator can be used to estimate direct, avoided and total (GHG) reductions, as well as environmental and energy benefits, for a LFG energy project. LMOP updates the Calculator annually based on the most currently available factors. The Calculator expresses reductions of methane and carbon dioxide in equivalent environmental and energy benefits.

5. Liquified Natural Gas

A commenter expressed concerns regarding the long-term implications of increasing pipeline production of LNG [Liquified Natural Gas].

Response: The proposed project will not be producing liquified natural gas (LNG). LNG requires additional processing, and LNG is processed natural gas that has been condensed into a liquid form by reducing its temperature to approximately minus 260°F at ambient pressure[10]. According to the LMOP LFG Energy Project Database[11], as of March 2024 there were 664 operational LFG energy projects, 114 of which produce RNG[7]. Of the 114 LFG-to-RNG, only one uses LNG as a delivery method. Additionally, of the 100 RNG projects planned or under construction and where the RNG delivery method is specified, none list LNG as the method.

6. Pipeline Safety

A comment was received regarding concern about pipeline safety including explosions and how these pipelines will affect the air, water and soil and chemicals such as PFAs (Per- and Polyfluoroalkyl Substances) in the gas. A comment was also received that the proposed gas lines into which the RNG will be injected need to be shown on the map, as well as any subsequent, planned new gas lines.

Response: Pipeline construction and safety concerns are outside the scope of this Department permitting action. The Federal Energy Regulatory Commission (FERC) has oversight over the construction and installation of pipelines. Once the pipeline is in operation, the U.S. Department of Transportation's Pipeline and Hazardous Pipeline Materials Safety Administration (PHMSA) takes over the responsibility. The U.S. Department of Transportation (US DOT) also establishes federal safety standards for natural gas pipelines.

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[9] https://www.epa.gov/lmop/landfill-gas-energy-benefits-calculator. Accessed on July 16, 2024.
[10] https://www.phmsa.dot.gov/pipeline/liquified-natural-gas/liquefied-natural-gas-overview#:~:text=Liquefied%20natural%20gas%20(LNG)%20is,%C2%B0C)%20at%20ambient%20pressure. Accessed on June 13, 2024.
[11] https://www.epa.gov/lmop/landfill-gas-energy-project-data Accessed on May 31, 2024.

Pipeline safety in the state is regulated by the SC Office of Regulatory Staff (SC ORS). The Pipeline Safety department of the SC ORS enforces the federal pipeline safety regulations set forth by the US DOT in addition to state rules and regulations governing gas systems. The state of South Carolina has an agreement with PHMSA wherein all operators in the state must comply with these guidelines and undergo an annual re-certification by PHMSA. The SC ORS inspects facilities, performs incident investigations, and conducts various types of operator training.

Waste Management Renewable Energy (WMRE) would be the owner of pipeline laterals (approximately 4 miles) needed to connect to an existing natural gas pipeline owned by a gas company. The WMRE pipeline laterals would be operated by a third party. WMRE and/or the gas company would be required to acquire any necessary permits or approvals for the pipeline laterals, connection point, etc. to comply with all local, state and federal regulations, including any new regulations for PFAs.

PHMSA has the National Pipeline Mapping System (NPMS) Public Viewer[12] which enables the user to view NPMS pipelines as well as other related system. NPMS pipeline data consists of gas transmission pipelines jurisdictional to PHMSA. The natural gas lines for Richland and Kershaw Counties (each outlined in yellow) are shown in blue on the map below.

[12] NPMS Public Viewer (dot.gov); Accessed on August 2, 2024.

7. Flaring Limits and Emissions

A comment was received concerning the lack of measurable limits when flaring is allowed to happen, explicit limitations on the amount and time the plant flares gas, and emissions exceeding operational capacity especially as it relates to gas flaring. Additionally, the Department received a comment stating that even limited operation of the flare will allow methane to escape and that unlit flares contribute to methane emissions; therefore, the commenter requested a monitor be placed to always capture the methane from the candlestick flare.

Response: As detailed in the air construction permit application for the Richland County RNG facility, in addition to the use of a thermal oxidizer to combust waste gases from the process, the proposed RNG facility will include a process flare/off-spec flare to combust treated, off-spec gas for limited periods. The flare would normally operate upon start-up of the RNG process, when the RNG will not yet be pure enough to inject into the pipeline. Once the RNG meets pipeline specifications, the flare will be turned off. If there is an extended outage, the proposed operation is to shut down the RNG plant and to route the collected gas to the landfill's LFG control devices in accordance with the Title V operating permit. The flare is expected to operate infrequently and for short periods of time only under the following conditions:

- During an outage of the refining process
- The startup of the system that initially produces off-specification natural gas
- For limited periods during shutdown of the RNG process
- To combust off-specification process gas that cannot be transferred to the natural gas pipeline.

These alternate operations would occur infrequently, for short durations. Emissions calculations provided by the facility address emissions from both the flare and the thermal oxidizer and are summarized in the Statement of Basis. The facility has taken limits on the emissions that can produced by the off-spec/process flare which is only intended to operate during the times listed above. Therefore, the facility has accounted for the emissions from both the off-spec flare and from the thermal oxidizer. Additionally, as previously stated, the purpose of the proposed facility is to sell the RNG. Thus, the facility intends to minimize the operation of the off-spec flare (and the resulting combustion of product).

The proposed facility is subject to S.C. Regulation 61-62.1, Section II(E))[13] as this facility is requesting a federally enforceable limit to constrain emissions below the major source threshold under Prevention of Significant Deterioration[14] (PSD) regulations. Therefore, condition B.5 of the synthetic minor construction permit limits the operation of the off-

[13] https://des.sc.gov/sites/des/files/Library/Regulations/R.61-62.1.pdf; Accessed on August 2, 2024.
[14] https://des.sc.gov/sites/des/files/Library/Regulations/R.61-62.5_Std.7.pdf; Accessed on August 5, 2024.

spec/process flare to a maximum of 500,000 million BTU per year which is 31% of its design capacity. It also requires the owner or operator to record the actual methane content in the gas stream to the off-spec/process flare daily and to measure the flow of off-spec RNG to the off-spec/process flare is in operation. The condition also specifies that methane content in the gas stream to the process flare will be measured using a continuous methane monitor. Reports of the calculated heat rate and methane content are required to be submitted to the Department semiannually to review for compliance with the limit.

Also, the process flare would be equipped with a continuous natural gas pilot to allow for the immediate flaring of gas during system outages. The permit requires the facility to operate and maintain a flame indicator on the flare and conduct maintenance checks at least monthly for proper flare operation.

8. Methane Emissions

A comment was received that the amounts of methane escape and capture rates from the landfill are estimates and based upon outdated modeling methods rather than actual measurements and if the goal is to reduce methane significantly, then measurements before and after are necessary to determine the actual efficiency of the systems and equipment.

A comment was also received stating that, "There are significant gaps in landfill leak detection and quantification protocols" and "robust dataset of quantified emissions at U.S. landfills finds little agreement with national reporting frameworks." There were comments asserting that Infrared spectrology or spectrometry from above any landfill in question is the most up to date to measure where and how much methane is being emitted or leaked into the atmosphere and that methane satellite programs are available.

Response: The Department reviews the emission factors used for evaluating potential to emit (PTE) on a permit-by-permit basis. The landfill gas and methane emissions were calculated using emission factors and engineering judgment based on EPA's Landfill Gas Emissions Model (LandGEM[15]) based on Chapter 2, Section 4.2; Draft October 2008[16] update of the EPA-developed document, *AP-42: Compilation of Air Emission Factors* (AP-42). Revisions to AP-42 Chapter 2, Section 4.2 were finalized August of 2024[17]. The construction permit application for this permit was received on April 10, 2024. Because the permit application was received prior to the revisions to AP-42, the application was prepared based on the information available at that time.

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[15] https://www.epa.gov/catc/clean-air-technology-center-products#software; Accessed on August 2, 2024.

[16] https://www.epa.gov/sites/default/files/2020-10/documents/d02s04_0.pdf; Accessed on August 2, 2024.

[17] https://www.epa.gov/system/files/documents/2024-08/c2s4_2024_final_0.pdf; Accessed on August 16, 2024.

Based on AP-42, Section 2.4.4.1; October 2008 update, the landfill gas collection systems typically result in an average gas capture efficiency of 75%. This is also the capture efficiency used by the Richland County Landfill in its emission calculations. Therefore, it estimated that 25% of the landfill gas generated at the facility escapes and is not captured and is therefore included in the facility's PTE. The finalized version of AP-42 Section 2.4 changes the average gas capture efficiency from 75% to a reference to Table HH-3 to Subpart HH of Part 98 - Landfill Gas Collection Efficiencies[18] for calculations. Uncontrolled PTE estimates based on the 2024 revised version of AP-42 Section 2.4 may may differ from those appearing in the permit application for the LFG generated pollutants. However, the permit's federally enforceable limits ultimately restrict PTE for some of these pollutants, and any change in emissions estimates for the pollutants without PTE limits should not trigger any new regulatory requirements.

For future emission reporting, the facility will be required to determine its actual emissions for compliance with permit conditions and limitations based on the final version of AP-42, including updating its landfill gas collection efficiency. Additionally, emission calculations for future projects submitted by the facility should be based on the final version of AP-42 Section 2.4 if electing to use AP-42 to estimate the facility's emissions.

Richland county uses a conservative approach when calculating its controlled emissions. The controlled emissions are calculated based on the maximum flow rate of each landfill control device at its design capacity, all operating simultaneously. This flowrate is typically higher than that calculated using LandGEM. Also, operating all the control devices at the same time is not the planned operation as the new renewable natural gas plant will operate in lieu of the existing gas-to-energy facility and control devices. Therefore, the controlled emissions provided are an overestimate of those expected from the facility.

The facility is subject to federal regulation 40 CFR Part 63 Subpart AAAA, National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills and 40 CFR Part 60 Subpart Cf: Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills. The regulations both require that each owner or operator of an MSW landfill with a gas collection and control system must operate the collection system so that the methane concentration is less than 500 parts per million (ppm) above background at the surface of the landfill. To determine if this level is exceeded, the owner or operator must conduct quarterly emission monitoring (SEM). The location of each exceedance of the 500-ppm methane concentration and the concentration recorded at each location for which an exceedance must be submitted to the Department semiannually. On December 12, 2022, the EPA issued a letter[19] approving the use of an Unmanned Aerial System (UAS)-based alternative to conduct SEM in addition to the methods outlined in the regulations. The SCDES has also approved the use of this alternative SEM. Therefore, the EPA is approving

[18] Federal Register : Revisions and Confidentiality Determinations for Data Elements Under the Greenhouse Gas Reporting Rule; Accessed on August 16, 2024.

[19] https://www.epa.gov/system/files/documents/2022-12/Barron%20Sniffer%20Alt%20with%20OTM%2051%20attached_signed.pdf; Accessed on August 2, 2024.

the use of technology and alternative methods for methane emission monitoring that should aid in the concerns of the commenter.

For the renewable natural gas process, methane is a key component of the gas. Thus, the process is designed to keep methane in the process gas stream and out of the waste gas streams and the atmosphere.

9. Gas Compression

A comment was provided that little attention has been made to the gas compressor and that compressor stations emit pollutants into the air and soil which damage human health. A comment was also received asking if the planned compressor system will also emit these pollutants and if it does, the commenter urged that applications should include plans written for prevention, mitigation, and remediation of pollutant escape and damage in the community.

Response: The renewable natural gas plant proposes to compress the gas in the treatment and refining process so that it can be transferred to the natural gas pipeline. The gas compression that is part of the renewable gas plant is not a gas compressor station. A gas compressor station is a facility that stabilizes the pressure and flow rate of gases within a pipeline network. They are located at intervals typically between 40-100 miles to enable the natural gas to continue flowing at the desired rate.

The facility proposes to install three compressors powered by electricity. The compressors are subject to the NSPS and NESHAPS for the gas treatment. Since the compressors run off electricity, there will not be any combustion emissions from the sources. Additionally, the facility is not one of the 28 specifically listed categories in the Title V[20] or the PSD programs requiring the inclusion of fugitive emissions in determining its PTE. Therefore, the submission of any fugitive process emissions estimates from the compressors is not required.

10. Site Specific Treatment Monitoring Plan

A comment was received that SCDES Bureau of Air must require the site-specific treatment monitoring plan (plan) be completed prior to issuing an air permit and that the permit application should not be considered complete without the plans.

Response: In accordance with 40 CFR 63.1983(b)(5)(ii), the plan would be required upon start-up of the facility. Since the regulation does not require the plan until start-up, the absence of the plan does not make the application incomplete. However, the Department requested the plan, and the facility's current plan is appendix A of this summary response to comments document. The plan will be finalized and kept onsite. It will be reviewed by the

[20] https://des.sc.gov/sites/des/files/Library/Regulations/R.61-62.70.pdf; Accessed on August 6, 2024.

BAQ inspectors during comprehensive air inspections. The facility must update the plan if there are changes to its Treatment System.

11. Landfill Intake

A comment was received that SCDES should focus on reducing what goes into landfills (in addition to the food diversion programs) to prevent emissions.

Response: Landfill waste reduction is outside the scope of this air quality permitting action. However, we note that the SCDES is dedicated to promoting recycling and waste reduction and has a webpage[21] dedicated to these efforts. The webpage contains information for recycling and reducing waste at home, school, and for businesses and government. It also lists recycling initiatives and programs. One such program is the Don't Waste Food SC[22]. The program is a "collaborative outreach campaign that brings together ambassadors from the public and private sectors dedicated to sharing knowledge, coordinating resources and working together to reduce food waste in South Carolina." Waste Management also provides information on recycling on its website[23].

12. Greenhouse Gas Emissions

A comment was received that SCDES should focus on GHG emissions as a whole and not simply piecemeal and that this is piecemeal because there was one company trying to build this facility.

Response: Regulatory and air permitting requirements with respect to GHG emissions are implemented by SCDES consistent with underlying EPA regulations pursuant to the Clean Air Act. The EPA's Greenhouse Gas Reporting Program[24] (GHGRP) requires reporting of GHG data and other relevant information from large GHG emission sources, fuel and industrial gas suppliers, and carbon dioxide injection sites in the United States. This data can be used to track and compare facilities' GHG emissions, identify opportunities to cut pollution, minimize wasted energy, and save money. The data may also be used to find high-emitting facilities in their area, compare emissions between similar facilities, and develop policies. EPA works with industry and others to reduce GHG emissions through regulatory initiatives and partnership programs[25]. Therefore, the EPA looks at GHG emissions individually and on a larger scale. Additionally, as previously stated, the EPA encourages the use of biogases as a source of renewable energy as way of reducing GHG emissions.

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[21] Recycling & Waste Reduction | South Carolina Department of Environmental Services (sc.gov); Accessed on August 2, 2024.
[22] https://des.sc.gov/community/recycling-waste-reduction/dont-waste-food-sc; Accessed on August 14, 2024.
[23] Recycling Resources, Posters & Classroom Tools | WM; Accessed on August 2, 20243
[24] Greenhouse Gas Reporting Program (GHGRP) | US EPA; Accessed on August 2, 2024.
[25] https://www.epa.gov/climate-change/what-epa-doing-about-climate-change; Accessed on August 2, 2024.

13. General Opposition

Comments were received asserting general opposition to the facility.

Response: The Department does not have the authority to make permitting decisions based on general support or opposition to a proposed project. The approval, denial, or modification of a draft permit is instead based on the technical review of the proposed project, the state and federal air quality regulations, and the proposed facility's ability to meet those regulations.

Appendix A – Site-Specific Treatment Monitoring Plan

RICHLAND RENEWABLE NATURAL GAS PLANT LANDFILL GAS TREATMENT SYSTEM MONITORING PLAN

This Landfill Gas Treatment System Monitoring Plan has been prepared pursuant to 40 CFR 63 Subpart AAAA and 40 CFR 60 Subpart Cf. The landfill gas treatment system consists of equipment required to treat landfill gas prior subsequent sale or beneficial use. Landfill gas treatment system includes filtration, compression, and moisture removal. As such, the purpose of this plan is to outline monitoring and data collection practices to ensure the treatment system is operating as designed to filter, compress, and remove moisture. Site will perform routine parametric monitoring to ensure proper operation. Continuous monitoring of the parameters below is not required for proper operation of the treatment system.

Description of each key component of a treatment system:

- **Filtration** - Landfill gas passes through two filtering steps in the treatment system. Prior to the suction scrubber, there is a 10-micron mesh pad that is followed by a vain pack in the inlet of the suction scrubber. The monitoring method, frequency and operating range are in Table 1. This will ensure that the treatment system is properly removing particulate matter as needed to meet the definition of treatment system and for the intended beneficial use.

- **Compression** - Landfill gas is extracted from the landfill under vacuum. The compression step is required to ensure gas is delivered at the needed pressure to be used as a feedstock to be used in the RNG plant. The compression process increases the pressure and temperature of the gas. The monitoring method, frequency and operating range in Table 1 ensure compression of the landfill gas is occurring as needed to meet the definition of treatment system and for the intended beneficial use.

- **Moisture removal –** The gas is processed through a gas cooler to lower the temperature which removes moisture. As the gas is cooled, entrained moisture is condensed and trapped by the in-line coalescing filters, removed from the process and managed in the condensate removal system. The monitoring method, frequency and operating range in Table 1 ensure proper moisture removal is occurring to for the intended beneficial use of the treated landfill gas and meets the definition of treatment system.

Appendix A – Site-Specific Treatment Monitoring Plant

Table 1 - Landfill Gas Treatment System Monitoring Plan				
Equipment	**Parameter**	**Inspection Frequency**	**Monitoring Device**	**Range of Operation**
Compressor	Vacuum Suction	Twice per Month*	Pressure Monitoring Device	Range of 1 to 120 Inches of W.C
Vane Pack	Differential Pressure	Twice per Month*	Pressure Monitoring Device or Calculated	0.1 – 1.9 psi / 2 to 50 inches WC (differential pressure between the inlet and outlet of the filter vessel)
10-Micron Mesh Pad	Differential Pressure	Twice per Month	Pressure Monitoring Device or Calculated	0.1 – 1.9 psi / 2 to 50 inches WC
Gas Cooler (Moisture Removal)	Differential Temperature	Twice per Month	Temperature Gauges	Differential temperature of at least 35F

*-readings taken at same time

Actions Taken for readings out of Range

For any readings taken that demonstrate that the above equipment is operating out of range, maintenance will be scheduled to be taken within 7 days of the reading. Maintenance may include changing out or cleaning filters, suction lines, or other actions based on manufacture and operational recommendations.

Responsibility for Data Collection

The following job titles that are authorized to take these readings: Gas Plant Operator, Gas Operations Manager, Landfill Gas Technician/Consultant, Operations Specialist, and Regional Gas Plant Supervisor.

Recordkeeping

The person(s) performing the inspection as per the frequency listed in Table 1, will record the observed value and determine if the value is within the range of operation. If the

recorded value is out of the range of operation, they will immediately take corrective action, including contacting all relevant staff, as necessary. Furthermore, collected data and a description of the actions taken will be placed into the plant file.

Quality Assurance/Maintenance/Repair

The data and equipment are reviewed regularly during the month to verify accuracy and look for trends that may be characteristic of diminishing performance. Additionally, staff perform visual inspections of the equipment and note issues as they arise. Repairs will be made as necessary. At a minimum, filters will be cleaned and or replaced as needed to maintain the listed differential pressures.