



Verification Report

CAR495 Greenville County Landfill Gas Utilization Project

**Reporting Periods: January 1, 2023 to December 31, 2023 and January
1, 2024 to July 8, 2024.**

Prepared for:

Anew Environmental LLC

May 7, 2025

**TÜV SÜD America, Inc.
743 Horizon Court, Suite 385
Grand Junction, Colorado 81506
(970) 241-9298**

Table of Contents

1.0	Introduction	1
1.1	Project Background & Site Description	1
1.2	Responsible Party	1
1.3	Verification Team	1
1.4	Objectives.....	1
1.5	Scope.....	1
1.6	Verification Criteria	2
2.0	Verification Activities Summary	2
3.0	Verification Findings.....	3
3.1	Assessment of the GHG Emission Reductions Project Operations	3
3.2	GHG Project Boundary (sources, sinks and/or reservoirs)	3
3.3	Project Eligibility Criteria	3
3.4	Ownership of Generated Emission Reductions.....	5
3.5	GHG Monitoring and Management Systems	5
3.6	Instrument QA/QC	5
3.7	Assessment of GHG Emission Reductions Calculations	6
3.8	Variances.....	7
4.0	Verification Results	7
5.0	Verification Opinion.....	8

1.0 Introduction

TÜV SÜD America, Inc. was contracted to perform the verification of the Greenville County Landfill Gas Utilization Project (Project) for the reporting periods January 1, 2023 – December 31, 2023 and January 1, 2024 – July 8, 2024 to the Climate Action Reserve (Reserve) U.S. Landfill Project Protocol 6.0 (Protocol). The Project is located in the town of Greer, SC at the Enoree Landfill (Landfill).

1.1 Project Background & Site Description

The Landfill was opened in 1991 and was closed in 2007. Phase I of the landfill accepted waste from 1991 until 1993. Phase II of the landfill accepted waste from 1996 until 2007. Greenville Gas Producers (GGP) owns and operates the gas collection and control system. The Landfill has 2,595,808 Mg (2,855,389 Tons) of waste in place as of closure. The Project consists of the collection of landfill gas (LFG) from the landfill and its subsequent destruction by combustion in one-1.6 MW CAT Generator with an open flare as backup at the site.

1.2 Responsible Party

Project Developer: Anew Environmental LLC (Anew)

Landfill Owner: Greenville County

Gas Collection and Control System Owner: Greenville Gas Producers, LLC (GGP)

Anew is responsible for the preparation and fair presentation of the GHG statement in accordance with the criteria listed below in Table 1.

1.3 Verification Team

TÜV SÜD is responsible for expressing an opinion on the GHG statement based on the verification. The TÜV SÜD verification team consisted of the following individuals who were selected based upon verification experience and knowledge of landfill gas destruction projects.

Lead Verifier: Masury Lynch

Team Members: Ashley Emery, Pilar Gutierrez

Senior Internal Reviewer: Garrett Heidrick

1.4 Objectives

The goal of the verification activities was to ensure that the claimed GHG emission reductions were complete, consistent, accurate, transparent, and permanent and that the Project was in compliance with the Reserve's project additionality, monitoring, and reporting requirements. Furthermore, the verification activities ensure that the data provided to TÜV SÜD is well documented and free of any material errors or omissions.

1.5 Scope

The scope of the verification consisted of the following independent and objective activities:

- Review the reporting periods' Project Monitoring Plans;
- Review the Project data acquisition and quality control procedures;
- Review the Project's baseline emissions and confirm the baseline and Project boundaries;
- Review the Project's evidence of environmental and regulatory requirements to ensure that the Project is additional;
- Review the Project's emission reduction calculations;
- Review the Project documents and data against the criteria listed in Table 1;
- Issue requests for additional documentation, clarifications, and corrective actions as necessary; and
- Issue a verification report, verification opinion, and list of findings to Anew and the Reserve.

1.6 Verification Criteria

Table 1 – Summary of Verification Criteria

Criteria	Details
Standard of Verification	• CAR U.S. Landfill Project Protocol, Version 6.0 (June 2022) • E&C to the Protocol, Version 6.0 (April 2023) • Reserve Offset Program Manual (April 2024) • Reserve Verification Program Manual (February 2021) • Use of Global Warming Potential Values for All Offset Protocols Policy Memorandum (July 2022)
Verification Process	The Reserve Verification Program Manual and ISO 14064-3:2019 “Specification with guidance for the validation and verification of greenhouse gas statements”
Level of Assurance	Reasonable assurance
Materiality	95% accuracy level (less than 5% error) because total annual emission reductions are less than 25,000 tCO ₂ e.

2.0 Verification Activities Summary

The Verification process consisted of the following activities as outlined in the verification plan:

- TÜV SÜD completed a NOVA/COI form to identify any potential conflict of interest with the Project, GGP, Anew, or technical consultants. The NOVA/COI form was submitted to the Reserve and the COI assessment revealed no conflicts of interest and was approved by the Reserve on July 18, 2024.
- TÜV SÜD held a verification kick-off meeting with Anew on September 25, 2024. During the kick-off meeting TÜV SÜD reviewed the verification objectives and process, reviewed the verification schedule, and requested the verification background documents.
- TÜV SÜD performed a strategic review and risk assessment of the received data and support documents in order to understand the scope and areas of potential risk in the GHG emissions reductions.
- TÜV SÜD developed a risk-based sampling plan based upon the strategic review and risk assessment. The verification plan and sampling plan were used throughout the verification and were revised as needed based upon additional risk assessments.
- TÜV SÜD performed a risk-based desktop review of the submitted verification documents. The desktop review included an assessment of the GHG calculation methods and inputs, source data completeness, GHG management and monitoring systems, evidence of regulatory compliance, and record retention practices.
- TÜV SÜD conducted a site visit for the previous verification on September 28, 2023. During the site visit TÜV SÜD performed key personnel interviews; inspected the Project equipment; and observed the onsite GHG management systems and data gathering, monitoring, and handling practices.
- TÜV SÜD submitted requests for corrective actions, non-material findings, additional documentation, and clarifications, as necessary to Anew throughout the verification.
- TÜV SÜD’s senior internal reviewer conducted a review of the verification sampling, report, and statement.
- TÜV SÜD issued a final verification report, verification opinion, and list of findings.
- TÜV SÜD held an exit meeting with Anew.

3.0 Verification Findings

3.1 Assessment of the GHG Emission Reductions Project Operations

The Project currently collects landfill gas from the Landfill and destroys it via combustion in one-CAT 1.6 MW capacity electricity generating engine and an open flare for engine startups. Credits are being claimed for methane destroyed by the flare and engine. The LFG is pulled from 68 wells at the landfill and passes through a clean-out that removes condensate which is transferred to the landfill's condensate collection system.

TÜV SÜD confirmed that the landfill is not a bioreactor and does not re-circulate leachate nor add any liquid other than leachate in a controlled fashion to accelerate or enhance the anaerobic biodegradation of the waste.

3.2 GHG Project Boundary (sources, sinks and/or reservoirs)

According to the Protocol, carbon dioxide and methane are the only GHGs included in the Project boundary from both the baseline and Project activities. The emissions resulting from the Project activity must be deducted from the Project baseline emissions in order to calculate total emission reductions. These Project emissions include the carbon dioxide resulting from the consumption of electricity from the grid and consumption of propane related to Project activities. Baseline emissions are the total methane vented to the atmosphere less the oxidation of methane by soil bacteria. Table 2 lists the sources of GHG emissions reviewed during the verification of the Project.

Table 2 – Summary of the Project GHG Sources, Sinks and Reservoirs

Activity	GHG Sources, Sinks & Reservoirs
Baseline	• CH₄ vented to the atmosphere. • Percent methane oxidized by soil bacteria. As the landfill is not covered with a synthetic liner, a 10% oxidation factor resulting from natural oxidation by soil bacteria was applied to the baseline emissions.
Project	• CH₄ from the incomplete combustion of LFG sent to the engine. • CO₂ from the combustion of fossil fuels (propane) used during operation and maintenance of the Project activity. • CO₂ resulting from the consumption of imported electricity.

3.3 Project Eligibility Criteria

The Protocol specifies four eligibility rules that a project must meet in order to register emission reductions with the Reserve: Location, Project Start Date, Additionality, and Regulatory Compliance. Below is a summary of the Reserve eligibility requirements and the Project's compliance to each requirement.

- **Eligibility Rule 1: Location**

The Project is a US-based landfill located in the town of Greer, SC. The Project therefore meets this eligibility requirement. TÜV SÜD confirmed this information with a site visit.

- **Eligibility Rule 2: Project Start Date**

The Landfill Project Protocol states a project start date is the date when methane was first continuously destroyed in a qualifying destruction device at the site. TÜV SÜD reviewed the GGP destruction delivery and initial combustion notice as well as Project Submittal form to confirm that the Project first began continuous methane destruction on August 1, 2007. The Project submittal form was completed and submitted to the Reserve on September 1, 2009. The Project is currently in its second crediting period starting on September 1, 2018 and ending on August 31, 2028.

- **Eligibility Rule 3: Additionality**

Performance Standard Test

Prior to the Project activity, the Landfill was collecting and venting gas, but was not destroying gas. TÜV SÜD confirmed this through time-stamped satellite imagery prior to the project start date. TÜV SÜD also observed no evidence of a previous landfill gas collection system while on site for the verification of the previous reporting period.

Thus, the Project passes the Performance Standard Test number 2 since it involves:

“Installation of a new qualifying destruction device at an eligible landfill where landfill gas is currently collected and vented but has never been destroyed in any manner prior to the project start date.”

Legal Requirement Test

During the site visit, TÜV SÜD interviewed GGP about the procedures to ensure that the Project meets environmental compliance requirements, and the Legal Requirement Test. GGP monitors federal, local, and state regulations to ensure that the Project is in environmental compliance and that there is no mandate to collect and combust LFG. TÜV SÜD confirmed that there are currently no laws or ordinances requiring the Landfill to collect and destroy LFG.

The Landfill is a municipal solid waste (MSW) landfill that exceeds the design capacity of 2.5 million megagrams (Mg) or 2.5 million cubic meters as specified in the New Source Performance Standards (NSPS) codified in Title 40 of the Code of Federal Regulations (CFR) Part 60, Subpart WWW. The landfill is therefore subject to the requirements of the NSPS for MSW landfills. The Landfill has not been permitted for an expansion from the original design capacity, nor has any construction been undertaken towards an expansion since July 17, 2014, therefore the Landfill is not subject to the NSPS XXX Regulations.

TÜV SÜD examined the NMOC modeling results for the landfill and found that the calculated NMOC emission rate for 2006 was 10.78 Mg/year, which is below the 34 Mg/year threshold for a required gas collection and combustion system. The last NMOC testing occurred in 2006 and since the landfill closed in 2007, no further testing will be required.

TÜV SÜD also reviewed the Project’s Monitoring Plan which defines how the Project continues to exceed the Legal Requirement Test. Landfill personnel review local, state, and federal regulations prior to each verification period in order to confirm that there are no new requirements or laws that mandate the GCCS to be in place. TÜV SÜD also reviewed the Attestation of Voluntary Implementation form and confirmed that it was fully executed after the end of the reporting period and uploaded to the Reserve. This attestation states that the project was implemented and established voluntarily.

During the review of the supporting evidence, TÜV SÜD did not observe any indication that the Landfill was mandated to destroy LFG. Additionally, there are no local, state, or federal requirements for the installation of a GCCS at the Landfill. Therefore, the results of the review indicated that GGP is following its Monitoring Plan procedures to assure that it passes the Legal Requirement Test.

- **Eligibility Rule 4: Regulatory Compliance**

TÜV SÜD reviewed the procedures described in GGP’s monitoring plan to ensure that the Project remains in compliance with all applicable local, state, and federal requirements. TÜV SÜD searched the Environmental Protection Agency’s Enforcement & Compliance History Online (ECHO) database and confirmed with the Solid Waste Compliance division of the South Carolina Department of Health & Environmental Control that there were no notices of violation or unresolved compliance issues. TÜV SÜD

reviewed environmental and operating permits including Landfill's operating permit. During TÜV SÜD's review there was no evidence of noncompliance found, and the procedures for ensuring regulatory compliance in the Monitoring Plan were being properly followed. Finally, TÜV SÜD confirmed signature of the Attestation of Regulatory Compliance, after the end of the reporting period, which was uploaded to the Reserve.

3.4 Ownership of Generated Emission Reductions

TÜV SÜD reviewed Account Holder Project Transfer Form, which transferred the title to emissions reductions and the management of the Project from Greenville Gas Producers, LLC to Element Markets Emissions, LLC on May 26, 2020. TÜV SÜD also reviewed the Carbon Credit Purchase and Sale Agreement, which confirms Element Markets Emissions, LLC's ownership of the carbon offsets generated by the project until sold to Greenville Gas Producers, LLC. Element Markets Emissions, LLC merged with Bluesource in June 2022 to become Anew Environmental, LLC, who is the current Project Developer, Account Holder, and owner of the emission reduction credits as demonstrated by the Account Holder Project Transfer Form and Carbon Credit Purchase and Sale Agreement. TÜV SÜD also reviewed the Attestation of Title uploaded to the Reserve which attests that Anew owns the emission reduction credits generated by the Project.

3.5 GHG Monitoring and Management Systems

TÜV SÜD reviewed the data management systems during the site visit during the last verification and desktop review. TÜV SÜD completed the majority of the GHG management systems review during the site visit by observing the onsite procedures and interviewing the personnel responsible for the Project. The onsite review included an assessment of the Project data collection, processing and handling procedures, recordkeeping and data storage, quality control and assurance procedures, record retention systems, and a field tour of the Project equipment. The desktop review included a detailed review of the Project monitoring plan and its conformance to Protocol requirements. TÜV SÜD also confirmed that the Project was implemented according to the Monitoring Plan.

For the 2023 reporting period, the primary project data includes the LFG flow to the flare and methane content of the LFG. Flow is measured to an engine; however, the engine was used as a backup destruction device. The LFG flow was continuously measured by two Yokogawa flow meters, one to each destruction device.

For the 2024 reporting period, the primary project data includes the LFG flow to the flare and methane content of the LFG. The engine was no longer used as a destruction device because it was removed from the facility and therefore, no data was monitored. The LFG flow to the flare was continuously measured by a Yokogawa flow meter.

During the previous site visit, TÜV SÜD observed that the positions of the flow meters allow for laminar flow of landfill gas. The flow meter internally corrects for temperature and pressure at 60°F and 1 atm. All monitored data is recorded continuously by a SCADA PLC system as well as a Yokogawa data recorder. The methane content of the landfill gas was measured using Elkins ENV200 handheld analyzer from January 1, 2023 to July 10, 2023 and then was continuously measured with an Ecotec gas analyzer for the remainder of the period.

TÜV SÜD reviewed the data storage and retention policies of Anew, GGP, and the Landfill and verified they were in conformance with the Protocol requirements and described in the Monitoring Plan. All data is kept for a period of ten years after the information is generated or seven years after the last verification.

3.6 Instrument QA/QC

TÜV SÜD reviewed evidence that the flow meters and methane analyzer met instrument QA/QC requirements as outlined in the Protocol for cleaning, inspection, and calibration. The Project Monitoring Plan describes the procedures for instrument field checks and calibrations. These procedures in the

CAR495 - Greenville County Landfill Gas Utilization Project: January 1, 2023 to December 31, 2023 and January 1, 2024 to July 8, 2024

May 7, 2025

Monitoring Plan are in compliance with the Protocol requirements. Ecotec does not recommend a calibration frequency. Elkins recommends checking the calibration one time per year with calibration gas. Yokogawa does not recommend a calibration frequency; therefore, the Yokogawa flow meters must be calibrated once every five years according to the Protocol.

The Project utilized two Yokogawa flow meters, one for the engine and one for the flare (VIR700405 and U1K502457, respectively), an Elkins Envision handheld gas analyzer, and an Ecotec FAU-TDL continuous gas analyzer. The engine and flare flow meters were used for the entirety of 2023 and only the flare flow meter was used during 2024. The handheld gas analyzer was used from 1/1/2023 – 7/10/2023 and the continuous gas analyzer was used from 7/10/2023 – 7/8/2024.

Both flow meters (VIR700405 and U1K502457) were calibrated on 2/6/2024 and the Ecotec gas analyzer was calibrated on 2/1/2024. All were found to be within +/-5% accuracy, meeting the Protocol required accuracy check within two months of the end date of the first reporting period (12/31/2023). The Ecotec gas analyzer was calibrated on 9/4/2024 and was found to be within +/-5% accuracy, meeting the Protocol required accuracy check within two months of the end date of the second reporting period (7/8/2024).

Landfill staff performed quarterly cleanings and inspections of the engine flow meter and gas analyzer on 1/24/2023, 4/17/2023, 7/17/2023, and 10/2/2023, which was documented in inspection reports reviewed by TÜV SÜD. These forms properly document the “as found” and “as left” condition of the equipment. Table 3 outlines the inspections and calibrations of the devices used during the reporting period. When the facility transitioned to the Ecotec telemetry system the cleaning and inspection procedures changed to mirror calibration frequency. If issues arose during the inspection, it would be documented, but “good” conditions were not documented. No issues were identified January 1, 2024 through July 8, 2024.

The Project submitted two variance requests for missed QA/QC requirements (see Section 3.8 Variances). Flow meter U1K502457’s field check was not within two months of the end date of the 2024 reporting period and the Elkins handheld gas analyzer missed its annual calibration requirement.

Table 3 – Summary of Cleanings, Inspections, and Calibrations

Device	Quarterly Cleanings and Inspections			
Flare Flow Meter U1K502457	1/24/2023	4/17/2023	7/17/2023	10/2/2023
Engine Flow Meter VIR700405	1/24/2023	4/17/2023	7/17/2023	10/2/2023
Device	Calibrations			
Flare Flow Meter U1K502457	12/15/2022; 2/6/2024; 2/20/2025			
Engine Flow Meter VIR700405	12/15/2022; 2/6/2024			
Handheld Gas Analyzer ENV200 2202210B	4/14/2022; 11/30/2023			
Ecotec FAU-TDL 1233	6/9/2023; 2/1/2024; 9/4/2024			

3.7 Assessment of GHG Emission Reductions Calculations

The emission reduction calculation assessment included a review of Project assumptions, raw data inputs, and accuracy of calculations. TÜV SÜD assessed the completeness of the raw data and how the data are transferred to the calculation spreadsheet. TÜV SÜD reviewed the formulas and raw data inputs for accuracy and compliance with Protocol requirements.

The Project data consisted of raw data in the form of spreadsheets of engine flow, methane analyzer measurements, and the calculation workbooks. TÜV SÜD compared raw data in the spreadsheets to the respective daily sums and then compared those data and the methane readings to the calculation workbooks. TÜV SÜD confirmed operational activity of the engine using kW production readings supplied in the raw data. TÜV SÜD confirmed that a zero percent discount was applied for continuous methane readings, a ten percent discount was applied for non-continuous methane readings, a 93.6 percent destruction efficiency was assigned to the Project's engine, a 96 percent destruction efficiency was assigned to the Project's flare, and a 10 percent discount applied due to the lack of a synthetic liner.

TÜV SÜD reviewed source documentation for Project emissions from purchased electricity and propane. TÜV SÜD confirmed that appropriate emission and conversion factors were used and reviewed the use of Protocol equations for Project emissions in Anew's calculation workbook.

TÜV SÜD recalculated the GHG emission reductions and compared the results to Anew's calculations to determine if the GHG emission reductions were materially correct. TÜV SÜD's calculations involved recalculation of the daily total LFG flow to the flare and engine, calculation of monthly methane destroyed, and recalculation of the project and baseline emissions. TÜV SÜD found no material misstatements in the final Project GHG reductions calculations.

3.8 Variances

The Project applied for two separate variances for missing two QA/QC requirements. For the first variance, approved by the Reserve on March 20, 2025, the Project calibrated the portable methane analyzer on 4/14/2022 and 11/30/2023, missing the annual calibration requirement by approximately seven months. For the second variance, approved by the Reserve on April 3, 2025, the Project conducted a field check on 2/20/2025 for the flare flow meter U1K502457, which is greater than two months from 7/8/2024. The details of these variances are discussed below.

1. CAR approved the late annual calibration requirement for the portable methane analyzer 2202210B with the following conditions:
 - a. The verifier confirms that the calibration for methane analyzer (SN: 2202210B) performed on 11/30/2023 has "as found" and "as left" conditions within the +/-5% accuracy threshold;
 - b. The verifier confirms that the monitoring plan is updated to ensure that all QA/QC requirements are met in the future; and
 - c. The verifier confirms that all other QA/QC requirements are met.
2. CAR approved the late field check for flow meter U1K502457 surrounding the end of the reporting period with the following conditions:
 - a. The verifier confirms that the field check for flow meter (SN: U1K502457) performed on 2/20/2025 has "as found" and "as left" conditions within the +/-5% accuracy threshold; and
 - b. The verifier confirms that all other QA/QC requirements are met.

TÜV SÜD confirmed that all conditions for both variances were met.

4.0 Verification Results

GGP and Anew provided sufficient evidence and documentation of its emission reductions, data collection procedures, and monitoring and quality control procedures. The verification process focused on verifying the emission reductions calculations and the source data used to quantify the emission reductions in accordance with the Reserve Landfill Project Protocol 6.0. The following is a summary of the verification results.

The Project reported emission reductions of 12,689 metric tons of CO₂e from January 1, 2023 to December 31, 2023 and 9,000 metric tons of CO₂e from January 1, 2024 to July 8, 2024. TÜV SÜD identified no material misstatements in the data or emission reductions calculations. Table 4 defines the emission reductions

verified for the reporting period. During the verification process, TÜV SÜD made requests for corrective actions, additional documentation, and clarifications to complete the verification. GGP and Anew sufficiently addressed all requests. The details of these requests are documented in TÜV SÜD's List of Findings provided to the Reserve, Anew, and GGP.

Materiality was calculated according to the equation for calculating percent error in the Reserve's Verification Program Manual: $\text{abs} ((\text{stated reductions} - \text{verified reductions}) / \text{verified reductions}) * 100$. TÜV SÜD determined that the Project's percent error for GHG ERs from January 1, 2023 to December 31, 2023 was 0.3%, calculated as follows: $\text{abs} ((12,689 - 12,650) / 12,650) * 100$. TÜV SÜD determined that the Project's percent error for GHG ERs from January 1, 2024 to July 8, 2024 was 0.6%, calculated as follows: $\text{abs} ((9,000 - 9,051) / 9,051) * 100$. Therefore, percent error was below the materiality threshold of 5% for both reporting periods.

5.0 Verification Opinion

TÜV SÜD America, Inc. conducted the verification of the CAR495 Greenville County Landfill Gas Utilization Project (Project) according to the requirements found in ISO 14064-3:2019. The objective of this verification was to ensure that the GHG statement is materially correct and conforms to all relevant criteria. The GHG statement is the responsibility of Anew Environmental LLC. A summary of the GHG statement is as follows:

- GHG-related activity: Methane destruction at the Enoree Landfill
- GHG statement: 1/1/2023 – 12/31/2023 and 1/1/2024 – 7/8/2024
- Criteria:
 - Reserve Offset Program Manual, April 2024
 - Reserve Verification Program Manual, February 2021
 - Reserve U.S. Landfill Project Protocol, V6.0, June 2022
 - Errata and Clarifications to the Protocol, V6.0, April 2023
 - Policy Memo: Use of Global Warming Potential Values for All Offset Protocols, July 2022

The data and information supporting the GHG statement were historical in nature.

Based upon TÜV SÜD's review, the GHG statement does not meet all requirements of the criteria including missing Protocol Section 6.2 QA/QC requirements for annual portable analyzer calibrations and field check within two months of the end of the reporting period. Two variances were granted for missing these requirements for handheld analyzer 2202210B and flow meter U1K502457.

TÜV SÜD has ensured Greenville County's effective use of controls related to the GHG statement. TÜV SÜD concludes that there is sufficient and appropriate evidence to support Greenville County's GHG statement and is issuing a Modified Opinion.

TÜV SÜD confirms that the GHG statement has been prepared:

- Without material discrepancy,
- In accordance with all applicable criteria, except for those listed in Section 3.8, and
- Verified to a reasonable level of assurance.

Table 4 - Emission Reductions Verified for January 1, 2023 – July 8, 2024

Year	Baseline Emissions CO ₂ e (tonnes)	Project Emissions CO ₂ e (tonnes)	Emission Reductions CO ₂ e (tonnes)
2023	12,715	26	12,689
2024	9,014	14	9,000

Note: Due to rounding, individual values might not equal totals and values are not representative of raw data used in the emission reductions calculation.

Lead Verifier Signature



Masury Lynch

Senior Internal Reviewer Signature



Garrett Heidrick