

LANDFILL GAS PROJECT VERIFICATION REPORT

Verification under the Climate Action Reserve (CAR)

*Project CAR790: Bi-County Landfill Gas
Destruction Project*

Reporting Period:
01 January 2019 to 31 December 2019

Prepared for:
Bi-County Gas Producers, LLC

11 June 2020



CLIMATE ACTION RESERVE



#0821
ISO 14065
Greenhouse Gas Validation
and Verification Body

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Summary

This report presents the findings of the verification assessment of the Bi-County Landfill Gas Destruction Project (“the Project” or “Bi-County”) developed by Bi-County Gas Producers, LLC (“the Project Proponent”). This assessment covers the Bi-County Landfill Gas Destruction Project’s greenhouse gas emission reductions reported to the Climate Action Reserve (the Reserve or CAR) for the verification period 01 January 2019 to 31 December 2019. The verification was undertaken to evaluate the Project Monitoring Plan (“Monitoring Plan V12 - CAR790 Bi-County 2019”) and assess whether the compiled data conforms to the verification criteria.

The evaluation was undertaken using the CAR Landfill Project Protocol, Version 3.0 (December 2, 2009) as well as the verification methodology developed by SCS for carbon offset projects submitted to the Reserve.

In the course of the verification assessment, the SCS verifiers developed findings which included New Information Requests (NIRs), Non-Conformity Reports (NCRs), and Observations (OBSs). All New Information Requests and Non-Conformity Reports have been adequately responded to, resulting in their closure.

On the basis of the information provided and the analyses completed, SCS was able to reach a decision on the emissions reduction reported by the Project Proponent to the Reserve. SCS verified the adequacy of the information provided in Bi-County Monitoring Plan, confirming that this document meets the requirements of the Reserve standards. Further, SCS was able to reach a positive opinion on the claimed emission reductions and removals presented on the Reserve website by the project proponent. Thus, SCS has verified 83,545 metric tonnes of CO₂e reductions and removals from the Bi-County Landfill Gas Destruction Project for the reporting period of 01 January 2019 to 31 December 2019.

Introduction

SCS Global Services (SCS) is a global leader in third-party certification, auditing, testing services, and standards. Established as an independent third-party certification firm in 1984, our goal is to recognize the highest levels of performance in environmental protection and social responsibility in the private and public sectors, and to stimulate continuous improvement in sustainable development. In 2012, Scientific Certification Systems, Inc. began doing business as SCS Global Services, communicating its global position with offices and representatives in over 20 countries. SCS is currently accredited to ISO 14065 for GHG Validation and Verification by ANAB and offers carbon offset validation and verification under the Verified Carbon Standard (VCS) and the American Carbon Registry (ACR). SCS also offers carbon offset verification under the Climate Action Reserve (CAR) and the Climate, Community and Biodiversity (CCB) standards.

SCS was commissioned by the project proponent to undertake the annual project verification of the Bi-County Landfill Gas Destruction Project. The project consists of the collection of landfill gas (LFG) from Bi-County Landfill in Woodlawn Tennessee, and subsequent destruction in either of two electric generator engine sets or an open flare. This report covers the verification period of 01 January 2019 to 31 December 2019 as a project deliverable into the Reserve.

Verification Scope Details

Verification Objectives

The objective of the verification is to:

- Evaluate conformance with the Landfill project as defined in the criteria stated below.
- Determine with a reasonable level of assurance whether the Project has resulted in the GHG emissions reductions and/or removals as stated in the project documents.
- Evaluate the project planning information and documentation including the determination of project eligibility, project design, baseline and project emissions determination, management systems supporting the project, and methodologies employed for the calculation of GHG emission reductions.

Verification Criteria

SCS conducted the verification assessment of the project and project documentation against the following criteria:

- CAR Landfill Project Protocol, Version 3.0 (December 2, 2009)
- Errata and Clarification LPP, Version 3.0 (June 18, 2015)

- Reserve Offset Program Manual (November 12, 2019)

As an ANAB -accredited verification body, SCS conducted the verification to the requirements of:

- CAR Verification Program Manual (February 8, 2017)
- ISO 14064-3: 2006, Greenhouse Gases – Part 3: Specification with guidance for the validation and verification of GHG assertions

Level of Assurance

SCS performed the core verification activities to a reasonable level of assurance as required by CAR.

Treatment of Materiality

In consideration of the required level of assurance, the needs of the intended user, and the requirements of the CAR Program, SCS applied a materiality threshold of **3%** because the total annual emissions reductions are above 25,000 tCO₂e, but below 100,000 tCO₂e. The data reviewed was considered to meet the principles of accuracy, completeness, transparency, and is free of material error or omission.

Verification Scope Details

Verification Summary

The verification process consisted of the following:

1. Project listed with the Climate Action Reserve:

The Bi-County Landfill Gas Destruction Project is listed on the Climate Action Reserve website; the project proponent selected SCS as their verification body.

2. Conflict of Interest Review.

A Notification of Verification Activities/Conflict of Interest (NOVA/COI) form was submitted to the Reserve. The COI assessment was conducted to identify any potential conflicts interests with the verification/project. No conflicts were identified and a determination of low potential for conflict of interest was received from the Reserve on 24 March 2020 prior to the commencement of verification activities.

3. Introductory Meeting:

A kick-off meeting was conducted between the verification team and the Project Proponent on 3 April 2020. The purpose of the kick-off meeting was to review the timeline of audit; confirm verification criteria; determine any changes in the site, sources, GHG management systems or personnel; and to begin gathering information.

4. Desk Review

SCS received and reviewed the Monitoring Manual, CAR submittals, and supporting documentation to assess initial conformance with the data requirements of the CAR Landfill Project Protocol (LPP). A risk assessment was conducted to identify key factors that impact the reported emission reductions and removals. A Verification Plan was created to focus on the critical elements presenting potential risk for errors with the project.

5. Site Visit

Due to the restrictions of the COVID-19 pandemic, there was no site visit this year as is usually required of the version 3.0 Landfill Protocol. Per an e-mail from the Reserve dated April 13, 2020, the Reserve will allow for a desktop verification of this project, but the verification “will need to follow the requirements of Section 7.3.3 of the Landfill Protocol Version 5.0. All other requirements for the project verification may follow Version 3.0 of the Landfill Protocol.”

The requirements of Section 7.3.3 are as follows:

- 1. A new site visit occurred in conjunction with the verification of the previous reporting period;*
- 2. The current verification is being conducted by the same verification body that conducted the site visit for the previous verification; and*
- 3. There have been no significant changes in data management systems, equipment, or personnel since the previous site visit.*

SCS confirms all the above, namely:

- 1) A site visit occurred on 9 May 2019 conducted by SCS Global Services as part of the verification of the 2018 verification period;
- 2) The verification for 2019 (the current verification period) is being conducted by SCS Global Services as was the previous verification for the 2018 reporting period and
- 3) Based on confirmations with the project developer regarding no significant changes in data management systems, equipment or personnel; a review of 2019 project documents and a re-calculation check of emission reductions; SCS feels that the requirements of #3 have been followed.

With the above said, SCS still was able to verify the project equipment, location, and eligibility; to review and evaluate the project GHG management systems, data collection / handling, verify the emission reduction calculations and procedures in place; and to finalize the risk assessment and sampling plan.

6. Quantitative Review

An assessment of the emission reduction calculation inputs and procedures was performed to review the quantitative analyses undertaken by the Project Proponent to convert the raw inventory data into emission reduction estimates.

6 Findings

Throughout the verification, there is an iterative exchange between SCS and the Project Proponent to gather additional information for review and examination. This exchange includes the issuance of Findings — New Information Requests (NIR), Non-Conformity Reports (NCR), and Observations (OBS) by SCS. The Project Proponent must respond to NIRs and NCRs in order for SCS to render a verification opinion. At this time all Findings have been appropriately addressed by the Project Proponent and subsequently closed by SCS.

7. Draft Report and Statement

This step in the verification process includes a final review of the submitted data, completion of the Verification Report, and drafting of the Verification Statement. A draft Verification Report and Statement are completed based on the results of the verification assessment.

8. Technical Review

The draft report was presented to an SCS lead verifier, independent of the verification, who determined the Verification Statement to be justified given the evidence presented. The Verification Report and Verification Statement were then presented to the Project Proponent for review and comment.

9. Final Report and Statement

Once the Project Proponent approved these documents, SCS uploaded them to the Reserve website for administrative review by CAR. Given a positive review, CAR will register the emissions reductions for the landfill gas project and issue carbon tonnes for a reporting period of 01 January 2019 to 31 December 2019.

10. Exit meeting with client:

The exit meeting entails a review of the verification process, summary of the verification findings, and to initiate scheduling for the next verification period.

Verification Team

The SCS verification team consisted of the following individuals:

Lead Verifier: Mark Lutz

Technical Reviewer: Tina Sentner

Verification Findings

SCS verified the Bi-County Landfill Gas Destruction Project against the requirements of the Landfill Project Protocol. The following sections detail the most essential aspects of the verification of this Project.

Project Description

The Bi-County Waste Landfill (or “Bi-County Landfill” for short) is a municipal solid waste facility operated by Bi-County Gas Producers, LLC (the project proponent). Landfill gas is either routed to an open flare or to engine-generator sets. The two landfill gas engines-generator sets are a Caterpillar 3520 C+ and a Caterpillar 3516 A+ with a nameplate capacity of approximately 3.0 MWh.

The Bi-County Landfill is equipped with a condensate knockout pot, instrumentation and controls including a thermocouple at the open flare tip, Endress & Hauser Deltabar pressure differential measurement devices, a data logger, a Siemens Ultramat 23 methane analyzer and a back-up portable hand-held gas analyzer.

This landfill is not considered to be a bioreactor according to the U.S. EPA. is not fully capped, and only recirculates leachate as needed.

Project Eligibility

The Climate Action Reserve Landfill Project Protocol specifies eligibility rules that the Project must meet in order to register reductions with the Reserve. Below is a summary of the eligibility requirements and the Project’s compliance to each requirement.

Location

The project is a U.S. based landfill located near the town of Woodlawn, Tennessee, USA and therefore meets this eligibility requirement. SCS confirmed the location through a site visit on 9 May 2019.

Project Start Date

The start date for this landfill was documented as 07 October 2010, the day the open flare became operational. The start date was previously verified in the first reporting period and re-reviewed during the site visit by SCS on 9 May 2019. Bi-County Landfill Gas Destruction Project personnel provided documents to show evidence of construction of the landfill gas project: 1) Project design drawings, 2) Construction reports for the installation of the gas

collection and conveyance system, and 3) A start-up service order for the installation of the flare skid.

In late 2011 and again in late 2013 engine-generator sets were added to the site to generate electricity from the landfill gas collected at the landfill. The flare and engine start date documentation (letters of source start up and permit applications to the Tennessee Department of Environment and Conservation) were noted.

SCS concluded that these documents supported the project start date listed on the Reserve Website and the Project therefore meets the start date eligibility criteria of the Climate Action Reserve Landfill Project Protocol.

Crediting Period

The crediting period for landfill projects is 10 years from the Project start date. The crediting period for Bi-County Landfill Gas Destruction Project extends to 06 October 2020. SCS has concluded that the reporting period verified in this report is within this first crediting period of the Project.

Additionality

Project Proponents must indicate that reductions are above and beyond business as usual. In order to do so, the Project must pass a Performance Standard test and the Legal Requirement test.

Performance Standard

For the Performance Standard test, a project developer may meet eligibility under three possible performance threshold scenarios. The option 1 scenario, described below applies to this project:

“Installation of a landfill gas collection system and a new qualifying destruction device at an eligible landfill where landfill gas has never been collected and destroyed prior to the project start date.”

SCS verified that there had not been any landfill gas collected or destroyed prior to the project start date. During the previous site visit on 9 May 2019, interviews with the site operator and reviews of design drawings of the site prior to the Project confirmed there were no solar flares devices connected to any leachate riser system or previous qualifying destruction devices installed onsite

The protocol requires a project developer who has passed the performance standard test remain eligible to register reductions for the lifetime of the project crediting period, as long as the project is not otherwise determined to be ineligible due to regulatory changes that impact the project’s voluntary implementation.

Legal Requirements

For the Legal Requirements Test, Project Proponents must ensure that emission reductions achieved by the Project would not have occurred in the baseline case due to federal, state, or local regulations.

The verification team conducted a regulatory review of the project and the landfill by a review of the Solid Waste Permit, Air Permit, Storm water permit, Title V Permit exemption and the engine sets and flare permits from the Tennessee Department of Environmental Control (TDEC). The Project Proponent has also developed a procedure in the monitoring plan to ascertain and demonstrate that the project passes the legal requirements test at all times.

There was no evidence observed of any laws, statutes, regulations, court orders, environmental mitigation agreements, permitting conditions, or other legally binding mandates requiring the destruction of landfill gas at the landfill.

The Bi-County Landfill remained a voluntary project for the 2019 reporting period. The landfill design mass of 2.45 MT does not exceed 2.5 million MT of Municipal Solid Waste and was therefore, not subject to NSPS regulation requiring the facility to conduct Non-Methane Organic Compound (NMOC) emission rate testing.

However, the most recent Tier II testing was performed for Bi-County Landfill on 1 December, 2017 with a calculated 2018 result of 74.06 Mg NMOC/yr and a 70.41 Mg NMOC/yr for 2019, which was over the threshold (applicable for Bi-County Landfill) of 34 Mg/yr,

As stated in, 40 CFR, Part 60 of the New Source Performance Standards, Subpart XXX, if the NMOC emission rate is equal to or greater than 34 Mg/yr, the owner/operator has 30 months from the first calculated exceedance to design and install and operate an active landfill gas collection and control system. For Bi-County this calculates to April 30, 2020 as the last date the project is able to report to the Reserve before the May 1 2020 requirement to have a gas destruction project in place.

Lastly, SCS reviewed the Attestation of Voluntary Implementation, signed on 18 May 2020 by an eligible signatory to attest for the Project. The Project Proponent has affirmed that the Project was established and implemented voluntarily and continues to operate as such. Based on this evidence, SCS concludes the Project passes the legal requirements test.

Regulatory Compliance

Through document review activities and communications with the Project Proponent, the verification team noted that there were no NOV's during the 2019 reporting period. There

were, however, some open NOV's in 2017 and 2018 (two gas collection issues, but primarily surface leachate issues.) A remediation plan was submitted to TDEC and documentation shows that five of the eight corrective measures were closed with the remaining three "anticipated to be closed before the October 2019 deadline." As of December 2019, documentation shows that TDEC was in the process of closing out the remaining open NOV's.

As a result of this review, SCS has determined that the project NOV's were related to "acts of nature" or administrative in nature and that the project was not in a state of recurrent non-compliance.

The verification team reviewed the EPA Enforcement & Compliance History Online database (ECHO), the solid waste inspection reports and the annual Title V Compliance Certification Forms to confirm that there were no outstanding regulatory penalties, no deviations or notices of non-compliance against the Landfill during the 2019 reporting period.

In addition, the verification team reviewed the Attestation of Regulatory Compliance submitted by the Project Proponent 18 May 2020 affirming the Project's compliance status throughout the project reporting period.

We also confirmed that the Project's monitoring plan contained procedures for maintaining and monitoring regulatory compliance and that the procedures were being properly followed. The results of the regulatory review indicated that the Project was in compliance with Federal, state and local regulations. Based on this review, SCS concludes the Project met the regulatory compliance requirements of the Landfill Project Protocol.

Ownership

The Bi-County Solid Waste Authority owns the Bi-County Landfill. Ownership was confirmed through review of organizational documents and various regulatory permits issued from TDEC such as the solid waste and air emission exemption permits. Ownership was confirmed through review of various regulatory permits issued by TDEC and invoices for the purchase of the GCCS, flare, and engine facility.

The verification team also reviewed the Environmental Services Agreement between the Bi-County Solid Waste Authority and Bi-County Gas Producers LLC, dated April 27, 2010, which transfers all rights to landfill gas reductions, energy production and greenhouse gas reductions to Bi-County Gas Producers LLC. SCS confirmed the Project Proponent (Bi-County Gas Producers LLC) retains full, legal, and beneficial title to the carbon offset credits being issued as a result of the collection and combustion of methane at the landfill facility with both entities.

Lastly, SCS reviewed the Attestation of Title signed by an eligible signatory of the Project Proponent dated 18 May 2020 concerning ownership of landfill gas emission reduction credits for the reporting period. This document asserts that the project applicant has legal rights to any emission reduction credits to be issued by the Reserve. From this evidence, SCS has concluded that the project developer, Bi-County Gas Producers LLC, is entitled to receive the emission reduction credits that may be issued by the Reserve for methane destroyed during this reporting period.

The GHG Assessment Boundary

The Project includes all emission sources from the operation of the landfill gas collection system to the ultimate destruction of the landfill gas. The sources of GHG emissions reviewed include:

The GHG sources, sinks, and reservoirs associated with the baseline scenario are:

- CH₄ vented to the atmosphere.
- CO₂ from the oxidation of CH₄ by soil bacteria. As the landfill is not covered with a synthetic liner, the Landfill Protocol assumption that 10 percent of the methane produced would be naturally oxidized by soil bacteria has been applied.

The GHG sources, sinks, and reservoirs associated with the project are:

- Un-combusted CH₄ from Landfill gas in the two internal combustion engines and an open flare.
- CO₂ from the combustion of fossil fuels used during operation and maintenance activities for the project activity.
- CO₂ resulting from the consumption of imported electricity.

The gases reviewed include CO₂ and CH₄. All gases are converted to CO₂ equivalents.

Review of Project GHG Management Systems

An off-site verification of the Project's greenhouse gas management systems was accomplished by way of a review of the current monitoring plan, interviews/e-mails with the project proponent and a review of other project-related documents. This review included a detailed look at the project's data handling and processing procedures, recordkeeping and data storage, and the quality control procedures. The following is the result of this review:

Project Monitoring

The project's flare skid, engine-generator set and related monitoring equipment were reviewed for conformity to the Landfill Project Protocol requirements during the on-site visit of 09 May 2019 and re-confirmed off-site with the project proponent during the kick off call.

The primary data gathered for the Project is landfill gas flow, pressure, temperature, and methane content of the landfill gas.

The project used two Endress & Hauser Flow Meters for tracking flows for this project - one before the flare and one at the engine room. Both continuously monitor flow. The flow measurement device at the flare was calibrated to measure flow at actual conditions of 59 deg F and 1 atmosphere. The project has appropriately adjusted flow to 60 degrees F and 1 ATM in the emission reduction calculations. The flow meter to the engines was calibrated to measure at 60 degrees F and 1 ATM and no further adjustments needed to be made. The positions of the flow meters were adequate to ensure laminar flow for both the engine and the flare.

The flow meters were inspected and cleaned on a quarterly basis by Bi-County Gas Producers personnel and calibration checked on-site semiannually by a qualified third party on 13 June 2019 and 4 December 2019. Field inspection and cleanings occurred on 30 January 2019; 12 June 2019, 17 September 2019, and 16 December 2019 showing the activities performed and the as left/as found condition of the instrument was documented.

The bi-annual calibrations conducted showed that all flow meters were within required tolerances and exceeded manufacturer's minimum calibration requirements of "one to four years depending on use." All calibration activities were performed with the "as found / as left" documented per protocol requirements. Based on this review, the project team concluded that the project reported accurate flow data.

Flare temperature was continuously monitored via a thermocouple mounted after the blower and within the shroud of the flare.

The project used an in-line Siemens Ultramat 23 Fixed Non- Dispersion Infrared (NDIR) Gas Analyzer that continuously monitors methane content, records data at least every fifteen minutes and which has the capability of being remotely monitored.

The manufacturers of the Siemens Ultramat 23 have no specific requirements for calibration intervals. The project developer developed their own schedule and we verified that this unit was calibrated on a quarterly basis (using a gas of known specifications) by a qualified third party. The calibrations occurred on 30 January 2019, 12 June 2019, 17 September 2019, and 16 December 2019. The calibrations conducted showed that the gas analyzer was within required tolerances and exceeded manufacturer's minimum calibration requirements. Field inspection and cleanings occurred on the same dates as the calibrations showing the activities performed and the as left/as found condition of the instrument was documented.

All calibration activities were performed with the "as found / as left" documented per protocol requirements. Based on this review, the project team concluded that the project reported accurate flow data.

A handheld Landtec GEM2000 methane analyzer was also on-hand at the site as a back-up, however this analyzer was not utilized in collecting emissions reductions raw data for 2019.

Raw data from the flow meter instruments, and gas analyzer were verified as being continuously collected every five minutes by a Eurotherm Chessle 61000A chart recorder. Operational data from the flare and engines were compiled and recorded every five minutes for both the engines and for the flare. Operational data included flows to both the flare and engines, methane %, flare temperatures and data on engine up and down times (see “variances” later in this report.) Monthly reports were generated by exporting the data and converting the data into Excel files. The raw data is stored by the Project Proponent on site for a period of 10 years after the information is generated or 7 years after the last verification.

The contents of the Monitoring Manual were thoroughly reviewed and observed to meet the requirements of the Landfill Project Protocol, version 3.0 and are consistent with practices observed on site. Records are kept for a minimum of ten years when the information is first generated or seven years after the last verification, per the project developer’s Monitoring Manual.

Based on this review, SCS confirmed the Project was implemented in accordance with the Project Monitoring Plan.

Quantitative Review of Carbon Reductions and Removals

SCS devoted a portion of the verification assessment to the review of the manner and propriety by which the Project Proponent quantified their net GHG reductions and removals. This assessment included a review of the baseline determination, project assumptions, raw data inputs, and accuracy of calculations.

The formulas and raw data inputs used to determine emission reduction calculations as described in the Monitoring Manual and the calculation spreadsheets were first reviewed for compliance with the Landfill Protocol. The main parameters of Equation 5.1 were verified as follows:

Total Annual Methane Emissions Destroyed By The Project Landfill Gas Collection And Destruction System (CH_4 DestPR)

The amount of methane destroyed is calculated from the continuously metered landfill gas data. For the verification period of 01 January 2019 to 31 December 2019, data was collected continuously, and electronically aggregated on intervals of fifteen seconds for the engine and flare. The main monitored parameters needed to calculate the amount of methane destroyed are:

$LFG_{L,t}$ = total quantity of landfill gas fed to the destruction devices and

$PR_{CH_4\ i,t}$ = the average methane fraction of the landfill gas in time interval t as measured

Flow calculations are deducted for the flare when there are any instances of the flare temperature being below 500 degrees F. For the engines, there is no flow when the engines are not running, i.e. no evidence of engine output. Flow is then calculated by summing the flow for each interval period. The incremental methane destroyed flow is calculated based on methane concentration by the incremental total of landfill gas with temperature and pressure taken into consideration. Total daily destroyed methane is carried forward into further calculations to determine emission reductions for the project.

Adjustment For Landfill Gas Flow Metering Equipment For Temperature And Pressure

The project flare flow meter records the temperature and pressure of the landfill gas to 59 degrees F and one atmosphere. In the calculations provided by the project developer, the data was then adjusted to reflect 60 degrees F and one atmosphere to conform to protocol requirements. For the flow going to the engine-generator sets, the flow meter is already adjusted to 60 degrees F and one atmosphere and no adjustment was needed

Default Methane Destruction Efficiency For Devices (Dei)

The stack test value applied was 0.997 for each of the two engines (derived from a stack test done in 2015) and a default value of 0.96 was applied for the open flare.

Factor For The Oxidation Of Methane By Soil Bacteria (OX)

The Project does not incorporate a synthetic liner in its cover system; therefore a 10% methane soil oxidation factor was applied to the baseline scenario.

Discount Factor To Account For Uncertainties Associated With The Project Monitoring Equipment (DF)

As per the methodology, DF equals to zero if using continuous methane monitor with no missing data. It was verified that measurement readings are continuous and therefore no discount is necessary (see section above: Review of Project GHG Management Systems).

Adjustment To Account For Pre-Project LFG Destruction Device (PREdiscount)

The Project did not incorporate Pre-Project destruction devices.

Total Annual Indirect Carbon Dioxide Emissions From The Consumption Of Electricity From The Grid (ELCO₂) and Total Annual Carbon Dioxide Emissions From The Destruction Of Fossil Fuel (FFCO₂)

CO₂ emissions result from consumption of electricity to power project equipment and activity data for this source was tracked by reviewing utility invoices from the power supplier. Project emissions were also noted from propane consumption and this activity data is taken from

purchase invoices. The emission factors for electricity and propane were verified and no material errors were found.

Project emissions consisting of indirect emissions from electricity and fossil fuel were subtracted from the total amount of methane destroyed. The values are presented in the final calculation spreadsheets for the verification period.

Missing Data Procedures

There were no Missing Data procedures applied to the data in this report period.

Zero Credit Periods

There were no zero credit periods for the Project applicable for this reporting period.

Variances

For this reporting period (as in the previous reporting period in 2018), the project developer requested a variance based on section 6.1 of the Landfill Project Protocol, v3.0 - specifically the requirement that “operational activity of the destruction devices shall be monitored and documented at least hourly to ensure actual methane destruction.”

The proposal was that the project should be allowed to have the engine operability be confirmed by the confirmation that the shut off valve, controlled by a programmable logic controller (PLC) system, does not allow gas flow to the engine when it is not operational.

On 18 May 2020, the Climate Action Reserve granted a variance based on the following criteria:

- 1) *“The verifier confirms the existence and recordings of a site wide PLC (programmable logic controller) system, including records stating whether the flare or engines were operating.”*

The audit team confirmed through 2019 records the existence of a site-wide PLC (programmable logic controller) system that showed detailed 5-minute operational data for the whole project. This included records stating whether the flare or engines were operating at any given time through 2019.

- 2) *“The verifier confirms that a sensor automatically closes the feed to the feed valve when there is no operation from the engine, so that no gas may flow through the gas train to the engine affected.”*

The audit team confirmed via the previous site visit and through a review of the specific CAT engines manual that shows how sensors and valves work to ensure that gas cannot flow through the engine when the engines are not combusting gas. We also received confirmation of this with the CEO of Cube Energy District that these engines both have a fuel supply valve that, upon manual or automatic engine shutdown, there is a sensor where the engine automatically shuts the fuel supply to the engine.

3) *“The verifier confirms the system complies with the EPA Air Permit for the site”*

The audit team had previously confirmed earlier in this verification the existence of a current Title V Permit (the “EPA Air Permit”.) The primary requirement to verify annual compliance is the annual stack tests of which the most recent tests were conducted and passed on April 17, 2020.

Verification Results

The verification of Bi-County Landfill Gas Destruction Project focused on the accurate collection of data and quantification of emission reductions as implemented by the Project Proponent in accordance to with the Verification criteria. A sample set of raw flow data (consisting of landfill gas flow and temperature) and methane concentration was randomly selected and reviewed in order to identify material misstatements due to transcription mistakes, mathematical errors or malfunction of instruments. The emission reduction calculations were recalculated by the verification team and found to be conformance with the project monitoring plan.

Based upon the verification process and the evidence collected, SCS concludes that the GHG assertion is a fair representation of the Project emission reductions resulting from the capture and destruction of landfill gas during the reporting period 01 January 2019 to 31 December 2019 and can be considered:

- In conformance with the Landfill Project Protocol, Version 3.0 (December 2, 2009)
- Without material discrepancy, and
- Verified to a reasonable level of assurance

The following provides a summary of the verification results (rounded for simplicity):

Emissions Verified	Baseline Emissions CO ₂ e (metric tons)	Project Emissions CO ₂ e (metric tons)	Pre- Project Emissions	Emission Reductions CO ₂ e (metric tons)
2019	84,072.6	527.5	0	83,545

Final value rounded for simplicity

Throughout the verification process, SCS made several supplemental documentation requests in the form of Findings – NIRs, NCRs, and OBSs. These requests provided clarification regarding the Project. The Findings from the verification of the Project are compiled in a separate “List of Findings” document and are available under separate cover. The List of Findings is only shared between the Project Proponent and verifier and is not publicly available.

Recommendation

The Lead Verifier recommends that SCS Global Services issue a positive verification opinion for the following:

Project Developer Name & Address	Bi-County Gas Producers, LLC 3212 Dover Rd, Woodlawn, Tennessee 37191
Scope of Verification	Emission reductions arising from the capture and destruction of Landfill Gas Methane from the Bi-County Landfill Gas Destruction Project
Reporting Period	01 January 2019 to 31 December 2019
Total GHG Emission Reductions Verified	Vintage 2019: 83,545 metric tonnes CO ₂ e
GHG Protocol(s) Used for Verification	■ CAR Landfill Project Protocol, Version 3.0 (December 2, 2009) ■ Errata and Clarification LPP, Version 3.0 (June 16, 2015) ■ CAR Verification Program Manual (February 8, 2017) ■ Reserve_Offset_Program_Manual_November_2019 ■ ISO 14064-3:2006, Greenhouse Gases – Part 3: Specification with guidance for the validation and verification of GHG assertions
Lead Verifier's Approval	 Mark Lutz, Lead Verifier 11 June 2020
Technical Reviewer's Approval	 Tina Sentner, Internal Reviewer 11 June 2020

<i>Date of Verification</i>	The Verification Statement is to be dated when the technical reviewer accepts the recommendation to issue the statement.
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Appendix A: SCS Certification Mark

Congratulations on receiving a positive verification for Bi-County Landfill Gas Destruction Project. Your project is now eligible to use the SCS Kingfisher Certification Mark B for Carbon Offset Project Verification, as represented on the cover page of this verification report. The SCS Kingfisher Certification Mark increases the recognition of your achievements with your verification carbon offset project.

Please refer to the *SCS Kingfisher Certification Mark Labeling and Language Guide: Mark B* provided to you by the GHG Verification Program staff for more information about your Mark and usage. Should you have any additional questions regarding your Mark, use, messaging, or other marketing opportunities, please contact the GHG Verification Team or SCS Marketing Staff at NRmarcom@scsglobalservices.com.