

VERIFICATION REPORT



Document Prepared By Mark Lutz

Contact Information: 209-499-7268

Project Title	Henrico County Landfill Gas Combustion Project
Version	3.0
Report ID	VCS_ Henrico _ County_ Verification Report_Ver 3 12-20-2012

Report Title	Verification Report for the Henrico County Landfill Gas Combustion Project
Client	Blue Source LLC.
Pages	21
Date of Issue	12-December-2012
Prepared By	SCS Global Services
Contact	2000 Powell Street, Suite 600, Emeryville, CA 94608, USA http://www.SCSglobalservices.com Email: cpollet-young@scsglobalservices.com Telephone: +1 (510) 452-8000
Approved By	Christie Pollet-Young
Work Carried Out By	Lead auditor: Mark Lutz Technical reviewer: Tina Sentner

Summary:

SCS Global Services conducted a verification of the Blue Source Henrico County Landfill Gas Combustion Project. In this project, methane gas was collected from active and inactive portions of the Springfield Road Landfill located in Henrico County, Virginia. Landfill gas was destroyed in one of two destruction devices: 1) Landfill gas was used to generate electricity from a 4 MW power generating facility constructed by Ingenco and 2) Landfill gas not consumed by the Ingenco power generating facility was burned in an open flare. These activities resulted in a net reduction of CO₂-equivalent emissions.

Blue Source LLC engaged SCS Global Services to verify its emission reductions from June 1, 2010 to September 30, 2012. SCS Global Services verified the asserted emission reductions against criteria stated in the Verified Carbon Standard (VCS) Standard dated October 4, 2012, v3.3, and the Approved consolidated baseline methodology ACM0001: "Consolidated baseline and monitoring methodology for landfill gas project activities": Version 10.

SCS Global Services conducted an offsite document review and an on-site verification audit in Glen Allen, Henrico County, VA on October 9, 2012. The objective of the engagement with Blue Source was to determine, with reasonable assurance, that the calculated emission reductions for this project were, in all material respects, fairly stated. The SCS Global Services verification team conducted its verification in accordance with ISO 14064, Part 3, *Greenhouse gases – Specification with guidance for the validation and verification of greenhouse gas assertions* and with the VCS "Validation and Verification Manual", October 4, 2012, v3.0.

During the verification process, SCS Global Services issued several clarification and corrective action requests – all of which were addressed sufficiently by the project participants. On the basis of work conducted, SCS Global Services was able to conclude with reasonable assurance that Blue Source asserted vintage 2010, 2011 and vintage 2012 methane emission reductions were fairly stated. Additional details concerning this conclusion are provided in Section V of this report.

Table of Contents

1	Introduction	4
1.1	Objective	4
1.2	Scope and Criteria	4
1.3	Summary Description of the Project	5
2	Validation Process, Findings and Conclusion	6
2.1	Validation Process:	6
2.2	Validation Findings:	6
2.2.1	Gap Validation	6
2.2.2	Methodology Deviations	6
2.3	Validation Conclusion	6
3	Verification Process	6
3.1	Method and Criteria	6
3.2	Document Review	8
3.3	Interviews	8
3.4	Site Inspections	9
3.5	Resolution of Any Material Discrepancy	10
4	Verification Findings	13
4.1	Project Implementation Status	13
4.2	Accuracy of GHG Emission Reduction or Removal Calculations	15
4.3	Quality of Evidence to Determine GHG Emission Reductions or Removals	18
4.4	Management and Operational System	18
5	Verification conclusion	19
	Verification Summary:	20

1 INTRODUCTION

1.1 Objective

The objective of the verification audit activity was to conduct an independent assessment of the Henrico County Landfill Gas Combustion Project (“the project”) to determine with reasonable assurance whether Blue Source LLC (Blue Source) had quantified, monitored, and fairly reported to the Verified Carbon Standard its landfill gas emission reductions from the project in accordance with the verification criteria, as set out in the guidance documents listed in Section 1.2 of this report.

1.2 Scope and Criteria

The scope of the engagement included quantification, monitoring and reporting of greenhouse gas project emissions reductions associated with the voluntary destruction of landfill gas from an expanded landfill gas collection system at the Springfield Road Landfill in Henrico County, Virginia. The Project consists of two stages. Stage 1 is the expansion of the pre-existing well-field and replacement of a small candlestick flare with a larger capacity flare station. Stage 2 is the implementation of a beneficial use project where the landfill gas (LFG) is destroyed in an on-site power generation facility and the resulting electricity is exported to the grid. The project boundary is defined as the landfill, which is the site where landfill gas is collected via separate header and piping system from a pre-existing landfill gas conveyance and collection system, an expanded collection system built in 2005, (expanded again in 2006 and yet again in 2010), the flare station and the Ingenco 4 MW power generating facility located on the landfill property.

The project developers implemented its methane emission reduction project in accordance with the requirements of the CDM methodology ACM0001– *Consolidated baseline and monitoring methodology for landfill gas project activities*, Version 10 and the Verified Carbon Standard Version 2007.1.

SCS Global Services (SCS) conducted its verification of the reported emission reductions in accordance with the Verified Carbon Standard Version 3.3 (4 October, 2012), the Verified Carbon Standard Program Guide Version 3.4 (4 October, 2012), and ISO 14064:2006 Part 3, Greenhouse gases – *Specification with guidance for the validation and verification of greenhouse gas assertions* and the VCS “Validation and Verification Manual”, October 4, 2012, v3.0.

1.3 Level of assurance

The Level of assurance in accordance with Section 5.3.1 of the VCS Standard, is reasonable. Emission reduction reports were considered fairly stated if they varied by no more than 5% from a complete statement of the project’s emission reductions.

1.4 Summary Description of the Project

The Project captures and destroys LFG methane from the Springfield Road Landfill located at 10600 Fords Country Lane, Glenn Allen, Henrico County, VA (latitude/ longitude: 37°40' 45" N / 77° 33' 58" W)

The Project consists of two stages. Stage 1 of the Project was the installation of an active gas collection system. During this stage, the gas captured from this system is flared, thereby converting methane to biogenic CO₂. As part of this project phase, in December 2004, Henrico County decommissioned the pre-existing flare and in June 2005, a larger flare station was installed. An additional 87 wells were installed during this time period. The wellfield was further expanded in 2006 with the addition of 5 new wells. In the fall of 2010, the collection system was expanded again with 18 new wells, bringing the total number of eligible wells to 110.

Stage 2 of the Project involved the implementation of a beneficial use project. The captured biogas is transported to an electrical power generating facility ("Ingenco") that uses modified diesel engines to run generators. This is located on the landfill property. This stage of the project became operational in September 2010 and most of the gas collected from the landfill is destroyed by Ingenco for electricity generation.

At the time of this verification, both Stage 1 and Stage 2 were fully implemented.

2 VALIDATION PROCESS, FINDINGS AND CONCLUSION

2.1 VALIDATION PROCESS:

Note: this Validation Process section is intentionally left blank. The Project Description Document, dated 19 November 2007, had previously been validated and the validation includes information for the following:

2.2 VALIDATION FINDINGS:

2.2.1 GAP VALIDATION

Not applicable. The scope of this verification does not include a validation.

2.2.2 METHODOLOGY DEVIATIONS

Not applicable. The scope of this verification does not include a validation.

2.2.3 PROJECT DESCRIPTION DEVIATIONS

Not applicable. The scope of this verification does not include a validation.

2.2.4 NEW PROJECT ACTIVITY INSTANCES

Not applicable. The scope of this verification does not include a validation.

2.3 VALIDATION CONCLUSION

Not applicable. The scope of this verification does not include a validation.

3 VERIFICATION PROCESS

3.1 Method and Criteria

The verification was performed through a combination of document review, interviews with relevant personnel, on-site inspections and independent checks of methodologies and calculations, as discussed in Sections 3.2 through 3.4 of this report (Document Review, Interviews and Site Inspections.) At all times, the project was assessed for conformance to the criteria described in Section 1.2 of this report. As discussed in Section 2.6, findings were issued to ensure that the project was in full conformance to all requirements.

The methodology mentioned above was carried out in the following steps:

- An internal Conflict of Interest review- Audit Team selection;
- Kickoff meeting with Blue Source LLC;
- Document Review of PDD to the current Project Monitoring Plan for the reporting period under review, initial review of data and other documents;
- Development of the Verification and Sampling Plan;

- Site Inspection;
- Review and evaluation of raw data and calculations for the period under review;
- Follow-up: Closure of clarification requests for supplemental data and corrective actions as needed;
- Final statement and Verification Report completion

Conflict of Interest Review

Conflict of Interest inquiries were completed for SCS and for the verification team and a finding of low COI risk was confirmed by the SCS internal COI process. The COI assessment was conducted to identify any potential conflict of interests with the verification/project.

Appointment of Verification Team

This verification was performed by Mark Lutz, Lead Verifier, and reviewed by Tina Sentner, Internal Reviewer. Mark Lutz and Tina Sentner are lead verifiers approved by SCS Global Services to conduct landfill gas project verifications.

Project Kick off Meeting

A kick off meeting was conducted between the verification team and Blue Source. The purpose of the kick off meeting was to review the timeline of verification; confirm verification criteria; determine any changes in the site, sources, GHG management systems or personnel, and to begin gathering information.

Desk Review

SCS Global Services reviewed the Project Description Document, Project Monitoring Report, and supporting documentation. A detailed discussion is provided below.

Site Visit

Following the desk review, the verifier conducted an on-site audit of the project area on October 9, 2012. The purpose of the site visit was to verify the project equipment; to review and evaluate the project GHG management systems, data collection and handling; and to finalize the risk assessment and sampling plan.

Quantitative Review

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

Findings

Throughout the verification, there was an iterative exchange between SCS Global Services and the Project Proponent to gather additional information for review and examination. This exchange included Findings—New Information Requests (NIR) and Non-Conformities (NCR) that were issued by SCS Global Services to the Project Proponent. For this project, 4 NIRs, and 6 NCRs were issued. The Project Proponent responded to all NIRs and NCs and subsequently all issues were closed by SCS Global Services. See section 3.5 below.

Final Report and Opinion

The last step in the verification process included a final review of the submitted data, completion of the Verification Report, and drafting of the Deed of Representation. The draft report is presented to an internal SCS Global Services Technical Reviewer who determines the Verification Opinion to be justified given the evidence presented. Once completed, the Verification Report and Deed of Representation are presented to the project proponent for approval and subsequent submittal to the VCS.

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.

3.2 Document Review

The Monitoring Report and supporting documentation were carefully reviewed for conformance to the verification criteria. Based on documents provided by Blue Source LLC., a document review began prior to the site visit. The Project Description Document was reviewed against the Project Monitoring Report for any variances. In addition, the CDM methodology ACM0001 (Version 10) was compared to the project monitoring plan for correct formula methodology along with referenced tool in this methodology: “Tool to determine project emissions from flaring gases containing methane” (version 1) and “Tool to calculate baseline, project and/or leakage emissions from electricity consumption” (version 1). Per the data described in the Project Monitoring Plan and the original Project Description Document, supplemental data was initially reviewed, including calibration data, calculation factors and aggregated data checks.

A risk assessment was conducted during this phase and was based on preliminary findings to assess the sources and magnitude of potential errors, omissions and misrepresentations for further verification activities. Risks assessed were 1) The inherent risk of a material discrepancy occurring; 2) The risk that the controls of the organization or GHG project will not prevent or detect a material discrepancy; and 3) The risk that the validation or verification will not detect any material discrepancy.

3.3 Interviews

There are four main parties associated with this project who were identified as potential interviewees:

- The County of Henrico : The owner and operator of Henrico County landfill, the project's flare station, and other gas extraction and collection equipment.
- Draper Aden Associates: The engineering entity contracted by Henrico County to manage the elements of this project at the landfill. Responsibilities include development of Phase 1 of this project development (original expansion of the pre-existing wellfield and installation of a larger flare); overseeing the installation of monitoring devices at the flare station; adding additional wells that would collect the gas to be fed to the flare station; overseeing the maintenance of the wellfield, flare station and monitoring devices; monitoring data from the data logger and sending to Blue Source LLC.
- Blue Source LLC: The entity that has been contracted by Ingenco to monetize the greenhouse gas emission reduction credits generated by this project. Responsibilities

include monitoring of operations in collection of data related to the project; preparing the documentation to determine emission reductions (monitoring plans; project design documents; engaging with the approved Verifier and marketing emission reductions.

- Ingenco Renewable Development LLC: The owner of the project credits and developer of the beneficial use project - electricity generation associated with this project. Responsibilities include the development of a beneficial use project (Phase 2 of this project development), destruction of gas collected from the landfill for electricity generation and monitoring and maintenance of the electricity generating plant:

On the site visit, the following were interviewed:

- Engineers from Draper Aden Associates: Provided information to questions that arose during the document review process; provided information associated with the daily maintenance of the project, including calibration and maintenance of monitoring equipment and well field balancing; provided background information associated with changes that occurred during the reporting period, provided site maps and documentation associated with the flare station and provided permit information.
- The Project Manager from Blue Source LLC associated with this project: Provided information to questions that arose during the document review process; provided in-depth information associated with the Monitoring Plan and Project Description Document, provided information related to the calculation of project reductions for this reporting period; was a point person for responding to needed clarifications and non-conformances.
- Two technicians from Ingenco Renewable Development LLC: Provided information related to the electricity generating plant.

3.4 Site Inspections

As a result of its planning process, on October 9, 2012, SCS Global Services conducted a site visit of the Springfield Road Landfill located in Henrico County, Virginia and the electrical generation facility located on the landfill. The nature of verification activities conducted included:

- Verification of the implementation of the landfill gas project to report emission reductions in accordance with the ACM 0001, Version 10, "Consolidated baseline and monitoring methodology for landfill gas project activities";
- Verification of evidence presented by the various project proponents to demonstrate their knowledge of and assertion of compliance with applicable air and water regulations;
- Verification of applicable methane and carbon dioxide emission sources within the project boundary and their quantification as defined by the ACM 0001, Version 10, "Consolidated baseline and monitoring methodology for landfill gas project activities";
- Verification of the Project's compliance with monitoring of key operational parameters of its landfill gas collection and destruction project as noted in the project description;
- Assessment of the capability of the Project's management system and procedures to produce accurate, reliable, and reproducible data and information;

- Determination of the Project's conformity in all material respects with the requirements of the ACM 0001, Version 10, "Consolidated baseline and monitoring methodology for landfill gas project activities";
- Visiting the selected work locations and interviewing personnel, observing operations, and reviewing relevant documents and records, and
- Reviewing the basis for and results achieved from the calculated methane emission reductions from its landfill gas collection and destruction project.

3.5 Resolution of Any Material Discrepancy

SCS Global Services issued requests for clarification and non conformities during the verification process. Blue Source responses were sufficient to resolve all clarification requests and non conformities. The findings with the responses provided are summarized in the tables below:

No.	Type	Issue	Reply by Responsible Party	Lead Assessor Comment	Acceptance
1	NIR	Need clarification on any NOV's that Henrico Landfill may have been issued during the reporting period being verified.	Blue Source followed up with County to provide evidence.	Verified e-mail from County ("RE: EMO - 12 1015 - Overly (Blue Source) - Henrico County Springfield Road Landfill - Latest Solid Waste Permit Amendment")- Jon Clary the Solid Waste Division Director stated in this email that "The County has not received any NOV's from DEQ." during the time periods verified.	Response accepted. Closed 11/9/2012
2	NCR	The PDD indicates that there is a 400 degree cutoff in calculations (i.e. no emissions counted under this threshold) vs the 350 degree actual cutoff that was used.	Blue Source changed calculations to reflect threshold temp from 350 to 400 F.	Verified the change in the spreadsheet formula from 350 degrees to 400 degrees. "Henrico_VER Calculation_12.11.2012.xls" is the most up to-date calculations with the change in temperature from 350-400 F included.	Response accepted. Closed 11/9/2012
3	NCR	There were no Project Emissions stated Could not independently verify propane and electrical usage. (Need invoices from County and Ingenco for both propane used at the flare and electricity usage (Both flare electrical	Blue Source supplied invoices and re-calculated Project Emissions.	Fossil Fuel Invoices: County & Ingenco- Electricity & Diesel- "Ingenco_Diesel Usage.pdf" & the County's propane and electricity invoices "Propane Bills.pdf". Also reviewed Ingenco's electricity invoices that were supplied. Emission reductions correctly re-calculated to include project emission offsets.	Response accepted. Closed 11/9/2012

		and Ingenco electrical)			
4	NCR	During the site visit, the serial # on the Ingenco Rosemont flowmeter did not match the serial # of the calibration certs that were checked.	During the site visit, the wrong flowmeter was identified to the verifier. A picture of the correct flowmeter was provided.	"HC_Ingenco Flowmeter SN_04.jpg" was provided to verify the correct flowmeter. Verified this flowmeter to the corresponding calibration record.	Response accepted. Closed 11/9/2012
5	NIR	Although the calibration certificate for the The Lantec Gas Analyzer calibration certification indicated that the analyzer was within 5% calibration limits, the Lantec calibration report indicated several fields that indicated "out of calibration." Need clarification on what this means... and whether the Gas Analyzer was within the 5% calibration limits when found.	Blue Source talked to Landtec about the Handheld Field Checks & Frequency of calibration for continuous gas analyzer.	1) Reviewed e-mail to Blue Source from Landtec: "RE: Landtec Gas Check Reports Question" 2) Reviewed answer from Blue Source: "RE- Progress with Henrico - need some more feedback (11/13/2012): The "out of calibration" fields. One field showed an O2 faulty sensor that had no impact on the methane readings; the other sensor showed underreporting from 0 to 4%. The GM05722 Lantec was calibrated a few days later. The data from June 1 to July 24 could have been underreported. Because it was underreporting for this time period, the emission reductions are a conservative estimate and no change was needed.	Response accepted. Closed 11/9/2012
6	NCR	VCS 3.0, v3.3 section 3.16.2: requirements call for "Procedures for managing data quality" in the Monitoring Report. Although there are some specific QA/QC procedures spelled out for many of the parameters, there is nothing in the report that addresses	Blue Source responded with an update to the Monitoring Report to include QA/QC procedures and conducted a QC check per their checklist.	Confirmed that "Henrico Count_Monitoring Report_June 2010- Sept 2012 version 2.0.doc" has been to include a reference to a QC checklist that is being used. In addition, verified that Blue Source conducted a QC check on the calculations after the site visit.	Response accepted. Closed 11/19/2012

		QA/QC in data collection and aggregation or checks on overall emission reduction calculations.			
7	NCR	Although deviations from the monitoring plan (ie, the procedures for monitoring and measurement) set out in the project description are permitted (provided the project remains in compliance with the applied methodology), the VCS standard requires that monitoring plan deviations shall be described and justified in the Monitoring Report. There were two deviations found (non-methodological) that were not listed in the Monitoring Plan: 1) The PDD says that verifications are done annually (verifications not done annually) and 2) The PDD says that the crediting period will be reassessed on an annual basis to ensure that the Project does not exceed the NSPS threshold for NMOC emissions. (Saw no evidence of annual evaluation.)	Blue Source responded with an update to the Monitoring Report to include deviations.	Confirmed that "Henrico Count_Monitoring Report_June 2010- Sept 2012 version 2.0.doc" has been updated to include the deviations noted.	Response accepted. Closed 11/9/2012

8	NCR	The VCS Standard states that a Monitoring Plan for the project include the roles and responsibilities. Saw very little in the Monitoring Plan that provides roles and responsibilities.	Blue Source will amend the Monitoring Report to better clarify roles and responsibilities of project proponents.	Confirmed that "Henrico Count_Monitoring Report_June 2010- Sept 2012 version 2.0.doc" has been updated to include a more robust role & responsibilities section.	Response accepted. Closed 11/9/2012
9	NIR	Need clarification on Henrico County Landfill's Waste Permitting to help verify continuing additionality.No Solid Wast Permit available at time of site visit.	Blue Source provided to Verifier a copy of Henrico County Landfill's Solid Waste Permit applicable at the time of the reporting period.	Reviewed Solid Waste Permit provided: "SWP545_PA.pdf"	Response accepted. Closed 11/9/2012
10	NIR	It was not clear in the Project Monitoring Plan when the strip recorder was no longer being used.	Blue Source updated Monitoring Plan to better clarify.	Reviewed updated the Project Monitoring Plan section regarding the strip chart recorder The "Henrico_County_Monitoring Report_June 2010- Sept 2012 version 5.0.doc". Updated 1) to identify that the strip chart recorder was only used for 2.5 months and that the Red Lion data logger was used the remaining 25.5 months and 2) the methane concentration and flow meter sections.	Response accepted. Closed 11/9/2012

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The Project was confirmed as being fully operational throughout this latest monitoring period. Implementation of the project activity was confirmed on site. The Project continued to be implemented according to the description provided in the validated PDD and the Project Monitoring Plan. The Project's start date of June 3, 2005 was confirmed during the original validation.

Stage 1 of the Project is the expansion of the pre-existing wellfield and installation of a larger capacity flare and is completely operational, including the expansion of the existing collection and destruction system from 14 original wells. . As part of this project phase, in December 2004, Henrico County decommissioned the pre-existing flare and in June 2005, a larger flare station was installed. An additional 87 wells were installed during this time period. The wellfield was further expanded in 2006 with the addition of 5 new wells. In the fall of 2010, the collection system was expanded again with 18 new wells, bringing the total number of eligible wells to 110.

Stage 2 of this involved the implementation of a beneficial use project. Stage 2 involves capturing biogas to be transported to a power generating facility located on-site and used for electricity

generation. As part of this phase, a 4 MW power generating facility was constructed by Ingenco. The captured biogas is transported to this power generating facility located on-site and used for electricity generation, using a number of diesel generators. Phase 2 became operational in September 2010 and most of the gas collected from the Landfill was destroyed by Ingenco for electricity generation in 2012. Note: Emission reductions were not claimed for electricity generation.

SCS Global Services reviewed evidence for any data, variables or methodologies written in the Monitoring Report that differed from those stated in the validated PDD. SCS also, through an examination of an agreement (still in force) between Ingenco Renewable Development, LLC and Henrico County, verifies that Ingenco continues to own the rights to GHG credits produced from this Project. In addition, Henrico County continues to own and operate the LFG collection system and flare station. Blue Source continues to be contracted with Ingenco to monetize the emission reduction credits associated with the Project.

The initial validation of the project identified two methodology deviations between the monitoring or measurement requirements of the validation criteria and the Project's monitoring plan. The methodology deviations were reviewed by the validation body and found to be acceptable, as summarized in the table below:

Parameter	ACM0001 Requirement	Deviation from Requirement	Validation Conclusion
MDproject, y – Ex ante of the amount of methane that would have been destroyed or combusted during the year.	Use a first order decay model per the CDM Annex 10 "Tool to determine methane emissions avoided from disposal of waste at a solid waste disposal site."	Emission reductions for 2009 through 2018 are estimated using the quantity of waste disposed at the Landfill and the US EPA's LandGEM model.	Deviation acceptable. The gas volumes generated by the LandGEM model are for illustrative purposes only, as emission reductions will be based on <i>ex-post</i> monitoring data of the Project performance.
EFEL,j,y – Emission factor for electricity generation for source <i>j</i> in year <i>y</i> .	Following option A2 of the "Tool to calculation baseline, project, and/or leakage emissions from electricity consumption," a conservative default value of 1.3 tCO ₂ /MWh may be used.	An emission factor for electricity generation (EFEL,j,y) is assigned a value of 0.515 tonnes CO ₂ per MWh based on US EPA's eGrid 2007 for SRVC subregion. This value will be reviewed annually upon the release of updated eGrid data.	The 1.3 tCO ₂ /MWh default value provided by the tool is not representative of the emission intensity of grid-connected electricity generation in the US. Further, the Project does not consume a significant quantity of electricity and electricity consumption does not represent a large emission source for the project. As such, this approach is reasonable.

During this verification period, additional deviations were noted between the monitoring systems described in the validated PDD and those described in the monitoring report, as follows:

Parameter	Monitoring	Deviation	Verifier Conclusion
PDD states on page 37- "Annual verification" under the 'Schedule' in section 7.	Alternative verification periods	Verification for this last verification period was for 16 months instead of the annual verifications.	Deviation acceptable. . Does not impact eligibility, conformance, or performance of Project against ACM0001
PDD states on page 2 that "The Landfill's NMOC emissions will be assessed annually to ensure that the Landfill is not required to install a collection system."	Alternative monitoring method	A five- year assessment is done. Also, monitoring is performed by the County and Engineering firm constantly reviewing any new local, state, regional or federal updates to the regulations as well as performing the appropriate documentation for the Title V and GHG reporting.	Deviation acceptable. Does not impact eligibility, conformance, or performance of Project against ACM0001.
PDD states on page 25- Methane Density at 70 F & 1 atm is 0.000669 to be used in the calculations	Alternative factor	The correct value is 00664321412 for 0 degrees & 1 atm, because 0 degrees is what all flows are adjusted to.	Deviation acceptable. Does not impact eligibility, conformance, or performance of Project against ACM0001.

There were no remaining issues from previous validation or verification.

4.2 Accuracy of GHG Emission Reduction or Removal Calculations

The verification process was focused on independent testing and checking of the supplied spreadsheets to ensure that they were consistent with the formulas and equations described in ACM0001 (Version 10) and the validated PDD. In addition, checks of raw data used in the calculations, including flows and methane content and utility and fossil fuel invoices, were checked to the values used in the final calculations and tested for transcription or mathematical errors.

SCS Global Services reviewed emission reduction calculations for the reporting period, using the following specific tests and checks:

- Samples of raw data were tested for continuity and consistency of flow rates, methane content and for handling of outliers.
- Methane fraction readings were compared to the data used in the calculations.
- Excel formulas that transposed data from one worksheet to another were checked.
- All formulas used were tested to ACM 0001 v10 and to the validated PDD.
- Samples of raw data were examined and followed through to final calculations.
- Samples of raw data were also examined for operation of the flare to the required parameters (temperatures and flow rates) defined in the validated PDD.
- Samples of spreadsheet aggregation formulas were checked for accuracy.
- Default factors were verified to the validated PDD.
- Data from project emissions were checked against samples of original invoices.
- Independent calculations, using aggregated spreadsheet data, were used to compare final results from Blue Source spreadsheets

Flow data from June 1-August 18, 2010 was plotted on strip chart recorders located at the blower / flare station. During these two and a half months, daily and monthly flows were determined and entered into spreadsheets by the Landfill Operator.

After August 18, 2010 a Red Lion data logger was installed with the capability to record flow, methane concentration and flare temperature. On November 12, 2010, continuous methane composition monitoring began. Per the CDM "Tool to determine project emissions from flaring gases containing methane" version 1, a default flare efficiency of 50% for open flares when methane composition is not measured on a continuous basis is used, 98% if it is continuous. The aggregated data was checked in this time period to test that the correct percentages were used to calculate emissions.

All calibrations for the flow meters to both the flare and to the Ingenco plant were checked to verify that they were calibrated to manufacturers' specifications. All calibrations for the methane analyzers were also checked to verify that they were calibrated to manufacturer's specifications. The following is a synopsis of calibrations for the flow meters and gas analyzers:

For the Landfill gas flow meters:

At the flare: Flowmeter Model Rosemont 3095 Multi-Variable Pressure Transmitter, Serial #: 130579: Calibrated January 2010, January 2011 and January 2012 within manufactures' recommendations. This meter was checked for calibration accuracy quarterly. All calibrations were within within manufacturer's tolerances of .

At the Ingenco Electricity Generation plant: Flow meter Model Rosemont 3095 Multi-Variable Pressure Transmitter, Serial #: 306661: This meter was calibrated September 2010, August 2011 and August 2012 within manufactures' recommendations. This meter was checked for calibration accuracy quarterly. All calibrations were within manufacturer's tolerances.

For the Gas Analyzers:

The validated PDD states that the methane analyzers will be calibrated per manufacturer's recommendations (at least annually) The following tables summarize the history, analyzers used, dates of use and factory calibration dates:

For the portable GEM analyzers, they were field-calibrated prior to each use. They were also calibrated in accordance with the manufacturer's recommendations (i.e. semi-annual factory calibration) per the following table:

History of Hand-held Analyzer Calibrations	Make	Model	Serial #		
June 1 2010 to November 12, 2010	Landtec	GEM2000	GM11208	GM08014	GM05722
			Calibrated		
					2/9/2010
			8/24/2010	8/26/2010	7/24/2010
			1/24/2011	3/10/2011	1/24/2011

For the Continuous Analyzers:

History	Make	Model	Serial #	Calibrated
Installed Continous Gas Analyzer 11/12/2010	Landtec FAU-TDL Continuous gas analyzer	FAU-TDL Continuous gas analyzer	1006	8/30/2010
May 4-May 12th, 2011	Landtec	GEM2000	GM05722	1/24/2011
Re-installed 5/12/2011- August 3, 2011	Landtec FAU-TDL Continuous gas analyzer	FAU-TDL Continuous gas analyzer	1006	5/9/2011
August 3- Sept 22, 2011	Landtec FAU-TDL Continuous gas analyzer	FAU-TDL Continuous gas analyzer	1007	5/17/2011
Sept 22, 2011- March 22, 2012	Landtec FAU-TDL Continuous gas analyzer	FAU-TDL Continuous gas analyzer	1037	9/19/2011
March 22, 2012- April 30, 2012	Landtec FAU-TDL Continuous gas analyzer	FAU-TDL Continuous gas analyzer	1006	3/14/2012
April 30, 2012- through end of verification period (9/30/2012)	Landtec FAU-TDL Continuous gas analyzer	FAU-TDL Continuous gas analyzer	1037	4/23/2012

Project emissions were subtracted from total emission reductions. Project emissions consisted of indirect emissions of CO₂ from electricity consumption and direct emissions of CO₂ from the combustion of propane as the flare pilot fuel and the diesel used to start the generators used at

Ingenco. SCS Global Services noted very minor calculation errors, but they had no material impact on the overall calculations. Independent calculations of the final emission reductions (after non-conformances were resolved and new calculations were submitted) showed very little difference with the emission reduction calculations supplied by Blue Source, LLC and were immaterial.

4.3 Quality of Evidence to Determine GHG Emission Reductions or Removals

Documentation was provided by Blue Source LLC for emission data, the data collection process and the quality systems associated with this project. Additional supplementary evidence was provided on-site with oral and documented evidence provided by both Draper Aden Associates and Blue Source LLC regarding details of the landfill itself, monitoring equipment history, maintenance and calibration and details of both the equipment on the flare skid and the gas collection system associated with the landfill.

Documented evidence included electronic flow records, methane analyzer records, flow aggregation and calculation records, invoices and equipment/well field O&M records.

SCS Global reviewed evidence of the above data sources to a sampling plan and did an independent review of the factors associated with methodology and the calculations themselves. The reliability of the evidence was demonstrated by the corroboration provided by Draper Aden Associates with the raw data submitted during the document review. In addition, the site visit to the flare flow meter and methane analyzer spot checked data corroborated well with the flows and methane content provided in the data records.

The quality of the data increased in 2010 when the Red Lion data logger was installed, along with a continuous methane analyzer.

The evidence provided was sufficient for verification of the project and consistent with the requirements of the VCS Standard, v3.3 (Oct 4, 2012), ACM0001 (Version 10), the validated PDD and the Project Monitoring Report and meets generally accepted evidentiary standards for best practice in GHG accounting.

4.4 Management and Operational System

The management and responsibilities for the operational system for this project is shared by Henrico County Landfill personnel, the contracted Engineering company tasked to manage this Project (Draper Aden Associates) and Blue Source LLC.

SCS Global Services interviewed key personnel during its site visit to the Blue Source Henrico County Landfill Gas Combustion Project and assessed the management control environment of Henrico County Landfill Management, Draper Aden Associates, Ingenco technicians and Blue Source LLC. Controls include staffing key positions with competent personnel, exercising supervisory and management oversight, and managing data.

Through the document review process and through interviews both with the project engineers and a representative from Blue Source LLC., a good understanding of the division of responsibilities between all parties was demonstrated. Based on site interviews with Draper Aden Associates and Blue Source LLC, we confirmed that the division of responsibilities follows the descriptions in Henrico County Landfill's "Project Monitoring Report."

Henrico County's Public Works Department has partnered with Draper Aden Associates to oversee monitoring activities. In particular, DAA handles all the operations and management of gas collection system; has field technicians that balance the well field and downloads the data from the Red Lion data logger for off-site storage. The site originally used a strip recorder from June 1st to August 18th, 2010 where County Landfill Personnel were responsible for changing out the strip chart recorder and gas flow / data quality monitoring. Since August 2010, DAA staff download the data from the data logger and submit data to Blue Source for integration into emission reductions calculations. Blue Source saves the raw data files and then, after applying the appropriate emission reduction parameters, creates the emission reduction calculations that undergo an internal QA/QC checklist. DAA also assists the County in areas of permitting.

There were some operational system redundancies noted that made the system more robust: A GEM analyzer is used as a double check for the continuous analyzer readings, even though the continuous analyzer is calibrated per manufacturer's recommendations. Also, Draper Aden Associates periodically monitors the data for outliers on a regular basis, along with Blue Source LLC.

Data permanence is assured through redundancy of data saved by both Henrico County Landfill and by Blue Source, LLC. The data is also backed up by these two entities. At least once per week, data from the PLC is uploaded to the server

Project monitoring is documented in the Project Design Document (November 19, 2009). For this verification period, SCS Global Services reviewed version "Henrico County_Monitoring Report_June 2010-Sept 2012 version 5.0."

In conclusion, SCS Global Services has determined that the project is in conformance with the latest Monitoring Report (version 5.0) and continues to have adequate management and operational systems in place with respect to monitoring and reporting, as determined through observation during this site visit and a desktop review of project documentation.

5 VERIFICATION CONCLUSION

Blue Source LLC has supplied a Project Monitoring report, Validated Project Design Document and the necessary evidence requested during the verification process to enable SCS Global Services to arrive at an opinion on the Blue Source Henrico County Landfill Gas Combustion Project. The emission reductions generated from the capture and destruction of landfill gas methane via a flare and a beneficial use project consisting of the destruction of landfill gas using converted diesel generators for electricity generation have been compiled in a transparent manner, the data was found to be accurate within the uncertainty limits of the measurement equipment and emission reduction calculations were found to include all the required sources.

SCS Global Services has determined that the Blue Source Henrico County Landfill Gas Combustion Project, developed by Henrico County, Draper Aden Associates, Blue Source, LLC and Ingenco, is in conformance with the Consolidated Baseline Methodology ACM001, version 10. Furthermore, the Project Plans and data are considered accurate, complete, transparent, and free of material misstatements. The GHG emission reductions are considered verified to a reasonable level of assurance.

Summary of Verified Emission Reductions (tonnes CO₂e) per vintage:

Reporting Period: June 1, 2010 to December 31, 2010	
GHG Emission Reductions or Removals	tCO ₂ e
Baseline Emissions	15,111
Project Emissions	174
Leakage	Not Applicable for this project.
Net GHG emission reductions or removals	14,937

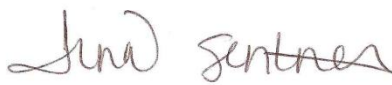
Reporting Period: January 1, 2011 to December 31, 2011	
GHG Emission Reductions or Removals	tCO ₂ e
Baseline Emissions	70,556
Project Emissions	116
Leakage	Not Applicable for this project.
Net GHG emission reductions or removals	70,450

Reporting Period: January 1, 2012 to September 30, 2012	
GHG Emission Reductions or Removals	tCO ₂ e
Baseline Emissions	48,102
Project Emissions	260
Leakage	Not Applicable for this project.
Net GHG emission reductions or removals	47,842

* Emissions rounded off to nearest whole number. Total Emission Reductions rounded down to nearest whole number

Verification Summary:

Project Developer	Blue Source LLC., as credit originator for the Blue Source Henrico County Landfill Gas Combustion Project
Project Location	10600 Fords County Lane, Glenn Allen, VA, USA
Project Type	Landfill gas destruction
Project Periods:	2010 (1 June – December 31, 2010) 2011 (1 January - December 31, 2011) 2012 (1 January – September 30, 2012)

Verification Objective	To determine, with reasonable assurance, that Blue Source LLC had quantified, monitored, and fairly reported to the Verified Carbon Standard its landfill gas emission reductions in accordance with all applicable criteria.
Verification Scope	The scope of the engagement included the quantification, monitoring and reporting of greenhouse gas project emissions reductions associated with the operation of 1) open flaring, and 2) modified diesel engine electricity generators.
Nature of Data Verified	Historical
Protocol/Methodology	CDM ACM0001, version 10 Verified Carbon Standard Version 3.3 (4 October, 2012) Verified Carbon Standard Program Guide Version 3.4 (4 October, 2012),
Emissions/Removals Verified	Vintage 2010: 14,937 metric tons of CO ₂ -equivalent Vintage 2011: 70,450 metric tons of CO ₂ -equivalent Vintage 2012: 47,842 metric tons of CO ₂ -equivalent
Verification Conclusion, with Reasonable Assurance	Based upon the verification activities described above, SCS Global Services has concluded that the reported 2010, 2011 and 2012 vintage methane emission reductions are, in all material respects, fairly stated.
Representation	SCS Global Services represents that the Emission Reductions verified in this report have occurred in accordance with the applicable VCS rules.
Lead Verifier	 Mark Lutz, Lead Verifier, December 19, 2012
Internal Reviewer	 Tina Sentner, December 20, 2012
<i>This verification statement is valid when signed and dated by an SCS Global Services internal reviewer.</i>	