



Verification Report for
Kimble Sanitary Landfill Gas Project
Dover, Ohio
USA

Climate Action Reserve
Project ID CAR
621

Landfill Project Protocol, Version 3.0

10 October 2013

Report Prepared for:

Kimble Company
3596 State Route 39 NW
Dover, OH 44622

Report Prepared by:

NSF International Strategic
Registrations, Ltd.
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Summary

Kimble Company engaged NSF International Strategic Registrations, Ltd. (NSF-ISR) to verify its methane emission reductions from the Kimble Sanitary Landfill (CAR 621) to the Climate Action Reserve for the reporting period of 1 April 2012 to 31 March 2013. Note that the landfill owner's corporate name has been changed from Penn Ohio Coal Co. to Kimble Company.

Kimble Company, the project developer, is a municipal landfill as described by NAICS code 562212. The "Kimble Sanitary Landfill Gas Project" (the Project) is listed in the Reserve's database with the identification number CAR 621. The Kimble Sanitary Landfill Gas Project's methane emission reductions during the cited project reporting period resulted from the collection and destruction of landfill gas in a single flare at the Kimble Sanitary Landfill located at 3596 State Route 39 NW, Dover, Ohio. The Project reduced emissions into the atmosphere by 107,008 metric tons CO₂-e for the reporting period of 1 April 2012 to 31 March 2013.

1. Introduction

1.1 Objective

The objective of this verification audit was to determine, with reasonable assurance, that Kimble Company had met eligibility requirements and had quantified, monitored, and fairly reported to the Climate Action Reserve its landfill gas emission reductions at the Kimble Sanitary Landfill in accordance with all applicable requirements of the Climate Action Reserve Landfill Project Verification Protocol version 3.0

1.2 Scope

The scope of the engagement included verification of the quantification, monitoring and reporting of greenhouse gas emission reductions from the project at the Kimble Sanitary Landfill for the reporting period of 1 April 2012 through 31 March 2013. The scope included verification of the calculated project emissions associated with combustion of fossil fuel in a single flare and indirect emissions attributed to electricity consumption from project-related activities. And finally, the scope of this verification covered a review of all eligibility rules for this project per the requirements in the Landfill Project Protocol.

1.3 Criteria

Kimble Company implemented its methane reduction in accordance with the requirements of the Climate Action Reserve's Landfill Project Protocol, Version 3.0, December 2, 2009; Errata and Clarifications, Version 3.0, October 8, 2013; and the Climate Action Reserve Program Manual, October 26, 2011. NSF-ISR conducted its verification of the reported emission reductions in accordance with the Climate Action Reserve Project Verification Manual, December 20, 2010; and ISO 14064:2006 Part 3, *Greenhouse gases – Specification with guidance for the validation and verification of greenhouse gas assertions*.

1.4 Materiality

In accordance with the Verification Program Manual, emission reduction reports are considered fairly stated if Projects registering at 100,000 CRTs or greater (expressed in terms of CO₂e) annually achieve greater than +99% accuracy level (less than 1% error) relative to the verification body's calculated emission reductions. The verification body applied this quantitative threshold of materiality to the entire reporting period.

1.5 Level of Assurance

This engagement was performed at the reasonable level of assurance.

2. Verification Approach

2.1 Team appointment and COI Review

This verification was performed by Mark Lutz, NSF-ISR Lead Verifier and reviewed by Michael DeBusschere, NSF-ISR Senior Internal Reviewer. Conflict of Interest inquiries were completed for NSF-ISR, the Lead Verifier and the Senior Internal Reviewer. A finding of low COI risk was confirmed by the Climate Action Reserve.

2.2 Document Review

The Lead Verifier conducted a document review to inform the planning process in advance of performing onsite verification activities. Documents reviewed included Kimble Sanitary Landfill project documentation submitted to the Climate Action Reserve; documentation prepared for Kimble Company by Element Markets (contracted by Kimble Company to assist them in this project), including a monitoring report entitled "Project Design Document: Kimble Sanitary Landfill Gas Project"; gas flow meter and methane analyzer data; calibration documentation; regulatory compliance attestations and supporting documents and equipment information related to flare operations and monitoring equipment.

2.3 Planning

NSF-ISR's verification approach is risk-based. It draws upon our understanding of risks to fair statement of reported emissions and the operation of controls to reduce such risks. As a result of the document review and preliminary conversations with Element Markets, a verification plan and a sampling plan were developed for this engagement.

2.4 Verification Activities

NSF-ISR conducted a site visit of the Kimble Sanitary Landfill Gas Destruction Project's collection and destruction operation in Dover, Ohio, on June 24, 2013. The purpose of the site visit was to confirm the project equipment and collection system associated with the open flare and assess the capability of Kimble Company's management system and procedures to produce accurate, reliable, and reproducible

Project Verification Report

data and information from project activities. In addition to a site visit, verification activities included a desk review and phone interviews. The nature of verification activities conducted included:

- Confirmation of continuing eligibility, ownership of the project, and quantification of project emission reductions in accordance with the Climate Action Reserve Landfill Project Protocol Version 3.0;
- Verification of evidence presented by Kimble Company personnel to demonstrate its knowledge of and assertion of compliance with applicable air, waste and water regulations;
- Verification of applicable methane and carbon dioxide emission sources within the project boundary and their quantification as defined by the Climate Action Reserve Landfill Project Protocol Version 3.0;
- Verification of Kimble Company's monitoring of key operational parameters of its landfill gas collection and destruction project;
- Determination Kimble Sanitary Landfill's conformity in all material respects with the requirements of the Climate Action Reserve Landfill Project Protocol Version 3.0;
- Selecting locations and processes within the scope of Kimble Company's landfill gas project to visit based upon an assessment of risks to fair reporting; and
- Reviewing the basis for and results achieved from the calculated methane emission reductions from its landfill gas collection and destruction project.

3. Verification Findings

3.1 Project Description

The Kimble Company operates a municipal solid waste facility in Dover, Ohio. During the project reporting periods covered by this report, landfill gas was collected and routed for combustion at a single open flare located at the landfill. The collection and control system consisted of methane collected from a landfill that included vertical extraction wells, associated piping and a blower/flare skid. A well-field expansion was completed on August 30, 2012. The expansion included the installation of eight (8) vertical extractions wells. Currently, fifty-two (52) wells are active at Kimble Sanitary Landfill.

Vacuum is created on the well field by electrically-driven centrifugal blowers located on the blower/flare skid. The landfill gas passes through the blowers to the flare where it is combusted. The LFG flow rate is measured with a thermal mass flow meter which automatically adjusts for temperature and pressure to 1 atmosphere and 60F. Methane content is currently measured with a continuous gas analyzer. A thermocouple measures the combustion temperature of the flare.

KSL controls leachate by collection piping to drain leachate into sumps located in each landfill cell. From there, leachate is pumped above-ground storage tanks where it is contained onsite. Kimble Sanitary Landfill is permitted by the Ohio EPA to recirculate leachate. Per the landfill's operating license, leachate application cannot exceed 10 gallons of leachate for each ton of solid waste received on any given day. Leachate in excess of the amount that can be recirculated is hauled to the Dover POTW

Project Verification Report

(Publically Owned Treated Works). Kimble Sanitary Landfill does not add any other liquid to the waste mass other than leachate and thus the landfill is not classified as a bioreactor.

3.2 Eligibility

NSF-ISR considered evidence to establish the eligibility of the Kimble Sanitary Landfill Gas Project under the Landfill Gas Protocol Version 3.0

Location: The project is located in Dover, Ohio – located entirely within the U.S. and was eligible as a landfill project under the Climate Action Reserve Protocol. NSF-ISR confirmed the location through annual site visits in 2011, 2012 and most recently on June 24, 2013.

Project Start Date: The project start date was December 28, 2009, - the day the open flare became operational on a continuous basis. NSF-ISR had confirmed the start date of the Project from records during our original verification of this landfill, conducted by NSF-ISR, April 12 and 13, 2010 and that the Project was listed with the Climate Action Reserve within 6 months of the start date on March 16, 2010 per Reserve guidelines.

Crediting Period: The crediting period for landfill projects is 10 years from the project start date. The crediting period for the Kimble Sanitary Landfill Gas Project extends to December 27, 2019. NSF-ISR has concluded that the reporting period verified in this report is within this first crediting period of the Project.

3.3 Additionality

Legal Requirement Test: NSF-ISR reviewed an Attestation of Voluntary Implementation signed by the President of Kimble Company on September 6, 2013 for the project reporting period from April 1, 2012 through March 31, 2013. NSF-ISR, in its original verification of this landfill, concluded that the Kimble Sanitary Landfill was subject to NSPS regulation because it had a solid waste design capacity greater than 2.5 million Mg. and was required to hold a Title V Permit and to conduct Non-Organic Compound (“NMOC”) emission rate testing. NSF reviewed the most recent Tier II Emission Rate Report, conducted by Cornerstone Environmental Group, LLC, May, 2010, and found that the estimated NMOC emissions to be 32.2 Mg/year for 2012 and 33.6 Mg/year for 2013 - well under the 50 Mg./year threshold where landfills are required to install a gas collection system.

NSF-ISR verified the implementation of the project developer’s monitoring plan with respect to changes in regulations that could affect the continued eligibility of the landfill gas destruction project. NSF-ISR reviewed evidence obtained from the Kimble Company concerning knowledge of any changes to regulations that would affect the voluntary nature of the project’s implementation. From this review NSF-ISR has concluded that the project implementation continued to be voluntary.

Performance Standard Test: NSF ISR determined during the first verification site visit that Passive vents were installed previously at the Kimble Sanitary Landfill site, but no landfill gas was ever destroyed, actively or passively. This conforms to the description in the Landfill Project Protocol, Version 3.0 to scenario “1.” The project therefore has met the performance standard test described in the Landfill

Project Verification Report

Project Protocol Version 3.0. According to the Protocol, the project developer who has once passed the performance standard test is eligible to register reductions for the lifetime of the project crediting period, as long as a project is not otherwise determined ineligible due to the regulatory changes that impacted project's voluntary implementation. NSF ISR has concluded from these facts the project has met the performance standard test.

Regulatory Compliance: NSF ISR reviewed an Attestation of Regulatory Compliance signed by the President of Kimble Company on September 6, 2013 that was supported by evidence of implementation of regulatory monitoring of the project. NSF examined regulatory compliance by an interview with Kimble Company's Landfill Engineer and by a review of an internal calendar used to track compliance obligations. NSF-ISR reviewed a sample of regulatory compliance documents of the Kimble Sanitary Landfill site, including: Landfill's Operating Permit (CID 42709); Title V permit; Indirect Discharge Permit (#OHP000091); and an NPDES permit for Ponds (#OH0107883.) These permits included, as applicable, inspection frequencies, sampling frequencies and reporting requirements. NSF-ISR verified that these permits were all current. All of the above were current and there were no violations observed, except as noted below in the next paragraph..

Kimble Company reported that an NOV was issued March 18, 2013, by the Ohio EPA for a violation to administrative Code (OAC) 3745-27 for "failure to control leachate and for failure to construct the solidification area according to the authorizing documents." NSF-ISR reviewed a letter dated May 13, 2013, where the Ohio EPA wrote that the violation had been abated. This NOV did not affect material compliance to the Protocol. There were no other NOV's. Based on previous verifications, NSF has concluded that the project had not been in a state of recurrent non-compliance or the result of negligence or intent. Results of the Project's ongoing regulatory review indicated that the landfill was in compliance with all other federal state and local regulations during the reporting period April 1, 2012 through March 31, 2013. From this evidence, NSF ISR has concluded that the project and the Kimble Sanitary Landfill remain in material compliance with applicable laws and regulations during the reporting period April 1, 2012 through March 31, 2013

3.4 Ownership

NSF-ISR reviewed the Attestation of Title signed by the President of Kimble Company on September 6, 2013 concerning ownership of landfill gas emission reduction credits for the period of April 1, 2012 through March 31, 2013. This document asserts that the project applicant had legal rights to any emission reduction credits to be issued by the Climate Action Reserve. As noted earlier, the landfill's corporate name changed from Penn Ohio Coal Co. to Kimble Company, as approved by the State of Ohio.

In previous reporting periods, NSF ISR had confirmed the information in the Attestation of Title documents by reviewing contract documents, including the contractual scope of work statement that the Kimble Company executed with Element Markets. This agreement was executed on 18 December 2009 and provided for Element Markets to provide consulting services to Kimble Company to assist it with the monetization of emission credits. The Engineering Manager, the Landfill Engineer of Kimble Company and the Project Manager from Element Markets all verbally confirmed that this agreement is still in effect and that no modifications or amendments to that agreement had been made since this date of execution.

From this evidence, NSF-ISR has concluded that the project developer, Kimble Company, is entitled to receive the emission reduction credits that may be issued by the Climate Action Reserve for methane destroyed during this project period.

3.5 Project Boundaries and Emission Sources

The Project included all emission sources from the operation of the landfill gas collection system to the ultimate destruction of the landfill gas in an open flare.

GHG Sources, Sinks and Reservoirs associated with the baseline scenario

- CO₂ from the oxidation of CH₄ by soil bacteria. As the landfill is not covered by a synthetic liner, the Landfill Project v. 3.0 Reporting Protocol assumption that 10 percent of the methane produced would be naturally oxidized by soil bacteria has been applied.
- CH₄ vented to the atmosphere.

GHG sources, sinks and reservoirs associated with the project:

- CH₄ from the incomplete combustion of CH₄ in the 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 have been converted to CO₂ equivalents.

3.6 Performance Against Project Protocol/Methodology

The project was implemented in conformity with the Landfill Project Protocol version 3.0

Conditions Affecting Landfill Gas Collection. There were no destruction device issues for the reporting period. There was an expansion of wells and LFG collection piping, as mentioned previously and the emission reductions were relatively in line with the previous reporting period, given the small expansion.

Monitoring and Measurement Equipment. The project required the development and implementation the project monitoring and quarterly inspections cleaning and calibration of landfill gas flow metering devices. NSF-ISR reviewed flow meter calibration and maintenance records that indicated that the flow measurement equipment was cleaned and inspected on a quarterly basis with documented findings. Quarterly inspections, cleanings and calibrations were performed for the flow meter installed at the open flare on May 30, 2012, September 29, 2012, November 19, 2012 and February 18, 2013. In each instance the as- found condition was within acceptable calibration tolerances The flow meter calibrations continue to conform or exceed manufacturer-recommended factory calibration intervals.

NSF-ISR confirmed that the gas flow meter was calibrated within two months of the end of the reporting period (February 18, 2013), by a certified third party, per protocol requirements and that factory calibration schedules continue to adhere to the manufacturer's guidance ("every 18 months at a minimum.") Calibration records indicated that accuracy on these checks were well within the protocol guidelines of +/-5%.

Project Verification Report

The protocol requires that methane is measured continuously, recorded every 15 minutes and averaged at least daily. With data information seen on the monitoring equipment during our site survey and with the inspection of samples of the raw data and spreadsheet calculations, we concluded that methane was measured continuously and recorded and averaged per protocol requirements. A continuous gas analyzer connected to a digital data recorder was the system used throughout the reporting period to monitor methane.

NSF-ISR verified by records that the continuous gas analyzer was inspected, cleaned as needed and field checked for calibration on a quarterly basis by a certified third-party calibration service. Quarterly inspections, cleanings and calibrations were performed on 6/27/2012, 9/27/2012, 12/20/2012 and 3/28/2013. None of the calibrations showed a drift that was beyond the $\pm 5\%$ threshold per protocol requirements. NSF-ISR confirmed that the continuous gas analyzer was calibrated within two months of the end of the reporting period (March 28, 2013), by a certified third party, per protocol requirements and that factory calibration schedules continue to adhere to the manufacturer's guidance (every 18 months.)

The Monitoring Plan and Missing Data calculation procedures were reviewed for consistency with the Landfill Project Protocol requirements and the application of the most current Errata and Clarifications document. There were two instances of missing data observed during the reporting period. During both of these periods, the use of missing data procedures was used correctly.

The project utilized a Yokogawa FX106 paperless recorder (datalogger) with remote operations capability to collect flow and temperature with readings taken in one minute increments. For this reporting period, NSF-ISR examined a data disk of weekly Excel files and a number of aggregated Excel data files to verify that spreadsheet formulas were consistent with the Landfill Gas Project Protocol and that operating parameters (flare temperatures and flow, in particular) have been met. In addition, NSF-ISR verified that all data points were deleted where LFG flow is recorded at less than 500 deg F in the emission reduction calculations per Protocol requirements. NSF-ISR also confirmed that data was corrected on Excel spreadsheets to 60 deg F and 14.7 psia per protocol requirements.

Since the project emissions for electric usage uses the same meter as electric usage for non-project applications, the average power load of the blower motor that was used at the flare skid X the number of days of this reporting period was used as an estimate of electric usage associated with the project. Propane delivery records were used to estimate the amount of propane use to fuel the flare pilot ignition system. NSF-ISR found that the calculations of the CO₂ emissions from the usage of both electricity and propane were found to be correctly applied in the Project emissions.

3.7 Project Management System

NSF-ISR verified the project's management system in the site visit conducted on June 24, 2013. In particular, verification looked to confirm continued adequacy of the following elements:

- Definition and maintenance of an appropriate control environment by Kimble Company management and personnel;
- Training and competence of landfill project managers and operating/data management personnel;
- Identification and management of legal requirements related to the landfill operations;
- Identification and maintenance of records required by the landfill project;

Project Verification Report

- Landfill site and gas collection and combustion equipment specifications;
- Quantification methods and calculations a project emissions; and
- Checking and corrective action mechanisms.

Based on this review, NSF – ISR found the continued adequate control environment existed for the project.

3.8 Calculation of GHG Emission Reductions

The Kimble Sanitary Landfill Gas Project emission reductions were calculated per the formula defined in the Climate Action Reserve Landfill Gas Protocol, Version 3.0. The basic formula was: Landfill gas destroyed,

- the portion of methane oxidized in the baseline scenario,
 - carbon dioxide emissions from fossil fuel consumption (propane),
 - indirect carbon dioxide emissions resulting from the use of electricity from the grid,
- = Project Emission Reductions

In the case of the Kimble Sanitary Landfill Gas Project, the verification team reviewed data downloaded from the data logger and compared a sample to the emission reduction calculations, verified data completeness for the reporting period, scanned data for data gaps and for out-of- range values, reviewed spreadsheet formulas for consistency with Protocol equations, and recalculated emission reductions.

Electricity usage for the project was calculated by multiplying the total average power load of the blower motor that is used (25 A) by the volts (25 A * 460 V=11,500 W). The watts are then multiplied by the number of hours in a day (24) and the number of days in a given year. This method is a conservative estimate because it assumes that the blower was operating constantly, 24 hours /day, 365 days for the reporting period, disregarding any down time.

The verification team also verified the correct calculation of fossil fuel emissions based on a review of estimates of propane consumption used to restart the flare. There was no liner on the landfill during the reporting period. As a result, the project continued to reduce its quantified methane destroyed by the 10% methane soil oxidation factor.

3.9 Corrective Action Requests/Recommendations

All requests for corrective action raised by NSF-ISR during this reporting period were addressed to NSF-ISR's satisfaction and closed. These findings are detailed in our List of Findings, a private document.

3.10 Approved Variances or Deviations

No variances were requested or deviations approved for this Project.

4. Verification Results

4.1 Verification Team Recommendation:

Project Verification Report

Based on the verification activities described above, the verification team has concluded that the Kimble Sanitary Landfill Gas Project has achieved the following emission reductions:

Reductions/ Removals 4/1/2012 through 12/31/2012	Metric Tonnes CO ₂ e
Landfill Gas Destroyed	81,464.56
- Project Emissions	52.38
- Pre-Project Adjustment	0
= Net Project Emission Reductions/Removals	81,412 *

* Rounded Down

Reductions/ Removals 1/01/2013 through 3/31/2013	Metric Tonnes CO ₂ e
Landfill Gas Destroyed	25,613.94
- Project Emissions	17.14
- Pre-Project Adjustment	0
= Net Project Emission Reductions/Removals	25,596 *

* Rounded Down

4.2 Verification Audit Summary:

Project Developer	Kimble Company
Project Location	Dover, Ohio, USA
Project Type	Collecting and Destroying Methane from Landfills
Reporting Period	April 1 2012 through March 31, 2013
Protocol Methodology	3.0
Emission Removals Verified	Vintage 2012: 81,412 metric tons of CO ₂ -e, Vintage 2013: 25,596 metric tons of CO ₂ -e
Verification Conclusion	Based upon the above, NSF-ISR has concluded that the Kimble Sanitary Landfill Gas Project 2012 vintage methane emission reductions of 81,412 metric tons (CO ₂ -e) and the 2013 vintage methane emission reductions of 25,596 reported to the Climate Action Reserve are, in all material respects, fairly stated.

Project Verification Report

Lead Verifier	 Mark Lutz, 10-10-2013
Internal Reviewer	 Michael DeBusschere, October 14, 2013
<i>This verification statement is valid when signed and dated by an NSF-ISR internal reviewer.</i>	