



May 1, 2009 – April 30, 2010 Reporting Period
Verification Report for the Northeast Mississippi
Landfill

Prepared for:
NEML1, LLC

July 19, 2010

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1.0 Introduction

Ruby Canyon Engineering (RCE) was contracted by Element Markets, LLC (Element Markets) to perform the repeat verification of the Northeast Mississippi Landfill project (“Project”) for the reporting period May 1, 2009 through April 30, 2010 to the Climate Action Reserve (CAR) Landfill Project Reporting Protocol Version 2.0. The Project involves GHG emission reductions from the capture and destruction of methane from the municipal solid waste landfill located in Tippah County, Mississippi.

1.1 Project Background & Site Description

The Northeast Mississippi Regional Landfill (NEML) is owned by the Northeast Mississippi Solid Waste Management Authority (NMSWMA). The landfill is operated by Waste Connections, Inc., through its fully owned subsidiary Waste Services NE Mississippi. NEML is an active solid waste municipal sanitary landfill located in Tippah County, Mississippi approximately two miles west of Walnut, Mississippi on 288 acres with a permitted disposal area of 82 acres. NEML began receiving waste in 2001 and is not expected to close until 2029.

The Project is owned and operated by NEML1, LLC a wholly owned subsidiary of Element Markets. The Project was voluntarily implemented and began operating on November 5, 2008 and consists of one landfill gas collection system and one open candlestick flare that combusts the collected gas. The Project maintenance and data gathering is conducted by Waste Connections and the greenhouse gas (GHG) calculations are performed by Element Markets.

1.2 Responsible Party

NEML1, LLC
3555 Timmons Lane, Suite 900
Houston, TX 77027

1.3 Verification Team

The RCE verification team consisted of the following individuals who were selected based upon verification experience and knowledge of the landfill methane sector.

Lead Verifier: Sally Phipps
Team Member: Nina Pinette
Senior Reviewer: Bonny Crews

1.4 Objectives

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

1.5 Scope

The scope of the periodic verification consists of the following independent and objective activities:

- Review the reporting period’s Project Design Document and Project Monitoring Plan

- Review the Project Data Acquisition & Quality Control Procedures
- Conduct a site visit to the Northeast Mississippi Landfill project
- Review the Project's baseline emission reductions and check that the baseline and Project boundaries have not changed
- Review the Project's evidence of environmental and regulatory requirements
- Review evidence that the Project passes the legal requirements test and ensure the Project is additional
- Review the Project's emission reduction calculations
- Review of the Project documents and data against the requirements of the CAR Landfill Reporting Protocol 2.0, the Landfill Project Verification Protocol 2.0, the CAR Program Manual (March 16, 2010), and the CAR Verification Program Manual (June 17, 2009).
- Issue requests for clarifications and corrective actions as necessary
- Issue a verification report, list of findings and opinion to Element Markets and CAR

1.6 Verification Criteria

Table 1 – Summary of Verification Criteria

Standard of Verification	Climate Action Reserve Landfill Reporting Protocol 2.0, Landfill Project Verification Protocol 2.0, Verification Program Manual (June 17, 2009), Program Manual (March 16, 2010) and the International Standards Organization (ISO) 14064-3 Specification with guidance for the validation and verification of greenhouse gas assertions
Verification Process	CAR and ISO 14064-3
Level of Assurance	Reasonable assurance (95% materially correct)
Materiality	A +/-5 percent materiality threshold

2.0 Verification Activities Summary

The Project was previously listed with CAR and verified by the verification body SGS. The verification of the May 1, 2009 through April 30, 2010 Project reporting period began with Element Markets selecting RCE as the verification body. The Project data and verification support would be provided by Element Markets on behalf of the wholly owned project developer NEML1, LLC.

Prior to starting the verification, RCE developed a verification plan that was followed throughout the verification. The verification plan consisted of the following activities:

- Completion of a Project Conflict of Interest/Notification of Verification Activities (COI/NOVA) form by RCE to identify any potential conflict of interest with the Project or Project developer. The COI/NOVA form was submitted to CAR's online website and the COI assessment revealed no conflicts of interest and was approved by CAR on April 20, 2010.
- A teleconference verification kick-off meeting was held with John Shaddix, Steve Petridis, Zach Eyler and Ross Stegemoeller with Element Markets on May 6, 2010. During the kick-off meeting RCE was introduced to the key personnel, reviewed the verification objectives and process, reviewed the verification schedule and requested the verification background documents.
- RCE began receiving the background verification documents from Element Markets via email and an ftp site data room May 6, 2010.

- RCE performed a strategic review and risk assessment of the received data and support documents in order to understand the scope and areas of potential risk in the GHG emissions reductions.
- A risk-based site visit sampling plan and desktop sampling plan were developed based upon the strategic review and risk assessment. The verification plan, sampling plan and desktop sampling plan are used throughout the verification and were revised as needed based upon additional risk assessments.
- A site visit was conducted on May 17, 2010. During the site visit RCE performed key personnel interviews, inspected the Project equipment, reviewed the source documents, Project data and calculations, and observed the onsite GHG management systems, and data gathering, monitoring and handling practices.
- A risk-based desktop review of the submitted verification documents was performed. The desktop review included an assessment of the GHG calculation methods and inputs, source data completeness, GHG management and monitoring systems, evidence of regulatory and legal compliance and record retention practices.
- Requests for Clarifications & Corrective Actions were submitted to Element Markets throughout the verification.
- A senior review of the verification sampling, report and opinion was conducted.
- A final verification report, verification opinion and listing of findings were developed.
- An exit meeting was held with the client on June 29, 2010.

3.0 Verification Findings

3.1 *Assessment of the GHG Reduction Project Operations*

The Project currently collects landfill gas (LFG) from NEML and destroys it via combustion in an open candlestick flare. Prior to combustion, the LFG passes through a condensate knockout tank and is measured for flow, temperature, pressure and methane content. The LFG is pulled through a LFG collection system by an electrically-driven centrifugal blower located at the flare skid.

The LFG collection system was installed within Cells 1 through 3 and consisted of 13 vertical gas extraction wells and 7 leachate cleanout wells that vented passively until November 2006. The individual LFG wells are joined by lateral piping that is connected to a common header pipe that is routed to the blower and flare skid. In November of 2006 Waste Connections installed four passive solar flares to test the gas flow rate and quality. The solar flare testing revealed very little flow and all four flares were removed within a week. To control odors and for safety reasons one passive flare was attached between two leachate cleanout collectors during the same time period.

In anticipation of the Project (blower/flare skid) installation, additional landfill gas wells were drilled in August 2008. During this time the passive solar flare was closed but remained onsite to be used as an emergency backup in the event of a blower/flare skid failure. The gas collection system was expanded between November 17 and 18, 2009 with the addition of 8 vertical wells and the expansion was brought online on February 19, 2010.

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

According to the CAR 2.0 Landfill Reporting Protocol only CO₂ and CH₄ GHG are included from the baseline and Project activities. The GHG emission sources resulting from the Project

baseline and the Project activity must be deducted from the Project GHG emission reductions. These GHGs include CO₂ emitted from methane oxidized in the soil, methane vented to the atmosphere, methane destroyed in any pre-Project and Project destruction devices, fossil fuel use and electricity use. The sources of GHG emissions reviewed during the verification of the Project are listed in **Table 2**.

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

Activity	GHG Sources, Sinks & Reservoirs
Baseline	• CH₄ from the combustion of LFG in the passive solar flare. • CH₄ vented to the atmosphere. • Percent methane oxidized by soil bacteria. As the landfill is not covered with a synthetic liner, a 10 percent oxidation factor resulting from natural oxidation by soil bacteria was applied to the baseline emissions.
Project	• CH₄ from the combustion of LFG in the candlestick 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.

3.3 Project Eligibility Criteria

The CAR Landfill Project Reporting Protocol 2.0 specifies three eligibility rules that a GHG Project developer must meet in order to register reductions with the CAR. The three eligibility rules in the CAR Landfill Reporting Protocol 2.0 are location, Project operation start date and additionality requirements that consist of meeting the performance standard and exceeding any legal requirements. During the first verification cycle the Project's location, baseline emissions and the Project start date were verified. RCE re-verified the Project start date, location and baseline emissions. RCE observed no changes in the Project start date, baseline emissions and location from the last verification cycle.

RCE performed a complete additionality assessment to ensure that the Project met the Performance Standard Test and Legal Requirements Test. In addition, the Project developer must provide evidence of exclusive ownership rights to the GHG reductions and evidence that the Project is in compliance with all applicable local, state and Federal requirements. RCE reviewed the Attestation of Regulatory Compliance and Attestation of Title as well as supporting evidence that the Project was in compliance with all applicable regulations and that NEML1, LLC a wholly owned subsidiary of Element Markets has exclusive ownership of the generated GHG emission reductions.

Below is a summary of the CAR eligibility requirements and the Project's compliance to each requirement.

- **Eligibility Rule 1: Location:**
The Project is a US-based landfill located in Tippah County, Mississippi approximately 2 miles west of Walnut, Mississippi USA and therefore meets this eligibility requirement.
- **Eligibility Rule 2: Project Start Date:**
The Landfill Project Reporting Protocol 2.0 states that pre-existing projects must have a start date on or after January 1, 2001 and must be listed with the Reserve twelve

months from the effective date of the protocol which is November 18, 2008. The start date is defined as the date on which a qualifying destruction device becomes operational. According to the Project Design Description and Monitoring Plan the Project became operational on November 5, 2008.

To confirm the Project start date RCE examined the SHAW LFG Specialties Commissioning Report with a commissioning date of November 5, 2009 and the SHAW LFG Specialties Equipment Acceptance and Warranty Acknowledgement provided by Element Markets. The reviewed evidence in combination with interviews with the landfill personnel concerning the Project start date was sufficient evidence to affirm that the Project began flaring gas on November 5, 2008 and therefore meets the Project start date requirements.

- **Eligibility 3: Additionality**

According to the CAR additionality requirements Project developers must pass a Performance Standard Test and a Legal Requirement Test in order to show that the Project reductions are above and beyond business as usual.

Performance Standard Test

Prior to the Project implementation, NEML collected and flared the landfill gas via a non-qualifying destruction device. In November 2006 one passive solar flare was voluntarily installed between two leachate cleanout collectors to control odors and for safety purposes. In August of 2008 the passive solar flare was shut down and kept onsite for emergency purposes. During November 2006 four solar flares were also installed to test the quality and flow of the landfill gas but were removed within one week.

The Project only considered as additional the landfill gas that was destroyed beyond that resulting from the pre-project passive collection and destruction system. Therefore, the Project proponent meets the performance standard threshold under option 2 of the performance standard test. Option 2 states “If the landfill was previously collecting and destroying landfill gas using a destruction device which would not qualify under this protocol (e.g. passive flares), the project is additional under the following condition:

- a. Only the landfill gas destroyed beyond that resulting from the pre-project collection and destruction system is considered additional (i.e. those reductions resulting from the implementation of the new GHG reduction project).”

Legal Requirement Test

For the Legal Requirement 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. During the site visit RCE interviewed the Landfill Manager and held a phone interview with personnel from Waste Connections about the environmental compliance and legal requirements procedures. The Waste Connections personnel regularly review federal, state and local regulations and permitting requirements to ensure NEML is not mandated to collect and combust its landfill gas. In particular, the Waste Connections personnel closely monitor the NEML NSPS Tier II report testing requirements.

NEML has a design capacity above 2.5 million megagrams (Mg) and 2.5 million cubic meters of municipal solid waste. Consequently, the facility is required by the New Source Performance Standard (NSPS) regulation to conduct Non-Methane Organic Compound (NMOC) emission rate testing. During 2007, NEML hired a third-party consultant, SCS Engineers to conduct a Tier 2 NMOC test. The test results from the Tier 2 NMOC emission rate on December 31, 2007 was 7.4 Mg/year and the maximum emission estimate over the next five years was estimated to be 15.4 Mg/year in 2012. RCE reviewed the results from the NMOC test that indicated that NEML is below the 50 Mg/yr regulatory threshold and should not have to recalculate its NMOC emissions for another five years.

RCE reviewed the Legal Requirements procedures detailed in the Project Description/Monitoring Plan and the Waste Connections Environmental Policies and Procedures and confirmed that the Monitoring Plan contains a clear and rigorous method to ensure the Project passes the CAR Legal Requirements Test. An Attestation of Voluntary Implementation was signed by the Senior Vice President of NEML1, LLC on July 13, 2010 and is on file with CAR.

Based upon the personnel interviews and the documentation reviewed RCE did not find any indication that NEML was mandated to collect and combust its LFG. Additionally, there are no local, Mississippi or Federal requirements mandating the installation of a landfill gas collection and conveyance system at NEML. Therefore the results of the regulatory review indicated that the Project developer is following its Project Description/Monitoring Plan procedures to assure they pass the legal requirements test and the Project is in compliance with all Federal, State and local regulations.

- **Regulatory Compliance**

RCE reviewed the environmental compliance procedures described in the Project Description/Monitoring Plan, the Waste Connections Environmental Policies and Procedures, the Attestation of Regulatory Compliance signed by the Senior Vice President of NEML1, LLC on July 13, 2010, Title V application, the Solid Waste Management permit and Water Pollution Control permit for evidence that the Project was in compliance with all environmental and regulatory requirements. During RCE's review there was no evidence of non-compliance found, and the procedures for ensuring regulatory compliance in the Project Description/Monitoring Plan were being properly followed.

- **Ownership of Generated Reductions**

RCE reviewed multiple contract agreements submitted by Element Markets and the completed and signed Attestation of Title signed by the Senior Vice President of NEML1, LLC on July 13, 2010 for evidence of ownership of the generated emission reductions.

The contract agreements reviewed included the Landfill Gas Collection System Financing, Development, Management and Operations agreement signed on June 17, 2008 regarding the purchase and ownership of Emission Reduction Credits between NEML1, LLC (a wholly owned company of Element Markets, LLC) and Waste Connections, Inc, the Certificate of Formation of the NEML1, LLC company and the

Limited Liability Company Agreement of NEML1, LLC. The presented evidence clearly demonstrated NEML1, LLC as the sole purchaser and owner of the emission reductions associated with the Project.

3.4 Assessment of Information System Controls

The GHG management systems were reviewed during both the site visit and the desktop review. During the site visit the majority of the GHG management systems review took place and was achieved through observing the onsite procedures and interviewing the Landfill Manager, the Landfill Gas Technician with NEML and the Element Markets Project Manager. The onsite review included an assessment of the Project data collection, processing and handling procedures, recordkeeping and data storage, the quality control and assurance procedures, Project maintenance procedures, and a field tour of the Project.

The primary Project data included the landfill gas flow, methane content, pressure and temperature of the landfill gas. A Rosemount-Emerson Model 3095MFAG Flow Meter (Rosemount) that automatically adjusts the temperature and pressure to 60 degrees F and one atmosphere, continuously monitors the landfill gas flow. The Rosemount-Emerson flow meter is located after the blower and a condensate knockout tank and the position of the flow meter is adequate to ensure laminar flow. The landfill gas flow is measured continuously and is recorded every 2 minutes via a Yokogawa digital chart recorder.

The Rosemount SN 33517 was factory calibrated on October 17, 2008 and was field inspected, cleaned and calibrated quarterly by Emerson Process Management. RCE reviewed the submitted field calibration certificates and confirmed that each quarter a successful field calibration was conducted. The last successful field calibration of the Rosemount SN 33517 was performed by Emerson Process Management on January 20, 2010. On April 15, 2010 the existing flow meter was replaced with a factory calibrated Rosemount SN 0295444. RCE reviewed the factory calibration certificate and confirmed the newly installed Rosemount flow meter was calibrated. In addition, the Landfill Manager or Field Technician inspect the flare skid daily and will perform regularly scheduled field inspections, maintenance and cleaning.

The Rosemount SN 33517 resistance temperature detector (RTD) failed on January 8, 2010 which caused inconsistent flow measurements until a technician visited the site on January 20, 2010. The site technician disengaged the RTD and the flow meter was set to assume a constant landfill gas temperature of 100 degrees F from January 20, 2010 through March 12, 2010. As a result Element Markets requested a variance from CAR for the January 8 through March 12, 2010 time period. CAR granted a variance on May 19, 2010 that specified that no Project GHG emissions could be counted between January 8 and January 20, 2010 when the RTD had failed. During the January 20 through March 12 time period "Element Markets must calculate the emission reductions using the assumption that the landfill gas maintained a constant temperature equal to the highest observed value in any of the field checks performed during that period (120 deg F)." Element Markets implemented the variance and the flow meter has since been replaced.

The gas methane content is measured approximately five days a week by either the Landfill Manager or the Field Technician using a handheld GEM 2000 gas analyzer. The gas analysis results are hand recorded into a daily field log and the Landfill Manager will also enter the

results into the LFG Carbon Management Report spreadsheet. The Field Technician also records the total landfill gas flow, temperature, pressure, electricity consumption and site inspection notes and maintenance activities onto the daily field log.

The GEM 2000 analyzer is field calibrated at least weekly against two reference gases. The field calibrations are logged manually by the gas field technician and the field calibration results are entered by the Landfill Manager into the LFG Carbon Management Report spreadsheet. During the site visit the GEM 2000 field calibration procedures and the flare skid data gathering and documenting procedures were discussed in detail. The GEM 2000 unit is also factory calibrated at least annually at a Landtec laboratory. While the GEM unit is being calibrated the Project will use a rented calibrated GEM unit from either Landtec or from another Waste Connections Landfill. Element Markets provided the GEM 2000 Landtec calibration certificates for RCE's review and during the desktop review RCE determined that the GEM unit was calibrated in accordance with the CAR Landfill Project Reporting Protocol 2.0 requirements.

The LFG Carbon Management Report spreadsheets are maintained by the Landfill Manager and once a month the spreadsheet is transmitted electronically to Element Markets. The Project Manager will manually transfer the methane content from the LFG Carbon Management Report spreadsheet to the Project GHG calculation spreadsheet titled NEML Emission Reductions Spreadsheet.

The flare operation is monitored continuously by a thermocouple located in the candlestick flare shroud and the temperature and operating hours are recorded every 2 minutes by the Yokogawa digital chart recorder. The flare operations are monitored by an electronic system called Guard It. In the event of a pilot flame failure, main flame failure, automatic block valve failure or flame arrester high or low temperature, the Guard It System will automatically alert three separate individuals via phone. The Guard It will attempt to automatically restart the flare three times and if the flare cannot be restarted the system will automatically shut down and eliminate flow to flare.

The Yokogawa instrument continuously collects and records the flow meter and thermocouple raw data every 2 minutes onsite to a compact 512 MB flash drive. The Yokogawa is directly connected via a phone line to the Element Markets Houston office. The Houston office will export daily DDS files directly from the Yokogawa using a software system called the DAQ Explorer. The DDS files are converted into text files that are stored in the Element Markets database system. The raw data from the text files are then put into an Excel file NEML Raw Data for Calculations to adjust flow totals to net out low temperature readings below 500 degrees Fahrenheit. The raw flow data from the NEML Raw Data for Calculations are then entered into the NEML Emission Reductions Spreadsheet and used to generate the emission reductions.

The Project Design Document/Monitoring Plan was reviewed and RCE determined that Project Design Document/Monitoring Plan clearly and thoroughly described the Project activities and included all requirements of the Landfill Project Reporting Protocol 2.0. All Project records kept by NEML and Element Markets are kept a minimum of ten years from when the information is first generated or seven years after the last verification.

3.5 Assessment of GHG Emissions Reductions Calculations

The emission reduction calculation assessment included the review of Project assumptions, raw data inputs, and accuracy of calculations. RCE first assessed the completeness of the raw data and how the data are transferred to the calculation spreadsheet. Next the formulas and raw data inputs were reviewed for accuracy and compliance with the Landfill Project Reporting Protocol 2.0. Lastly, RCE recalculated the GHG emissions and reductions and compared the results to Project calculations to determine if the GHG emissions were materially correct.

During the site visit RCE reviewed a risk-based sample of the daily field logs and assessed their completeness, consistency and accuracy. RCE compared the selected daily field logs to the NEML Emission Reductions Spreadsheet to check for completeness and transposing errors of the landfill gas methane content. No errors were found during the review of the daily field logs or the comparison of the field logs to the NEML Emission Reductions Spreadsheet.

During the desktop review raw Project flow data from the NEML Raw Data for Calculations spreadsheet were compared to the gas flow volumes and temperature readings recorded in the NEML Emission Reductions Spreadsheet. The fossil fuel use and electricity use raw data from the invoices and receipts were also compared to the numbers used in the GHG emissions calculations. RCE sampled approximately 55% percent of the raw Project data, and the selected samples review consisted of data transcription tests, data completeness, spreadsheet functionality and accuracy.

Within the NEML Raw Data for Calculations spreadsheet the incremental flare flow adjusted for low temperature and turbulent flow by voiding the flow for any given 2 minute period when the flare temperature is below the threshold temperature of 500 deg F and/or when the flow is above 700scfm for data collected prior to the well field expansion and 1400scfm post the well field expansion. These data are then considered corrected and are aggregated into daily totals. The daily totals are then transferred to the NEML Emission Reductions Spreadsheet.

In the NEML Emission Reductions Spreadsheet the daily gas flows are calculated by summing the flare flow for each seven day period to produce a weekly total. The volume of methane destroyed per week is then calculated by multiplying the weekly flow by the average weekly methane concentration.

The emission reductions between January 1 and March 12, 2010 were adjusted by Element Markets to account for the variance granted by CAR. Between January 8 and January 20, 2010 the landfill gas flows were deleted out of the final GHG calculations and no emission reductions were claimed for the time period. The landfill gas flows between January 20 and March 12, 2010 were adjusted from 100 degrees F to the more conservative 120 degrees F as specified in the variance. RCE sampled 100% of the data where the variance was implemented to ensure the variance was correctly applied and the emission reductions were adjusted accurately. RCE found no errors in the variance implementation.

The Project GHG emission and GHG reduction calculations were reviewed for compliance to the CAR Landfill Project Reporting Protocol 2.0 calculation methodologies demonstrated in equations 5.1, 5.2 5.3 and 5.4 of the protocol. Since the Project destroyed landfill gas prior to

the Project implementation the pre-project emission reductions were deducted. As the passive flare was down prior to the project installation, no monitoring of the flow data occurred. To estimate the non-qualifying device pre-project emission reductions Element Markets used the pre-project passive flare's maximum flow rate of 25 scf/m in accordance to the manufacturer's specifications. The estimation method is conservative and is in accordance with table 6.1 of the Landfill Reporting Protocol 2.0. Element Markets provided as evidence a SHAW LFG Specialties technical data sheet for the passive vent flare that supported the flare's maximum flow rate of 25 scf/m.

A 96 percent destruction efficiency was assigned to the Project's combustion device and applied accordingly in emission reduction calculations. Because the landfill does not have a synthetic liner, a 10 percent discount is applied to the baseline scenario for bacterial oxidation of methane under the cap. Also a 10 percent discount was applied due to the uncertainty associated with weekly versus continuous gas analysis readings. RCE examined 100 percent of the Project calculation methods and compared them to the protocol.

Weekly risk-based samples from the months of June through December of 2009 and weekly samples from January and April of 2010 were selected to recalculate the monthly CH₄ destroyed by the Project. Since the volume of gas flow metered by the Thermal Instruments flow meter is recorded at a temperature of 60 degrees F and one atmosphere, the flow readings for all weeks other than the weeks covered by the variance did not need to be adjusted to a standard temperature and pressure of 60 degrees F and one atmosphere per the Protocol's requirement.

As there were no missing data and all calibration tests were verified to be within a five percent margin of error no discount factor was applied to account for uncertainties. The net amount of methane destroyed by the Project was calculated per week, then summed for the reporting period total and converted into CO₂ equivalents (CO₂e). Project emissions from NEML consisted of indirect emissions of CO₂ from electricity consumption and direct emissions of CO₂ from the combustion of propane to assist the flare and the diesel Kubota 4x4 vehicle.

The Project emissions were calculated from the product of activity data multiplied by an appropriate emission factor. The total Project GHG reductions in CO₂e were calculated by subtracting the Project emissions from the net amount of methane destroyed by the Project in CO₂e. RCE found no material misstatements in the final Project GHG reductions calculations and results.

To assess the trend in the Project emission reductions RCE compared the final emission reductions for May 1, 2009 through April 30, 2010 to the emission reductions claimed during November 5, 2008 through April 30, 2009. RCE quantified the average monthly emission reductions per reporting period and reviewed the trend in the monthly reductions between the reporting periods. The comparison indicated a growth trend in the average monthly emission reductions from the first reporting period to the fourth reporting period. There were significant increases in the average monthly emission reductions in reporting periods 2 and 4 of 38.2% and 11.1%, respectively. The emission reductions from each reporting period are summarized in the **Table 3**.

Table 3 – Summary of the Yearly Emission Reductions

Reporting Period	1	2	3	4
Reporting Period Dates	Nov 5, 2008 - Dec 31, 2008	Jan 1, 2009 - April 30, 2009	May 1, 2009 - Dec 31, 2009	January 1, 2010 - April 30, 2010
Months	2	4	8	4
Emission Reductions (metric tons CO ₂ e)	6,212	17,175	37,267	20,700
Emission Reductions Monthly Average (metric tons CO ₂ e)	3,106	4,293	4,658	5,175
Percent Increase per Month Average		38.2%	8.5%	11.1%

The primary reason for the increase in the average monthly emission reductions from the first reporting period to the second appears to be due to the non-continuous operation of the Project when it first came online. According to the Project developer the gas collection and control system had periods of downtime during the first few months while the landfill operators worked out issues with the system which resulted in low emission reductions. As time progressed the landfill operators were able to improve the functioning of the system and increase the gas collection while decreasing the downtime, thus leading to increased emission reductions in the second and third reporting periods

Despite the variance implementation in 2010, the monthly average emission reductions rose again in fourth reporting period. The emissions during the fourth reporting period rose by 11.1% over reporting period 3. The cause of the increase is primarily due to the well field expansion on February 19, 2010.

During the site visit RCE was informed of a well field expansion that occurred between November 17 and 18, 2009. The LFG collection system expansion added 8 additional vertical wells and began to collect landfill gas on February 19, 2010. A tour of the well field was conducted during the site visit where RCE viewed the newly installed gas wells. During the desktop review RCE also examined the Gas Proposed System As-Built New Wells map developed by Civil Design Solutions, Inc., the Expansion as Built Map, the Expansion Drilling Log and the Expansion Certificate of Completion. Based upon the information obtained during the site visit and the reviewed documents, RCE determined that sufficient evidence was provided to attribute the rise in emission reductions in 2010 to the well field expansion.

4.0 Verification Results

Element Markets provided sufficient evidence and good documentation of its emission estimates, data collection procedures and monitoring and quality control procedures. The verification process focused on verifying the emissions estimates and the source data used by Element Markets to quantify the emissions reductions in accordance with the CAR Landfill Project Reporting Protocol 2.0. The following is a summary of the verification results.

The Project proponents reported 37,267.53 metric tons CO₂e in 2009 and 20,700.45 metric tons of CO₂e in 2010 as per the information provided in the NEML Emission Reductions Spreadsheet dated June 1, 2010. During the verification, RCE identified some material misstatements that necessitated corrective actions to NEML Emission Reductions Spreadsheet and the Project Design Document/Monitoring Plan. Minor transcription errors and non-material misstatements were also identified during the verification.

Element Markets corrected all the identified material and non-material misstatements and RCE's review of the final GHG assertion revealed no material misstatements. The verified emission reductions are listed in **Tables 4, 5, and 6**.

Table 4 - Emission Reductions Verified for May 1, 2009 through December 31, 2009

Emissions Verified	CO₂e (metric tons)
Baseline Emissions	37,319.23
Project Emissions	51.70
Emission Reductions	37,267.53

Table 5 - Emission Reductions Verified for January 1, 2010 through April 30, 2010

Emissions Verified	CO₂e (metric tons)
Baseline Emissions	20,719.16
Project Emissions	18.71
Emission Reductions	20,700.45

Table 6 - Total Emission Reductions Verified for May 1, 2009 through April 30, 2010

Emissions Verified	CO₂e (metric tons)
Total Emission Reductions	57,967.98

4.1 Findings Overview

During the verification process, RCE made requests for Clarifications, Corrective Actions and supplemental documentation to complete the verification. According to RCE's verification procedures all material Corrective Actions were addressed by Element Markets before a positive verification opinion was submitted. The details of the requests for corrective actions and clarifications are documented in the RCE Listing of Findings provided to CAR and the Project developer.

5.0 Verification Opinion

RCE conducted a risk-based analysis of the Northeast Mississippi Landfill project (“Project”) GHG assertion where RCE performed a strategic review of the Project data and evidence. Based upon the processes and procedures and the evidence collected, RCE concludes with a reasonable level of assurance that the Project emission reductions resulting from the capture and destruction of landfill gas during the reporting period May 1, 2009 through April 30, 2010 can be considered:

- in conformance with the CAR Landfill Project Reporting Protocol 2.0 standards
- without material discrepancy, and
- verified to the reasonable level of assurance of 95 percent.

The verified Emission reduction CRTs are listed in the **Table 7** and **Table 8**.

Table 7 - Emission Reductions Verified for May 1, 2009 through December 31, 2009

Emissions Verified	CO ₂ e (metric tons)
Emission Reductions	37,267

Table 8 - Emission Reductions Verified for January 1, 2010 through April 30, 2010

Emissions Verified	CO ₂ e (metric tons)
Emission Reductions	20,700

Lead Verifier Signature



Sally Phipps

Independent Internal Reviewer Signature



Bonny Crews