



## Landfill Project Protocol Version 1.0 ERRATA AND CLARIFICATIONS

The Climate Action Reserve (“Reserve”) published its Landfill Project Reporting Protocol, Version 1.0 (“LPP V1.0”) in November 2007. While the Reserve intends for the LPP V1.0 to be a complete, transparent document, it recognizes that correction of errors and clarifications will be necessary as the protocol is implemented and issues are identified. This document is an official record of all errata and clarifications applicable to the LPP V1.0.<sup>1</sup>

Per the Reserve’s Program Manual, both errata and clarifications are considered effective on the date they are first posted on the Reserve website. The effective date of each erratum or clarification is clearly designated below. All listed and registered LPP projects must incorporate and adhere to these errata and clarifications when they undergo verification. The Reserve will incorporate both errata and clarifications into future versions of the LPP.

All project developers and verification bodies must refer to this document to ensure that the most current guidance is adhered to in project design and verification. Verification bodies shall refer to this document immediately prior to uploading any Verification Opinion to assure all issues are properly addressed and incorporated into verification activities.

If you have any questions about the updates or clarifications in this document, please contact Policy at: [policy@climateactionreserve.org](mailto:policy@climateactionreserve.org) or (213) 891-1444 x4.

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<sup>1</sup> See Section 4.3.4 of the Climate Action Reserve Program Manual (March 2010) for an explanation of the Reserve’s policies on protocol errata and clarifications. “Errata” are issued to correct typographical errors. “Clarifications” are issued to ensure consistent interpretation and application of the protocol. For document management and program implementation purposes, both errata and clarifications to the LPP are contained in this single document.

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## Errata

### 1. Attestations

**Effective Date:** June 25, 2010

**Section:** III (Eligibility Rules, The Regulatory Test)

**Context:** Beginning on page 5, The Regulatory Test in the LPP requires that landfill projects are neither implemented as a result of any legal requirement, nor in violation of any compliance obligations. The Reserve has subsequently divided this test into the Legal Requirement Test and the Regulatory Compliance requirement, and developed the Attestation of Voluntary Implementation and the Attestation of Regulatory Compliance, respectively, to help meet the requirements of these tests.

**Clarification:** The Regulatory Test requires execution of the Attestation of Voluntary Implementation and the Attestation of Regulatory Compliance.

### 2. Equation 1: Project GHG Emissions Reductions

**Effective Date:** June 25, 2010

**Section:** V (GHG Reductions Calculation Methods)

**Context:** Equation 1 on page 15 contains an error relating to the term “DF”. As written, Equation 1 states:

$$ER_y = [(CH_4 \text{ Dest}_{PR}) * 21 * OX] - FFCO_2 - ELCO_2 - EROI_{\text{discount}} - \mathbf{DF}$$

Where DF = discount factor to account for uncertainties associated with the project monitoring equipment. Either 0, 0.75, 0.80, 0.85, 0.90, 0.95 (see section VI Project Monitoring). Equal to **zero** if using continuous methane monitor with no missing data and all calibration tests are within a 5% margin of error.

**Correction:** Equation 1 shall be corrected to read as follows:

$$ER_y = [(CH_4 \text{ Dest}_{PR}) * 21 * \mathbf{DF} * OX] - FFCO_2 - ELCO_2 - EROI_{\text{discount}}$$

Where DF = discount factor to account for uncertainties associated with the project monitoring equipment. Either **1**, 0.75, 0.80, 0.85, 0.90, 0.95 (see section VI Project Monitoring). Equal to **one** if using continuous methane monitor with no missing data and all calibration tests are within a 5% margin of error.

### 3. Reporting Cycle

**Effective Date:** June 25, 2010

**Section:** VII (Reporting Parameters)

**Context:** The Reporting Cycle described on page 28 of U.S. LPP V1.0 reads: “project developers report GHG reductions associated with installing a landfill gas collection and combustion system that occurred the preceding year. In keeping with the reporting rules of the California Registry’s General Reporting Protocol, the reporting deadline for project developers is August 31 the year following the reduction year, and the verification deadline is December 31.” The Climate Action Reserve has modified its reporting cycle rules, and no longer requires that reporting be conducted in accordance with calendar deadlines.

**Correction:** The reporting cycle for U.S. LPP V1.0 shall be defined as follows: “Project developers must report GHG reductions resulting from project activities during each reporting period. Although projects must be verified annually at a minimum, the Reserve will accept verified emission reduction reports on a sub-annual basis, should the project developer choose to have a sub-annual reporting period and verification schedule (e.g. quarterly or semi-annually). A reporting period cannot exceed 12 months, and no more than 12 months of emission reductions can be verified at once, except during a project’s first verification, which may include historical emission reductions from prior years.”

## Clarifications

### 1. Data Substitution

**Effective Date:** June 25, 2010

**Section:** VI (Project Monitoring)

**Context:** For instances where project data is missing due to equipment failure, the protocol allows data substitution methods to be employed as contained in the U.S. EPA Acid Rain Program (40 CFR 75.33), and an additional 5% discount applied. In practice, this methodology has proven difficult to interpret and execute in the context of methane projects. Accordingly, the following clarification shall supersede the language in the protocol.

**Clarification:** This guidance shall be used to calculate emission reductions when data integrity has been compromised either due to missing data points or corrupt data. No data substitution is permissible for equipment such as thermocouples, which monitor the proper functioning of destruction devices. Rather, the methodologies presented below are to be used only for the methane concentration and flow metering parameters.

The Reserve expects that projects will have continuous, uninterrupted data for the entire verification period. However, the Reserve recognizes that unexpected events or occurrences may result in brief data gaps.

The following data substitution methodology may be used only for flow and methane concentration data gaps that are discrete, limited, non-chronic, and due to unforeseen circumstances. Data substitution can only be applied to methane concentration *or* flow readings, but not both simultaneously. If data is missing for both parameters, no reductions can be credited.

Further, substitution may only occur when two other monitored parameters corroborate proper functioning of the destruction device and system operation within normal ranges. These two parameters must be demonstrated as follows:

1. Proper functioning can be evidenced by thermocouple readings for flares, energy output engines, etc.
2. For methane concentration substitution, flow rates during the data gap must be consistent with normal operation.
3. For flow substitution, methane concentration rates during the data gap must be consistent with normal operations.

If corroborating parameters fail to demonstrate any of these requirements, no substitution may be employed. If the requirements above can be met, the following substitution methodology maybe applied:

Duration of Missing Data	Substitution Methodology
Less than six hours	Use the average of the four hours immediately before and following the outage
Six to 24 hours	Use the 90% lower or upper confidence limit of the 24 hours prior to and after the outage, whichever results in greater conservativeness
One to seven days	Use the 95% lower or upper confidence limit of the 72 hours prior to and after the outage, whichever results in greater conservativeness
Greater than one week	No data may be substituted and no credits may be generated

The lower confidence limit should be used for both methane concentration and flow readings for landfill projects, as this will provide the greatest conservativeness.

For weekly measured methane concentration, the lowest measurement before and the measurement after must be used. This substitution may only be used to substitute data for a one missing weekly measurement.

## 2. Failed Calibration

**Effective Date:** June 25, 2010

**Section:** VI (Project Monitoring)

**Context:** For instances where a calibration has been failed, the protocol allows data substitution methods to be employed as contained in the U.S. EPA Acid Rain Program (40 CFR 75.33), and an additional 5% discount applied. In practice, this methodology has proven difficult to interpret and execute in the context of methane projects. Accordingly, the following clarification shall supersede the language in the protocol.

**Clarification:** For the interval between the last successful field check or calibration and any calibration event confirming accuracy below the +/- 5% threshold, all data from that meter or analyzer must be scaled according to the following procedure. These adjustments must be made for the entire period from the last successful field check until such time as the meter is properly calibrated.

- For calibrations that indicate under-reporting (lower flow rates or lower methane concentration), the metered values must be used without correction.
- For calibrations that indicate over-reporting (higher flow rates or higher methane concentration), the metered values must be adjusted based on the greatest calibration drift recorded at the time of calibration.