



Organic Waste Composting Project Protocol Version 1.0

ERRATA AND CLARIFICATIONS

The Climate Action Reserve (Reserve) published its Organic Waste Composting Project Protocol Version 1.0 (OWC V1.0) in June 2010. While the Reserve intends for the OWC 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 OWC V1.0.¹

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 OWC 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 OWC.

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 or (213) 891-1444 x3.

¹ See Section 4.3.4 of the Climate Action Reserve Program Manual 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 OWC are contained in this single document.

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Section 2

1. Clarification of the Project Definition (CLARIFICATION – July 12, 2011)

Section: 2.2 (Project Definition)

Context: On page 4 of OWC V1.0, the protocol states that “the GHG reduction project is defined as the diversion of one or more eligible waste streams to an aerobic composting facility ...” The intent of this provision is to require that each project be tied to one, and only one, composting facility. The project composting facility must aerobically compost at least one eligible waste stream to initially meet the project definition. During a project’s crediting period, a project facility may compost numerous different eligible and ineligible waste streams, and it is expected that the sourcing of eligible waste will be a dynamic process.

Clarification: A composting facility can have one, and only one, OWC project associated with the particular facility. A composting facility meets the GHG project definition if the facility composts eligible waste in an aerobic composting system that meets the Best Management Practices (BMP) requirements as specified in Section 2.2. See Clarification 2 (below) for the definition of a composting facility.

2. Definition of a Composting Facility (CLARIFICATION – July 12, 2011)

Section: 2.2 (Project Definition), 9.0 (Glossary of Terms)

Context: On page 4 of OWC V1.0, the project definition references an ‘aerobic composting facility.’ While the intent of the language in the GHG project definition is to require that each OWC project be located at a single composting facility, the protocol does not provide a clear definition of an ‘aerobic composting facility.’

Clarification: For the purposes of the OWC Project Protocol, an aerobic composting facility is defined as: a facility involved in the aerobic processing of biodegradable organic solid waste components to produce a mature product for beneficial use. A composting facility typically includes waste collection, storage, and mixing areas, active composting areas, compost curing areas, and storm water drainage systems. A composting facility can be stand-alone, or may be incorporated into an existing landfill facility, Material Recovery Facility (MRF) or other waste handling facility. Multiple aerobic composting technologies may be utilized at one facility.

Section 3

3. Definition of Food Soiled Paper Waste (ERRATUM – July 12, 2011)

Section: 3.4.1 (The Performance Standard Test)

Context: On page 7 of the OWC V1.0, the definition of Food Soiled Paper Waste, does not specify that the soiled paper must be co-mingled with *eligible* food waste in order to be considered an eligible waste per the protocol. In order for the Reserve to have confidence

that the soiled paper material would otherwise have been disposed at a landfill in the absence of the project, the material must be co-mingled with eligible food waste, as defined in the protocol.

Correction: The definition of Food Soiled Paper Waste shall be corrected to read: “non-recyclable paper items that are co-mingled with *eligible* food waste...”

4. Fats, Oils, and Grease (FOG) Waste (CLARIFICATION – July 12, 2011)

Section: 3.4.1 (The Performance Standard Test)

Context: The OWC performance standard section provides language defining the types of waste streams that are deemed eligible. While not specifically addressed in the text of the protocol, FOG wastes or FOG residue wastes are not considered to be municipal solid waste (MSW) food waste, and are therefore not eligible.

Clarification: Fats, oils, and greases, and any solids that are separated from FOG waste, are not an eligible waste type per OWC V1.0.

5. Non-Source Separated Grocery Store Waste (CLARIFICATION – July 12, 2011)

Section: 3.4.1 (The Performance Standard Test)

Context: On page 8 of OWC V1.0 there is guidance regarding the eligibility and documentation requirements for organic waste streams originating from grocery stores. It is not clear from this text whether these requirements are limited to source separated organics, or whether they encompass all waste streams that may contain organics from grocery stores. In some cases, organic waste from a grocery store will be managed in a stream of mixed solid waste with the assumption that they will be landfilled, but the organics are subsequently sorted out at a different facility and diverted from landfill. The intention of this section was to target only source separated organics from grocery stores.

Clarification: The following text is to be added to the end of the second paragraph on page 8 of the OWC Project Protocol V1.0: “Food and food-soiled paper waste streams from grocery stores that are managed as a component of a mixed MSW waste stream (i.e. the food and food-soiled paper wastes are mixed with other types of inorganic waste in the same disposal container), and are not source separated, are not subject to the documentation requirements of this paragraph nor the eligibility restrictions of the previous paragraph.”

6. Local Food Waste Diversion Mandate Terminology (CLARIFICATION – July 12, 2011)

Section: 3.4.2.2 (Local Food Waste Diversion Mandates Enacted in Conjunction with a Composting Project)

Context: Section 3.4.2.2 of the OWC V1.0 provides guidance for determining the eligibility of a food waste stream should that waste originate from a municipal jurisdiction that has enacted a mandatory food waste diversion mandate or landfill ban. For a food waste mandate to be considered to be enacted in conjunction with a project, either criteria 1 or 2

on page 9 must be met by the project. The words ‘enactment’ and ‘passage into law’ used in criteria 1 and criteria 2 were meant to be synonymous; however it is possible that the words could be interpreted to represent different points in time. Therefore, the language in criteria 1 shall be changed to be consistent with criteria 2.

Clarification: Criteria 1 on page 9 of Section 3.4.2.2 shall be clarified to read “The project composting the local food waste stream has an operational start date prior to, but no more than 5 years before, the date that the food waste diversion mandate is *passed into law* by the local jurisdiction.”

Section 5

7. Using Equation 5.5 for Quarterly Hand-Sampling (CLARIFICATION – July 12, 2011)

Section: 5.1.1 (Determining the Weight of Eligible Wastes)

Context: Equation 5.5 of Section 5.1.1 must be used to quantify the total weight of food waste and soiled paper waste from each eligible waste stream that is composted by the project during the reporting period. In OWC V1.0, Equation 5.5 is constructed such that, for each waste stream, the equation is applied once to the total weight of waste composted over the entire reporting period. This approach works if the project is using a referenced food waste or soiled paper waste fraction ($F_{FW,S}$, and $F_{SP,S}$ respectively) that does not change over the course of the reporting period. Projects that use quarterly hand sampling to determine the food waste and soiled paper waste fractions for a specific waste stream will have a quarterly food waste and soiled paper waste fraction that will vary each quarter during the reporting period.

Clarification: If using quarterly hand sampling to determine the fraction of food waste and soiled paper in a particular eligible waste stream, Equation 5.5 shall be applied on a quarterly basis, as opposed to once for the entire reporting period. The quarterly weights of eligible food and soiled paper waste from the waste stream shall then be summed over the reporting period.

8. Non-Source Separated Waste Sampling Requirements (CLARIFICATION – February 3, 2012)

Section: 5.1.1.1 (Determining the Fraction of Eligible Waste in a Mixed MSW Waste Stream (Non-Source Separated))

Context: The protocol does not define the requirements for determining eligible waste composition factors for non-source separated waste streams consisting of the organic residues, or ‘fines,’ from mixed waste Material Recovery Facilities (MRFs). Because MRF fines are difficult to hand-sort, a site-specific waste sampling methodology has been added to this section to ensure that the methodology for sampling MRF fines is practical and standardized.

Clarification: The following shall replace the language in Section 5.1.1.1:

If a composting project is receiving a mixed MSW stream, the weight of food waste shall be determined by assuming that food waste is 18 percent of the total measured weight of the mixed MSW.³⁰ Alternatively, a project developer may elect to use a food waste composition factor other than 18 percent based on state, regional or municipal published waste characterization studies. The waste characterization study must have been conducted no more than five years prior to the current project reporting year. Alternatively, for organic residues (fines) from non-SSO (mixed) Material Recovery Facilities (MRFs), project developers may conduct site-specific waste sampling for the MSW fines composted at the facility according to the following procedure:

- All hand-sorting events shall use at least a 100 lb sample of the organic fine material that has recently passed through the final stage of the screening process
- Material particles larger than approximately two inches in diameter shall be physically sorted or screened, and weighed. The remaining fines fraction shall be collected and weighed in its entirety. The remaining fines must be mixed and shoveled into a radially symmetrical pile, and divided into quarters using perpendicular boards. One quarter of the remaining fines must be collected and chosen for hand sampling, and used as a basis for the composition of all fines in that sample
- The mixed waste quarter-sample shall be sorted into the following categories: food waste, soiled paper, other ineligible material
- Each sampling event must quantify and record the proportional weight of food waste and of soiled paper as compared to the total weight of the sample
- Each mixed MSW MRF fines stream shall have a minimum of eight sampling events (two per quarter) for the first year that the stream is composted at the facility, followed by four sampling events every year thereafter for each mixed MSW stream (one per quarter)
- To determine the characterization for the 100 lb (or greater) sample, the project developer must recombine the composition result analytically and determine the weighted average based on the relative amounts of fines, as well as the larger (greater than two inch) particles sampled. In this way, the project developer will quantify the mean food waste proportional weight ($F_{FW,S}$) and soiled paper proportional weight ($F_{SP,S}$) for each quarter of the calendar year. The $F_{FW,S}$ and $F_{SP,S}$ values shall then be used in Equation 5.5 for MRF fines waste streams. See equations below
- Photo documentation and calculations must be recorded and retained for verification purposes, clearly showing the waste stream from which the sample is taken, the waste sample itself, the quartered sample pre-sorting, and the separated categories of waste following the hand sorting

Equation to determine fraction of food waste ($F_{FW,S}$) in the MRF fines waste stream:

$$F_{FW,S} = \frac{(W_{HS,lbs} \times F_{FW,HS}) + (W_{PR,lbs} \times F_{FW,QS})}{W_{Sample,lbs}}$$

Where,		<u>Units</u>	
$F_{FW,S}$	=	The fraction of food waste in MRF fines waste stream	Fraction
$W_{HS,lbs}$	=	The weight of sample taken in large (>2") preliminary hand sort	lbs
$F_{FW,HS}$	=	The fraction of food waste in large (>2") preliminary hand sort	Fraction
$W_{PR,lbs}$	=	The weight of total sample after large (>2") particles removed	lbs
$F_{FW,QS}$	=	The fraction of food waste in quarter sample	Fraction
$W_{Sample,lbs}$	=	The weight of total sample (100 lb minimum)	lbs

Equation to determine the fraction of soiled paper waste ($F_{SP,S}$) in the MRF fines waste stream:

$$F_{SP,S} = \frac{(W_{HS,lbs} \times F_{SP,HS}) + (W_{PR,lbs} \times F_{SP,QS})}{W_{Sample,lbs}}$$

Where,		<u>Units</u>	
$F_{SP,S}$	=	The fraction of soiled paper in MRF fines waste stream	Fraction
$W_{HS,lbs}$	=	The weight of sample taken in large (>2") preliminary hand sort	lbs
$F_{SP,HS}$	=	The fraction of soiled paper in large (>2") preliminary hand sort	Fraction
$W_{PR,lbs}$	=	The weight of total sample after large (>2") particles removed	lbs
$F_{SP,QS}$	=	The fraction of soiled paper in quarter sample	Fraction
$W_{Sample,lbs}$	=	The weight of total sample (100 lb minimum)	lbs

9. Waste Stream Hand Sorting Requirements (ERRATUM – July 12, 2011)

Section: 5.1.1.2.1 (Residential SSO Waste Stream Characterization)

Context: The requirements for performing waste sampling of source separated organics (SSO) waste streams are provided in section 5.1.1.2.1 of OWC V1.0. According to bullet point number 5 on page 23, hand sorting events must occur at least twice per quarter during the first year that the project is composting the SSO waste stream, and once per quarter every year thereafter. Bullet point 4 on page 23 is extraneous and repetitive, and could cause confusion regarding the sampling schedule.

Correction: Bullet point 4 under Section 5.1.1.2.1 on page 23 is repetitive and shall be deleted. Bullet point 5 states the required frequency for hand sampling of SSO waste streams.

10. Inclusion of On-Site Mobile Emissions (CLARIFICATION – July 12, 2011)

Section: 5.2.1 (Project Emissions from On-Site Fossil Fuel and Grid Delivered Electricity)

Context: Projects must account for all CO₂ emissions from on-site fossil fuel combustion and grid electricity for all equipment used for project activity. This includes emissions from on-site stationary combustion and mobile combustion equipment, but only stationary combustion sources are currently referenced in the section header.

Clarification: The first header under Section 5.2.1 shall be clarified to read: “On-Site Stationary *and Mobile* Combustion and Grid Electricity.”

11. Carbonaceous Cover Material Application as an Optional Process Control (CLARIFICATION – July 12, 2011)

Section: 5.2.2.1 (CH₄ Emissions from the Composting Treatment System), and 6.4.1 (Monitoring Requirements for Application of Finished Compost to Pile/Windrow Surface and Synthetic Covers)

Context: OWC V1.0 recognizes the practice of covering active compost piles with finished compost or other high carbon (carbonaceous) materials as one of the Optional Process Controls (OPCs) a project may use to achieve a higher degree of methane oxidation. In Table 5.2 on page 29, and in the text of Section 6.4.1 on page 34, the protocol fails to specify that the application of ‘other carbonaceous material,’ as defined in footnote 6 on page 4, is an acceptable OPC practice.

Clarification: In Table 5.2, the term “or other carbonaceous material” shall be inserted following the words “...covered with 15cm or more of finished compost.” In Section 6.4.1, the words “or other carbonaceous material” shall be inserted into the text following the words “finished compost.” These changes are intended to clarify that a project can apply finished compost *or other carbonaceous materials* to the active compost piles in order to increase methane oxidization as an Optional Process Control.

Section 6

12. Daily Pile/Windrow Temperature Measurements (CLARIFICATION – July 12, 2011)

Section: 6.3.1 (Time, Temperature, and Turning Frequency BMP Monitoring)

Context: In Section 6.3.1 on page 33, the requirements for monitoring daily pile/windrow temperature specify that the temperature shall be monitored and recorded daily “...starting at the beginning of the active composting cycle until the temperature drops below 55°C or more after reaching and maintaining a temperature of 55°C or more for the required length of time.” Interpretation of this requirement may lead to monitoring unnecessary data both prior to and after the windrow/pile has achieved and maintained 55°C for the required length of time. Daily temperature measurement need only be conducted to demonstrate that the pile/windrow achieved and maintained 55°C for the required length of time.

Clarification: The first bullet point under Section 6.3.1 on page 33 shall be clarified to read: “At a minimum, temperature measurements shall be monitored and recorded daily during the period that the temperature is required to be maintained at or above 55°C.”

13. Meeting the 90% Compliance Rate for Best Management Practices (CLARIFICATION – July 12, 2011)

Section: 6.3.1 (Time, Temperature, and Turning Frequency BMP Requirements)

Context: In order for a composting facility to meet the definition of a project according to OWC V1.0, the facility must compost eligible waste in a system that complies with the Best Management Practices (BMPs) specified in Section 2.1. Section 6.3.1 provides the monitoring requirements for monitoring the Time, Temperature, and Turning Frequency (TTT) BMP requirements necessary to meet the project definition. On page 33 of Section 6.3.1, the protocol states that the temperature and turning frequency data records shall be used to establish the rate of compliance with the TTT requirements over the reporting period, and that the project facility must demonstrate that, at a minimum, 90% of the volume of eligible waste composted at the facility was composted in an active composting system that met the BMP requirements for TTT. The language in the protocol is not specific regarding how a facility would meet the 90% compliance rate.

Clarification: In Section 6.3.1 on page 33, the last paragraph shall be amended to contain the following clarifying language: “The project must have the records to demonstrate the total number of 150 ft. windrow sections and/or 200 cubic yard piles that were formed over the reporting period, and must demonstrate that at least 90% of the windrow sections and/or piles were composted in compliance with the relevant Time, Temperature, and Turning Frequency requirements.”

14. Baseline Discount for Failure of the 90% Compliance Rate for Best Management Practices (CLARIFICATION – July 12, 2011)

Section: 6.3.1 (Time, Temperature, and Turning Frequency BMP Requirements)

Context: In order for a composting facility to meet the definition of a project according to OWC V1.0, the facility must compost eligible waste in a system that complies with the Best Management Practices (BMPs) specified in Section 2.1. Section 6.3.1 provides the monitoring requirements for monitoring the Time, Temperature, and Turning Frequency (TTT) BMP requirements that must be met in order for the facility to meet the project definition. While clarification 12 above provides additional guidance for determining the rate of compliance with the TTT requirements, the protocol lacks sufficient guidance for addressing the implications for a project if the project is missing data or has data that indicates that the 90% compliance rate for the TTT requirements was not met. In the instance where the compliance rate is less than 90%, the actual compliance rate for the composting project during the reporting period shall be used to scale the baseline emission calculation. This is conservative and ensures that the Reserve is providing credit only for the portion of the food waste that is composted in a system that was demonstrated to have met the TTT requirements.

Clarification: In Section 6.3.1 on page 33, a final paragraph shall be inserted with the following language: “Should a project fail to achieve a 90% compliance rate due to missing or inadequate data, or due to failure of a portion the system to meet the Time, Temperature,

and Turning Frequency BMP requirements, the project shall discount the baseline calculation by a percentage equal to the actual rate of compliance as demonstrated by the available data over the reporting period in question.”