

Environmental Protection Agency

§ 98.465

concentration or DOC_x of the similar waste stream using the applicable procedures in paragraphs (b)(1) through (4) of this section.

(2) If you cannot identify a similar waste stream to the waste stream that was historically managed in the landfill, you may determine the volatile solids concentration or DOC_x of the historically managed waste stream using process knowledge. You must document the basis for the volatile solids concentration or DOC_x value as determined through process knowledge.

(d) For landfills with gas collection systems, operate, maintain, and calibrate a gas composition monitor capable of measuring the concentration of CH₄ according to the requirements specified at §98.344(b).

(e) For landfills with gas collection systems, install, operate, maintain, and calibrate a gas flow meter capable of measuring the volumetric flow rate of the recovered landfill gas according to the requirements specified at §98.344(c).

(f) For landfills with gas collection systems, all temperature, pressure, and if applicable, moisture content monitors must be calibrated using the pro-

cedures and frequencies specified by the manufacturer.

(g) For landfills electing to measure the fraction by volume of CH₄ in landfill gas (F), follow the requirements in paragraphs (g)(1) and (g)(2) of this section.

(1) Use a gas composition monitor capable of measuring the concentration of CH₄ on a dry basis that is properly operated, calibrated, and maintained according to the requirements specified at §98.344(b). You must either use a gas composition monitor that is also capable of measuring the O₂ concentration correcting for excess (infiltration) air or you must operate, maintain, and calibrate a second monitor capable of measuring the O₂ concentration on a dry basis according to the manufacturer's specifications.

(2) Use Equation TT-9 of this section to correct the measured CH₄ concentration to 0% oxygen. If multiple CH₄ concentration measurements are made during the reporting year, determine F separately for each measurement made during the reporting year, and use the results to determine the arithmetic average value of F for use in Equation TT-1 of this part.

$$F = \left(\frac{C_{CH_4}}{100\%} \right) \times \left[\frac{20.9_c}{(20.9 - \%O_2)} \right] \quad (\text{Eq. TT-9})$$

Where:

F = Fraction by volume of CH₄ in landfill gas (fraction, dry basis, corrected to 0% oxygen).

C_{CH₄} = Measured CH₄ concentration in landfill gas (volume %, dry basis).

20.9_c = Defined O₂ correction basis, (volume %, dry basis).

20.9 = O₂ concentration in air (volume %, dry basis).

%O₂ = Measured O₂ concentration in landfill gas (volume %, dry basis).

(h) The facility shall document the procedures used to ensure the accuracy of the estimates of disposal quantities and, if the industrial waste landfill has a gas collection system, gas flow rate, gas composition, temperature, pressure, and moisture content measurements. These procedures include, but

are not limited to, calibration of weighing equipment, fuel flow meters, and other measurement devices. The estimated accuracy of measurements made with these devices shall also be recorded, and the technical basis for these estimates shall be provided.

[75 FR 39773, July 12, 2010, as amended at 76 FR 73908, Nov. 29, 2011; 77 FR 51495, Aug. 24, 2012; 78 FR 71979, Nov. 29, 2013]

§ 98.465 Procedures for estimating missing data.

(a) A complete record of all measured parameters used in the GHG emissions calculations is required. Therefore, whenever a quality-assured value of a required parameter is unavailable (*e.g.*, if a meter malfunctions during unit operation or if a required fuel sample is

not taken), a substitute data value for the missing parameter shall be used in the calculations, in accordance with paragraph (b) of this section.

(b) For industrial waste landfills with gas collection systems, follow the procedures for estimating missing data specified in § 98.345(a) and (b).

§ 98.466 Data reporting requirements.

In addition to the information required by § 98.3(c), each annual report must contain the following information for each landfill.

(a) Report the following general landfill information:

(1) A classification of the landfill as “open” (actively received waste in the reporting year) or “closed” (no longer receiving waste).

(2) The year in which the landfill first started accepting waste for disposal.

(3) The last year the landfill accepted waste (for open landfills, enter the estimated year of landfill closure).

(4) The capacity (in metric tons) of the landfill.

(5) An indication of whether leachate recirculation is used during the reporting year and its typical frequency of use over the past 10 years (*e.g.*, used several times a year for the past 10 years, used at least once a year for the past 10 years, used occasionally but not every year over the past 10 years, not used).

(b) Report the following waste characterization and modeling information:

(1) The number of waste streams (including “Other Industrial Solid Waste (not otherwise listed)” and “Inerts”) for which Equation TT-1 of this subpart is used to calculate modeled CH₄ generation.

(2) A description of each waste stream (including the types of materials in each waste stream) for which Equation TT-1 of this subpart is used to calculate modeled CH₄ generation.

(3) The fraction of CH₄ in the landfill gas, F, (volume fraction, dry basis, corrected to 0% oxygen) for the reporting year and an indication as to whether this was the default value or a value determined through measurement data.

(4) The methane correction factor (MCF) value used in the calculations. If

an MCF value other than the default of 1 is used, provide a description of the aeration system, including aeration blower capacity, the fraction of the landfill containing waste affected by the aeration, the total number of hours during the year the aeration blower was operated, and other factors used as a basis for the selected MCF value.

(5) For each waste stream, the decay rate (k) value used in the calculations.

(c) Report the following historical waste information:

(1) [Reserved]

(2) For each waste stream identified in paragraph (b) of this section, the method(s) for estimating historical waste disposal quantities and the range of years for which each method applies.

(3) For each waste stream identified in paragraph (b) of this section for which Equation TT-2 of this subpart is used, provide:

(i) The total number of years (N) for which disposal and production data are both available.

(ii) The year, the waste disposal quantity and production quantity for each year used in Equation TT-2 of this subpart to calculate the average waste disposal factor (WDF).

(iii) The average waste disposal factor (WDF) calculated for the waste stream.

(4) If Equation TT-4a of this subpart is used, provide:

(i) The value of landfill capacity (LFC).

(ii) YrData.

(iii) YrOpen.

(5) If Equation TT-4b of this subpart is used, provide:

(i) WIP (*i.e.*, the quantity of waste in-place at the start of the reporting year from design drawings or engineering estimates (metric tons) or, for closed landfills for which waste in-place quantities are not available, the landfill’s design capacity).

(ii) The cumulative quantity of waste placed in the landfill for the years for which disposal quantities are available from company record or from Equation TT-3 of this part.

(iii) YrLast.

(iv) YrOpen.

(v) NYrData.

(d) For each year of landfilling starting with the “Start Year” (S) and each