

40 C.F.R. § 98.363

Calculating GHG emissions.

(a) For all manure management system components listed in 98.360(b) except digesters, estimate the annual CH_4 emissions and sum for all the components to obtain total emissions from the manure management system for all animal types using Equation JJ-1.

$$\text{CH}_4 \text{ Emissions}_{\text{MMS}} \text{ (metric tons/yr)} = \sum_{\text{animal types}} \left[\sum_{\text{MMSC}} \left[(\text{TVS}_{\text{AT}} \times \text{VS}_{\text{MMSC}} \times (1 - \text{VS}_{\text{SS}}) \times 365 \text{ days/yr} \times (\text{B}_0)_{\text{AT}} \times \text{MCF}_{\text{MMSC}}) \times 0.662 \text{ kg CH}_4/\text{m}^3 \times 1 \text{ metric ton}/1000 \text{ kg} \right] \right] \quad (\text{Eq. JJ-2})$$

Where:

MMSC = Manure management systems component. TVS_{AT} = Total volatile solids excreted by animal type, calculated using Equation JJ-3 of this section (kg/day). VS_{MMSC} = Fraction of the total manure for each animal type that is managed in MMS component MMSC, assumed to be equivalent to the fraction of VS in each MMS component. VS_{SS} = Volatile solids removal through solid separation; if solid separation occurs prior to the MMS component, use a default value from Table JJ-4 of this section; if no solid separation occurs, this value is set to 0. $(\text{B}_0)_{\text{AT}}$ = Maximum CH_4 -producing capacity for each animal type, as specified in Table JJ-2 of this section (m CH_4 /kg VS). MCF_{MMSC} = CH_4 conversion factor for the MMS component, as specified in Table JJ-5 of this section (decimal).

$$\text{TVS}_{\text{AT}} = \text{Population}_{\text{AT}} \times \text{TAM}_{\text{AT}} \times \text{VS}_{\text{AT}}/1000 \quad (\text{Eq. JJ-3})$$

Where:

TVS_{AT} = Daily total volatile solids excreted per animal type (kg/day). $\text{Population}_{\text{AT}}$ = Average annual animal population contributing manure to the manure management system by animal type (head) (see description in § 98.363(a)(i) and (ii) below). TAM_{AT} = Typical animal mass for each animal type, using either default values in Table JJ-2 of this section or farm-specific data (kg/head). VS_{AT} = Volatile solids excretion rate for each animal type, using default values in Table JJ-2 or JJ-3 of this section (kg VS/day/1000 kg animal mass).

(1) Average annual animal populations for static populations (e.g., dairy cows, breeding swine, layers) must be estimated by performing an animal inventory or review of facility records once each reporting year.

This document is only available to subscribers. Please log in or purchase access.

[Purchase Login](#)