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§ 98.324 Monitoring and QA/QC requirements.

(a) For calendar year 2011 monitoring, the facility may submit a request to the Administrator to use one or more best available monitoring methods as listed in §98.3(d)(1)(i) through (iv). The request must be submitted no later than October 12, 2010 and must contain the information in §98.3(d)(2)(ii). To obtain approval, the request must demonstrate to the Administrator's satisfaction that it is not reasonably feasible to acquire, install, and operate a required piece of monitoring equipment by January 1, 2011. The use of best available monitoring methods will not be approved beyond December 31, 2011.

(b) For CH₄ liberated from ventilation systems, determine whether CH₄ will be monitored from each ventilation well and shaft, from a centralized monitoring point, or from a combination of the two options. Operators are allowed flexibility for aggregating emissions from more than one ventilation well or shaft, as long as emissions from all are addressed, and the methodology for calculating total emissions documented. Monitor by one of the following options:

(1) Collect quarterly or more frequent grab samples (with no fewer than 6 weeks between measurements) and make quarterly measurements of flow rate, temperature, and pressure. The sampling and measurements must be made at the same locations as MSHA inspection samples are taken, and should be taken when the mine is operating under normal conditions. You

\[
\text{CH}_4 \text{ emitted (net)} = \text{CH}_4^{\text{VTotal}} + \text{CH}_4^{\text{DTotal}} - \text{CH}_4^{\text{destroyedTotal}} \quad \text{(Eq. FF-7)}
\]

Where:
- \( \text{CH}_4^{\text{emitted (net)}} \): Quarterly \( \text{CH}_4 \) emissions from the mine (metric tons).
- \( \text{CH}_4^{\text{VTotal}} \): Quarterly sum of the \( \text{CH}_4 \) liberated from all mine ventilation monitoring points (\( \text{CH}_4 \)), calculated using Equation FF-2 of this section (metric tons).
- \( \text{CH}_4^{\text{DTotal}} \): Quarterly sum of the \( \text{CH}_4 \) liberated from all mine degasification monitoring points (\( \text{CH}_4 \)), calculated using Equation FF-4 of this section (metric tons).
- \( \text{CH}_4^{\text{destroyedTotal}} \): Quarterly sum of the measured \( \text{CH}_4 \) destroyed from all mine ventilation and degasification systems, calculated using Equation FF-6 of this section (metric tons).

\[
\text{CO}_2 = \text{CH}_4^{\text{destroyedonsite}} \ast \frac{44}{16} \quad \text{(Eq. FF-8)}
\]

Where:
- \( \text{CO}_2 \): Total quarterly \( \text{CO}_2 \) emissions from \( \text{CH}_4 \) destruction (metric tons).
- \( \text{CH}_4^{\text{destroyedonsite}} \): Quarterly sum of the \( \text{CH}_4 \) destroyed, calculated as the sum of \( \text{CH}_4 \) destroyed for each onsite, non-energy use, as calculated individually in Equation FF-5 of this section (metric tons).
- \( \frac{44}{16} \): Ratio of molecular weights of \( \text{CO}_2 \) to \( \text{CH}_4 \).
must follow MSHA sampling procedures as set forth in the MSHA Handbook entitled, General Coal Mine Inspection Procedures and Inspection Tracking System Handbook Number: PH–08–V–1, January 1, 2008 (incorporated by reference, see §98.7). You must record the date of sampling, airflow, temperature, and pressure measured, the hand-held methane and oxygen readings (percent), the bottle number of samples collected, and the location of the measurement or collection.

(2) Obtain results of the quarterly (or more frequent) testing performed by MSHA.

(3) Monitor emissions through the use of one or more continuous emission monitoring systems (CEMS). If operators use CEMS as the basis for emissions reporting, they must provide documentation on the process for using data obtained from their CEMS to estimate emissions from their mine ventilation systems.

(c) For CH\textsubscript{4} liberated at degasification systems, determine whether CH\textsubscript{4} will be monitored from each well and gob gas vent hole, from a centralized monitoring point, or from a combination of the two options. Operators are allowed flexibility for aggregating emissions from more than one well or gob gas vent hole, as long as emissions from all are addressed, and the methodology for calculating total emissions documented. Monitor both gas volume and methane concentration by one of the following two options:

(1) Monitor emissions through the use of one or more continuous emissions monitoring systems (CEMS).

(2) Collect weekly (once each calendar week, with at least three days between measurements) or more frequent samples, for all degasification wells and gob gas vent holes. Determine weekly or more frequent flow rates and methane composition from these degasification wells and gob gas vent holes. Methane composition should be determined either by submitting samples to a lab for analysis, or from the use of methanometers at the degasification well site. Follow the sampling protocols for sampling of methane emissions from ventilation shafts, as described in §98.324(b)(1).


(e) All fuel flow meters, gas composition monitors, and heating value monitors that are used to provide data for the GHG emissions calculations shall be calibrated prior to the first reporting year, using the applicable methods specified in paragraphs (e)(1) through (7) of this section. Alternatively, calibration procedures specified by the flow meter manufacturer may be used. Fuel flow meters, gas composition monitors, and heating value monitors shall be recalibrated either annually or at the minimum frequency specified by the manufacturer, whichever is more frequent. For fuel, flare, or sour gas flow meters, the operator shall operate, maintain, and calibrate the flow meter using any of the following test methods or follow the procedures specified by the flow meter manufacturer. Flow meters must meet the accuracy requirements in §98.3(i).


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§ 98.325 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 each missing value of CH₄ concentration, flow rate, temperature, and pressure for ventilation and degasification systems, the substitute data value shall be the arithmetic average of the quality-assured values of that parameter immediately preceding and immediately following the missing data incident. If, for a particular parameter, no quality-assured data are available prior to the missing data incident, the substitute data value shall be the first quality-assured value obtained after the missing data period.

§ 98.326 Data reporting requirements.

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

(a) Quarterly CH₄ liberated from each ventilation monitoring point (CH₄Vm), (metric tons CH₄).

(b) Weekly CH₄ liberated from each degasification system monitoring point (metric tons CH₄).

(c) Quarterly CH₄ destruction at each ventilation and degasification system destruction device or point of offsite transport (metric tons CH₄).

(d) Quarterly CH₄ emissions (net) from all ventilation and degasification systems (metric tons CH₄).

(e) Quarterly CO₂ emissions from on-site destruction of coal mine gas CH₄, where the gas is not a fuel input for energy generation or use (e.g., flaring) (metric tons CO₂).

(f) Quarterly volumetric flow rate for each ventilation monitoring point (scfm), date and location of each measurement, and method of measurement (quarterly sampling or continuous monitoring).

(g) Quarterly CH₄ concentration for each ventilation monitoring point, dates and locations of each measurement and method of measurement (sampling or continuous monitoring).

(h) Weekly volumetric flow used to calculate CH₄ liberated from degasification systems (scf) and method of measurement (sampling or continuous monitoring).

(i) Quarterly CEMS CH₄ concentration (%) used to calculate CH₄ liberated from degasification systems (average from daily data), or quarterly CH₄ concentration data based on results from weekly sampling data) (C).

(j) Weekly volumetric flow used to calculate CH₄ destruction for each destruction device and each point of off-site transport (scf).

(k) Weekly CH₄ concentration (%) used to calculate CH₄ destruction (C).

(l) Dates in quarterly reporting period where active ventilation of mining operations is taking place.

(m) Dates in quarterly reporting period when degasification of mining operations is taking place.

(n) Dates in quarterly reporting period when continuous monitoring equipment is not properly functioning, if applicable.