

Environmental Protection Agency

§ 98.423

from a manufacturing process or any other process.

(2) Facilities with CO₂ production wells that extract or produce a CO₂ stream for purposes of supplying CO₂ for commercial applications or that extract and maintain custody of a CO₂ stream in order to sequester or otherwise inject it underground.

(3) Importers or exporters of bulk CO₂.

(b) This source category is focused on upstream supply. It does not cover:

(1) Storage of CO₂ above ground or in geologic formations.

(2) Use of CO₂ in enhanced oil and gas recovery.

(3) Transportation or distribution of CO₂.

(4) Purification, compression, or processing of CO₂.

(5) On-site use of CO₂ captured on site.

(c) This source category does not include CO₂ imported or exported in equipment, such as fire extinguishers.

§ 98.421 Reporting threshold.

Any supplier of CO₂ who meets the requirements of § 98.2(a)(4) of subpart A of this part must report the mass of CO₂ captured, extracted, imported, or exported.

§ 98.422 GHGs to report.

(a) Mass of CO₂ captured from each production process unit.

(b) Mass of CO₂ extracted from each CO₂ production wells.

(c) Mass of CO₂ imported.

(d) Mass of CO₂ exported.

§ 98.423 Calculating CO₂ supply.

(a) Calculate the annual mass of CO₂ captured, extracted, imported, or exported through each flow meter in accordance with the procedures specified in either paragraph (a)(1) or (a)(2) of this section. If multiple flow meters are used, you shall calculate the annual mass of CO₂ for all flow meters according to the procedures specified in paragraph (a)(3) of this section.

(1) For each mass flow meter, you shall calculate quarterly the mass of CO₂ in a CO₂ stream in metric tons, prior to any subsequent purification, processing, or compressing, by multiplying the mass flow by the composition data, according to Equation PP-1 of this section. Mass flow and composition data measurements shall be made in accordance with § 98.424 of this subpart.

$$CO_{2,u} = \sum_{p=1}^4 Q_{p,u} * C_{CO_2,p,u} \quad (\text{Eq. PP-1})$$

Where:

CO_{2,u} = Annual mass of CO₂ (metric tons) through flow meter u.

C_{CO₂,p,u} = Quarterly CO₂ concentration measurement in flow for flow meter u in quarter p (wt. %CO₂).

Q_{p,u} = Quarterly mass flow rate measurement for flow meter u in quarter p (metric tons).

p = Quarter of the year.

u = Flow meter.

(2) For each volumetric flow meter, you shall calculate quarterly the mass of CO₂ in a CO₂ stream in metric tons, prior to any subsequent purification, processing, or compressing, by multiplying the volumetric flow by the concentration and density data, according to Equation PP-2 of this section. Volumetric flow, concentration and density data measurements shall be made in accordance with § 98.424 of this section.

$$CO_{2,u} = \sum_{p=1}^4 Q_p * D_p * C_{CO_2,p} \quad (\text{Eq. PP-2})$$

§ 98.424

Where:

- CO_{2,u} = Annual mass of CO₂ (metric tons) through flow meter u.
- C_{CO₂,p} = Quarterly CO₂ concentration measurement in flow for flow meter u in quarter p (wt. % CO₂).
- Q_p = Quarterly volumetric flow rate measurement for flow meter u in quarter p (standard cubic meters).
- D_p = Quarterly CO₂ stream density measurement for flow meter u in quarter p (metric tons per standard cubic meter).
- p = Quarter of the year.
- u = Flow meter.

(3) To aggregate data, sum the mass of CO₂ for all flow meters in accordance with Equation PP-3 of this section.

$$CO_2 = \sum_{p=1}^U CO_{2,u} \quad (\text{Eq. PP-3})$$

Where:

- CO₂ = Annual mass of CO₂ (metric tons) through all flow meters.
- CO_{2,u} = Annual mass of CO₂ (metric tons) through flow meter u.
- u = Flow meter.

(b) Importers or exporters that import or export CO₂ in containers shall calculate the total mass of CO₂ imported or exported in metric tons, prior to any subsequent purification, processing, or compressing, based on summing the mass in each CO₂ container using weigh bills, scales, or load cells according to Equation PP-4 of this section.

$$CO_2 = \sum_{p=1}^I Q \quad (\text{Eq. PP-4})$$

Where:

- CO₂ = Annual mass of CO₂ (metric tons).
- Q = Annual mass in all CO₂ containers imported or exported during the reporting year (metric tons).

§ 98.424 Monitoring and QA/QC requirements.

(a) *Determination of quantity.* (1) Reporters that have a mass flow meter or volumetric flow meter installed to measure the flow of a CO₂ stream shall base calculations in § 98.423 of this subpart on the installed mass flow or volumetric flow meters.

(2) Reporters that do not have a mass flow meter or volumetric flow meter installed to measure the flow of the

CO₂ stream shall base calculations in § 98.423 of this subpart on the flow of gas transferred off site using a mass flow meter or a volumetric flow meter located at the point of off-site transfer.

(3) Importers or exporters that import or export CO₂ in containers shall measure the mass in each CO₂ container using weigh bills, scales, or load cells and sum the mass in all containers imported or exported during the reporting year.

(4) All flow meters, scales, and load cells used to measure quantities that are reported in § 98.423 of this subpart shall be operated and calibrated according to the following procedure:

(i) You shall use an appropriate standard method published by a consensus-based standards organization if such a method exists. Consensus-based standards organizations include, but are not limited to, the following: ASTM International, the American National Standards Institute (ANSI), the American Gas Association (AGA), the American Society of Mechanical Engineers (ASME), the American Petroleum Institute (API), and the North American Energy Standards Board (NAESB).

(ii) Where no appropriate standard method developed by a consensus-based standards organization exists, you shall follow industry standard practices.

(iii) You must ensure that any flow meter calibrations performed are NIST traceable.

(5) Reporters using Equation PP-2 of this subpart shall measure the density of the CO₂ stream on a quarterly basis in order to calculate the mass of the CO₂ stream according to the following procedure:

(i) You shall use an appropriate standard method published by a consensus-based standards organization to measure density if such a method exists. Consensus-based standards organizations include, but are not limited to, the following: ASTM International, the American National Standards Institute (ANSI), the American Gas Association (AGA), the American Society of Mechanical Engineers (ASME), the American Petroleum Institute (API), and the North American Energy Standards Board (NAESB).