

US EPA's Greenhouse Gas Reporting Program Subpart RR & ISO 27916 Standard: Summary of Roles, Functions, Entities, and Processes

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Purpose statement

The purpose of this document is to facilitate discussion and to highlight how US Environmental Protection Agency (EPA) programs including the Greenhouse Gas Reporting Program (GHGRP) Subpart RR or the International Organization for Standardization (ISO) 27916 + EPA's Underground Injection Control Program Class II address in practice the key principles of accuracy, accountability, and public transparency for reporting geologic storage through enhanced oil recovery (EOR) in the context of the Section 45Q tax credit.

The document is intended to illuminate potential gaps or unspecified areas in ISO 27916 (envisioning application in the US context) and tee-up a conversation on how those could be addressed in implementation, including areas where something is just unspecified by ISO 27916 (but not precluded).

This document complements the previously drafted side-by-side comparison of EPA GHGRP Subpart RR and ISO 27916 language and provisions, entitled "[US Regulatory Programs & the International Standard for Quantifying Geologic Storage through CO₂-EOR: A Side-by-Side Comparison.](#)"

Note: This document is for discussion purposes only and should not be read as providing legal advice or as a regulatory reference for the rules or requirements under EPA's Greenhouse Gas Reporting Program, EPA's Underground Injection Control Program, the federal § 45Q credit for carbon oxide sequestration, or for ISO 27916.

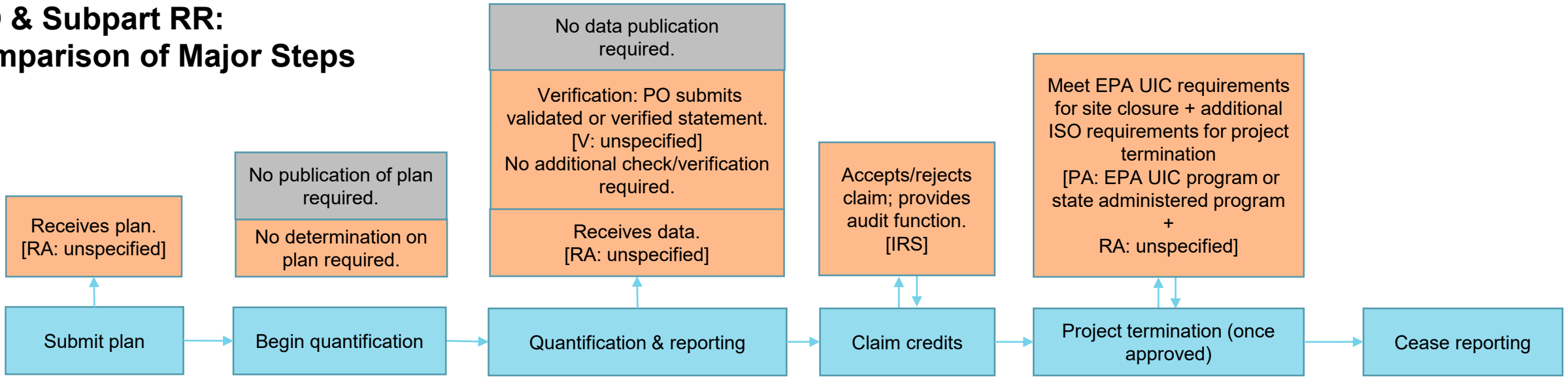
ISO and Subpart RR: Roles, Functions, and Entities

Note: acronyms are provided for ease of reference in the following pages.

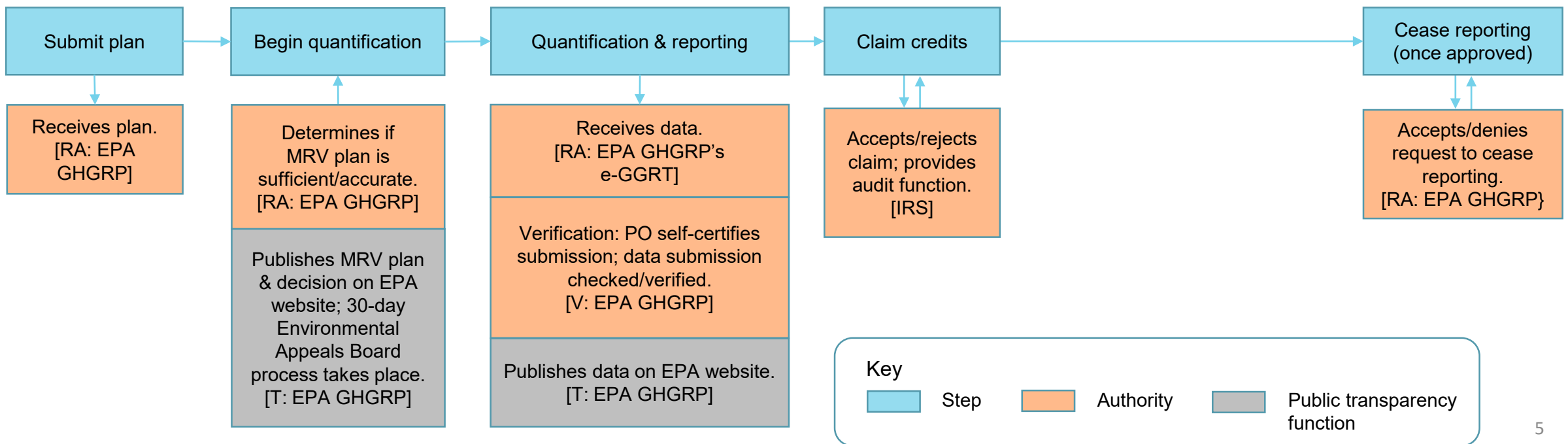
Role	Function	Entity	
		ISO	Subpart RR
Project operator (PO)	Responsible for documentation and implementation of MRV plan.	PO	PO
Permitting authority (PA)	Administer EPA UIC Class II (Federal or state)	Administrator of EPA UIC Class II (Federal or state)	Administrator of EPA UIC Class II (Federal or state)
Reporting authority (RA)	Receive initial documentation.	Unspecified*	EPA GHGRP
*unspecified could mean more than one entity has authority to regulate.	Approve monitoring plan.	N/A [not required under ISO]	EPA GHGRP
	Collect annual data.	Unspecified*	EPA GHGRP
	Cease reporting determination.	Unspecified*	EPA GHGRP
Verification (V)	Validation or verification of reporting data submitted.	Unspecified*	PO
	Verify accuracy of reporting data received.	N/A [not required under ISO]	EPA GHGRP
Centralized public transparency function (e.g., publishing data and/or documentation via a central website) (T)	Public transparency	N/A [not required under ISO]	EPA GHGRP
Tax credit authority	Accepts/rejects tax credit claim; audit function.	IRS	IRS

ISO & Subpart RR: Comparison of Major Steps

ISO Process



Subpart RR Process



Key

- Step
- Authority
- Public transparency function

Detailed Steps in
ISO & RR
Processes #1

Step: Plan for documenting the measurement, monitoring, and
documentation of CO₂ storage in CO₂-EOR projects.

Plan development

Plan provided to entity

Plan evaluation

Plan decision & public transparency

ISO Process

PO: Prepares plan documentation.

For the leakage pathway assessment, follows the ISO standard or requirements set by authority.

Initial plan documentation prepared at the beginning of the quantification period.

A project termination plan must also be developed coincidentally.

PO: Offers documentation to authority.

RA: Receives initial documentation.

Initial documentation offered to the authority.

No entity is charged with evaluating the plan.

Plan not required to be evaluated.

No entity has been charged with making a decision and there is no process specified.

No provision for public transparency.

Subpart RR Process

Prepare monitoring, reporting, and verification (MRV) plan.

PO: Prepares MRV plan.

MRV plan submitted to the EPA. EOR operators may submit the plan at anytime.

PO: Submits MRV plan to EPA for review.

RA: EPA receives plan.

Technical MRV plan evaluation.

RA & PO: EPA and reviews plan for completeness. Opens comment process with PO.

Decision is made on the MRV plan.

RA: EPA publishes MRV plan as submitted or with revisions, along with decision, on the EPA website.

PO: If approved, the operator must implement the MRV plan. If not approved, a project may not proceed with reporting under Subpart RR.

Detailed Steps in
ISO & RR
Processes #2

Step: Quantification & Reporting of CO2 Storage

	Quantification of storage	Documentation and/or reporting of storage	Cease reporting
ISO Process	<p>PO: Conducts measurement & quantification.</p> <p>Measure CO2 storage using ISO's mass-balance approach outlined in the plan.</p>	<p>PO/Verifier: Prepares and submits the documentation/Unspecified.</p> <p>RA: Unspecified. Receives documentation.</p> <p>Verifier (of data received): N/A [no requirement to have data checked/verified once submitted to authority.]</p> <p>Periodic documentation prepared at least annually, which is provided to the authority. This includes a statement describing the nature of validation or verification of the statement. Leakage pathway assessment should coincide with periodic documentation.</p>	<p>PO: Continues to provide periodic documentation to authority.</p> <p>RA: Receives periodic documentation.</p> <p>No cease reporting provision exists until project is terminated. If injection of the anthropogenic CO2 ceases and the CO2-EOR project continues to operate for hydrocarbon extraction purposes, periodic documentation shall be provided as defined by the operations management plan or authority until CO2-EOR project termination is completed.</p>
Subpart RR Process	<p>Measure CO2 storage using EPA GHGRP mass-balance approach as outlined in plan.</p> <p>PO: Conducts measurement & quantification.</p>	<p>Prepare and submit annual reporting and monitoring data. For EPA verification purposes, reporting also includes the class of UIC permit used for injection wells and the well identification number used for the UIC permit.</p> <p>PO: Prepares and submits self-certified annual report data to the EPA via the electronic GHG reporting tool (e-GRRT)</p> <p>RA: EPA GHGRP receives data.</p> <p>Verifier (of data received): EPA checks/verifies the data via a multi-step process.</p>	<p>A PO operating with a Class II permit may elect to submit a request to cease reporting at any time.</p> <p>PO: In the request, the PO must demonstrate the amount of CO2 claimed as stored during the reporting period is not expected to migrate in a manner likely to result in surface leakage.</p> <p>EPA: Approves or denies request.</p>

Records retention

Additional public transparency

Material changes

ISO Process

PO: offers the records to the authority after termination of the lease/permit.
RA: unspecified authority retains records.

Record shall be retained for the duration of the operator's involvement in the CO2-EOR project.

N/A [not required].

Does not envision.

PO: Conducts reviews and revisions. No requirement to submit revisions to authority.

Does not require changes in expected behavior of the CO2 to be reported in periodic documentation. The containment and reservoir management shall be reviewed and revised as necessary. Containment assurance and reservoir management shall be reviewed, and the EOR operation management plan shall be revised as necessary if changes occur that have the potential to adversely affect containment.

Subpart RR Process

There are quarterly and annual requirements depending on the type of data being retained. All records must be retained for at least three years.

PO: Retains data in easily accessible location.

Subpart RR data is made available to the public unless the data is deemed confidential business information. The public can access summarized annual data, the monitoring report narrative, and the approved MRV plans on the EPA website.

PO: May request some data remain confidential business information.

RA: EPA GHGRP publishes the data on their website.

Changes not described in the MRV plan that are material in nature must be included in a revised MRV plan submitted to the EPA.

PO: Revises and submits MRV plan.

RA: EPA GHGRP reviews and makes decision, publishes approved plans to website.

Detailed Steps in
ISO & RR
Processes #4

Other

Well construction

CO2 injection project termination

ISO Process

PO: Meets requirements of UIC permit.
US EPA or delegated state authority:
Administers administer UIC program for Class II wells.
[Potential additional ISO requirements to meet beyond Class II?]

Meet requirements for well construction & new and existing wells.
[Potential additional ISO requirements to meet beyond Class II?]

PO: Provides documentation to demonstrate compliance after termination is complete.
PA: Receives documentation.

Meet requirements for the termination and documentation of a CO₂-EOR project that are in addition to the existing permitting, regulatory, and contractual framework that generally define the rules for safe and secure termination of hydrocarbon recovery projects. A final leakage pathway assessment shall be conducted prior to project termination.

Compliance shall be demonstrated as part of the termination process through documentation provided to the authority or in the final periodic documentation under 4.4.

“CO₂-EOR project termination is completed when all of the following occur: cessation of CO₂ injection, cessation of hydrocarbon production from the project reservoir, and wells are plugged & abandoned unless otherwise required by the authority.” (ISO 10.5)

Subpart RR Process

N/A. [Well construction addressed in UIC Class II permits.]

PO: Meets requirements of UIC permit.
PA: US EPA or delegated state authority administers UIC program for Class II wells.

N/A. [Site closure, etc. addressed in EPA UIC permits.]

PO: Meets requirements of UIC permit.
PA: US EPA or delegated state authority administers UIC program for Class II wells.