

SUMMARY OF REQUIREMENTS CLASS VI OPERATING AND REPORTING CONDITIONS

RUSSELL CO₂ CAPTURE AND SEQUESTRATION

Facility Information

Facility name: Russell CO₂ Storage Complex
CSS #1

Well location: Un-incorporated, Russell County, Kansas
Lat: 38.8855219472 Long: -98.7504253861 NAD 83 (2011)
Sec 27 T 13 S R 13 W 0' FSL – 2005' FEL

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List of Acronyms and Abbreviations

AoR = Area of Review CO ₂ = carbon dioxide GSDT = Geologic Sequestration Data Tool PISC = Post-Injection Site Care psi = pound-force per square inch psia = pound-force per square inch, absolute	psig = pound-force per square inch, gauge UIC = Underground Injection Control US EPA = United States Environmental Protection Agency
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A.III.1. Injection Well Operating Conditions

Table A.III.1-1. Injection Well Operating Conditions

Parameter	Measurement Location	Limitation or Permitted Values		
Daily Injection Rate	FE-0501 Injection Flow Meter	Average	433	metric tons/day
		Maximum	563	metric tons/day
Total Injection	FE-0501 Injection Flow Meter	Maximum	1,800,000	metric tons
Injection Pressure	PT-0505 Downhole - Proximate to packer	Maximum	2,133 2,147	psig psia
Annulus Pressure	PT-0504 Surface - Wellhead Annulus	Minimum	100 114	psig psia
Annulus Pressure - Tubing Differential	PT-0504 - PT-0503 Surface	Minimum	100	psi

psi = pound-force per square inch

psia = pound-force per square inch, absolute

psig = pound-force per square inch, gauge

See Section A.7 of the Application Narrative for discussion on the basis for Table A.III.1-1.

A.III.2. Routine Shutdown Procedure

A deliberate shutdown procedure will be followed for routine shutdowns (e.g., for well workovers) to ensure the protection of health, safety, and the environment. The permittee will reduce carbon dioxide (CO₂) injection rate to zero over a one-day period using either: a near linear ramp down in the injection rate over time, or a series of four or more step downs in injection rate where each step down is nearly equal in size and duration. Procedures that address an immediate shutdown of the well are provided in Appendix H.1 of the Emergency and Remedial Response Plan.

A.III.3. Reporting Requirements

Table A.III.3-1 outlines Injection period reporting requirements. The first four categories conform to 40 CFR 146.91. The remaining categories follow Table 5-1 of the US EPA Class VI guidance document on record keeping, reporting, and data management (EPA 2016) and the Quality Assurance Project Plan Standard (EPA 2023)

Table A.III.3-1. Injection Period Reporting

Reporting Items	Reporting Method	Reporting Timing and Frequency
Semi-Annual Report [40 CFR 146.91(a)]		
<div>Semi-Annual Report providing updates on the following:</div> <div><div>CO₂ Stream Analysis</div><div>Monthly Statistics for Injection Pressure, Flow Rate and Volume, and Annular Pressure, plus</div><div>Any Event that Exceeds Operating Parameters for Annulus Pressure or Injection Pressure</div><div>Any Event that Triggered a Shut-off Device</div><div>CO₂ Injected (Monthly over Reporting Period, and Cumulative)</div><div>Annulus Fluid Added (Monthly over Reporting Period)</div><div>Results of Monitoring Programs</div><div>Corrosion Monitoring</div><div>Above Confining Zone Monitoring</div><div>External Mechanical Integrity Testing</div><div>Pressure Fall-Off Testing</div><div>Plume and Pressure Front Tracking</div><div>Additional Testing and Monitoring</div></div>	<div>Upload completed template to Geologic Sequestration Data Tool (GSDT) Injection and Post-Injection Phase Reporting Module</div>	<div>Semi-Annual</div>
Scheduled Maintenance Reports [40 CFR 146.91(b)]		
Periodic Tests of Mechanical Integrity	Upload report to GSDT Injection and Post-Injection Phase Reporting module	Within 30 days of Completion
Any Well Workover		
Any Other Test of the Injection Well Conducted by Permittee (if required by Director)		
Emergency and Remedial Response Event Reports [40 CFR 146.91(c)]		
Evidence of Underground Source of Drinking Water Endangerment		

Reporting Items	Reporting Method	Reporting Timing and Frequency
Noncompliance with a Permit Condition	Upload Notification Letter and supplemental materials to GSDT Injection and Post-Injection Phase Reporting module	Within 24 hours of Discovery
Triggering of a Shut-off System		
Failure to Maintain Mechanical Integrity		
Release of CO ₂ to the Atmosphere or Biosphere (from soil gas/surface air monitoring)		
Other		
Notifications [40 CFR 146.91(d)]		
Any Planned Well Workover	Upload Notification Letter to GSDT Injection and Post-Injection Phase Reporting module	30 days in Advance
Any Planned Stimulation Activities (other than formation testing per 40 CFR 146.82)		
Any Other Planned Test of the Injection Well Conducted by Permittee		
Permit Amendments and Updates		
Area of Review (AoR) Re-Evaluations and amendments to AoR and Corrective Action Plan, or justification no amendment is needed [40 CFR 146.84(e)]	Upload updates to GSDT AoR and Corrective Action module	Every 5 years (minimum)
Testing and Monitoring Plan amendments, or justification that no amendment is needed [40 CFR 146.90(j)]	Upload updates to GSDT Project Plan Submissions module	Within 1 year of AoR Re-evaluation, Following Significant Changes to the Facility, or When Required by Underground Injection Control (UIC) Program Director
Quality Assurance and Surveillance Plan - Internal review by Permittee	Upload any updates to GSDT Project Plan Submissions module	Annual
Quality Assurance and Surveillance Plan amendments [40 CFR 146.90(k)]	Upload updates to GSDT Project Plan Submissions module	Every 5 years (minimum)
Emergency and Remedial Response Plan amendments, or justification that no amendment is needed [40 CFR 146.94(d)]	Upload updates to GSDT Project Plan Submissions module	Within 1 year of AoR Re-evaluation, Following Significant Changes to the Facility, or When Required by US EPA UIC Program Director

Reporting Items	Reporting Method	Reporting Timing and Frequency
Personnel Contact List	Upload any updates to GSDT Project Plan Submissions module	Annual
Financial Responsibility Cost Estimate updates [40 CFR 146.85(c)(2), (c)(4), and (e)]	Upload updates to GSDT Financial Responsibility Demonstration module	Annually (60 days before instrument anniversary), Within 60 days of Project Plan Amendment, or
Financial Responsibility Instrument updates [40 CFR 146.85(a)(5)(ii), (c)(4), and (d)(3)]	Upload updates to GSDT Financial Responsibility Demonstration module	Annually, Within 60 days of cost estimate increase to greater than value of current instrument, or Within 60 days of Notification of 3rd Party Adverse Financial Conditions
Other		
Follow-up Submissions After an Emergency Shutdown or Loss of Mechanical Integrity [40 CFR 146.88(f)(4)-(5), 146.94(c)]	Upload updates to GSDT Injection and Post-Injection Phase Reporting module	Before Resuming Injection, or As Required by the US EPA UIC Program Director
Notifications of Adverse Financial Conditions [40 CFR 146.85(d)]	Upload Notification Letter to GSDT Financial Responsibility Demonstration module	Within 10 days of the Start of Bankruptcy Proceedings

Table A.III.3-2 outlines reporting requirements for the Post-Injection Site Care (PISC) and Site Closure periods. These items follow Table 6.1 of the US EPA Class VI guidance document on record keeping, reporting, and data management (EPA 2016).

Table A.III.3-2. PISC and Site Care Period Reporting

Reporting Items	Reporting Method	Reporting Timing and Frequency
Injection Well Plugging Plan amendments, if necessary [40 CFR 146.2(c)]	Upload updates to GSDT Project Plan Submissions module	Upon cessation of injection
Notice of Intent to Plug the Injection Well [40 CFR 145.92(c)]	Upload Notification Letter to GSDT Injection and Post-Injection Phase Reporting module	At least 60 days before scheduled well plugging
Well Plugging Report [40 CFR 146.92(d)]	Upload report and supplemental materials to GSDT Injection and Post Injection Phase Reporting module	Within 60 days of well plugging
PISC and Site Closure Plan amendments, or justification that no amendment is needed [40 CFR 146.93(a)(3)]	Upload updates to GSDT to Project Plan Submissions module	Upon cessation of injection
PISC Monitoring Results [40 CFR 146.93(b)]	Upload narrative component of each report and supplemental materials to GSDT Injection and Post Injection Phase Reporting module	As specified in the approved PISC and Site Closure Plan
Non-Endangerment Demonstration [40 CFR 146.93(b)(3)]	Upload files to GSDT Non-Endangerment Demonstration module	At end of 50 years or the approved alternative PISC timeframe, or based on site-specific data
Notice of Intent for Site Closure [40 CFR 146.93(d)]	Upload Notification Letter to GSDT Injection and Post-Injection Phase Reporting module	At least 120 days before site closure
Notice of Intent to Plug Monitoring Wells	Upload Notification Letter to GSDT Injection and Post-Injection Phase Reporting module	Prior to plugging - not specifically required, but recommended to conform with 40 CFR 146.93(e)
Site Closure Report [40 CFR 146.93(f)]	Upload report and supplemental materials to GSDT Injection and Post Injection Phase Reporting module	Within 90 days of site closure

All reporting documents will be submitted electronically via the GSDT.

Note: All testing and monitoring methodologies and frequencies are provided in the Testing and Monitoring Plan.

A.III.4. References

EPA 2016, Geologic Sequestration of Carbon Dioxide: Underground Injection Control (UIC) Program Class VI Well Recordkeeping, Reporting, and Data Management Guidance for Owners and Operators, Office of Water (4606M), EPA 816-R-16-005, September 2016. Available at: https://www.epa.gov/sites/default/files/2016-09/documents/rrdm_guidance_for_operators_final_2016.pdf.

EPA 2023, Quality Assurance Project Plan Standard, Directive No: CIO 2105-S-02.1, Form Rev. 08/21/2023. Available at: https://www.epa.gov/system/files/documents/2024-04/quality_assurance_project_plan_standard.pdf