

FINANCIAL ASSURANCE DEMONSTRATION
40 CFR 146.85

Project Name: Tri-State CCS Redbud 1

Facility Information

Facility contact: Tri-State CCS, LLC
14302 FNB Parkway
Omaha, NE 68154
402-691-9500

Well location: Fairhaven, Hancock County, West Virginia

Well Name	Latitude	Longitude
TR1-1	40.59722582	-80.5716718
TR1-2	40.55529898	-80.6001

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List of Acronyms

AoR	Area of Review
CCS	Carbon capture and storage
CO ₂	Carbon dioxide
TBD	To Be Decided
TR1- (#)	Tri-State CCS Redbud injection well number
UIC	Underground Injection Control
U.S. EPA	U.S. Environmental Protection Agency

1. Introduction

Tri-State CCS, LLC will provide financial responsibility pursuant to 40 CFR 146.85. Tri-State CCS, LLC is planning to use one of the qualifying instruments listed at 40 CFR 146.85(a)(1) to cover the costs of corrective action, plugging injection wells, post-injection site care, site closure, and emergency and remedial response associated with Tri-State CCS Redbud 1 in Hancock County, West Virginia (the “project”).

Tri-State CCS, LLC contracted with Projeo Corporation (Projeo) to provide a third-party estimate of Financial Responsibility for the project. To determine the costs for the coverage amounts underpinning this Financial Responsibility Demonstration, Projeo used currently available price quotes (in Year 2024 dollars) and assumed the hiring of independent, third-party contractors for each Financial Responsibility activity. The estimated costs of each of these activities are presented in Table 1 below.

Table 1: Cost Estimates for Activities to be Covered by Financial Responsibility.

Activity	Total Cost (\$)	Timeline of Coverage
Corrective Action	\$60,409,275	2026-2057
Plugging Injection Wells	\$2,134,484	2062
Post-Injection Site Care	\$12,555,500	2057-2106
Site Closure	\$2,352,700	2106
Emergency and Remedial Response	\$12,683,760	2026-2057

Consistent with U.S. EPA’s July 2011 guidance, Tri-State CCS, LLC provides this demonstration of Financial Responsibility with the understanding that the financial instruments referenced herein will be updated and verified over time. As each activity is initiated, Tri-State CCS, LLC will ensure that the coverage limits provided by the respective Financial Responsibility mechanisms are sufficient to cover the corresponding project costs prior to initiating the next project phase. All adjustments will be submitted for approval by the UIC Program Director and prior to any adjustment to the coverage amounts of the financial responsibility instruments.

2. Discussion of Financial Responsibility Activities and Cost Estimates

The costs estimated in Table 1 are based on quotes and technical data available during the permit application development process and are projected to cover the cost of employing an independent third-party subcontractor to perform the services or procurement of requisite goods. These estimates are based upon historic price data from other projects managed by Tri-State CCS, LLC and its project partners, cost quotes from third-party companies, regulatory guidance documents, and a best judgment about the level of effort required to complete an activity.

2.1. Corrective Action

As discussed in the Area of Review and Corrective Action Plan, Tri-State CCS, LLC has determined that there are up to 293 legacy oil and gas wells in the proposed AoR that may need corrective action.

Estimated well plugging costs are \$206,175 per well. This is based on a compilation of experience with plugging wells associated with storage projects. The cost estimate assumption that the 293 legacy oil and gas wells will need to be plugged is a worst-case scenario. Each well will be assessed for its current status, and corrective action for active wells will cost less than the plugging estimate. The plugging cost estimate includes locating the well, assessing its status, and plugging to current standards. A generalized procedure for conducting corrective action is described in the Area of Review and Corrective Action Plan.

Total plugging costs for 293 wells at \$206,175 per well amounts to \$60,409,275.

However, not all these wells will require immediate corrective action. As the project progresses, and as the plume advances over time, the determination on which wells require corrective action will be updated. As summarized in the Area of Review and Corrective Action Plan, timing of corrective action is proposed as phased and is estimated by modeling the number of wells contacted over various time periods by the advancing AoR (pressure plume + buffer), as shown in Table 2.

Table 2: Estimated number of wells penetrating the caprock contacted by the AoR over time.

AoR Extent Time Frame	Corrective Action Year	Number of Wells
Pressure plume boundary at 10 th year of injection and CO ₂ plume at 80 years	Before injection starts	33
Between CO ₂ plume at 80 years and pressure plume boundary at 20 th year of injection	8 th year of injection	74
Between pressure plume boundary at 20 th and 30 th year of injection	18 th year of injection	80
Between pressure plume boundary at 30 th year of injection and 1-mile buffer	25 th year of injection	106
TOTAL		293

2.2. Plugging Injection Wells

In estimating Financial Responsibility coverage values for injection well plugging, it was assumed that the two injection wells will first be converted to in-zone observation wells after cessation of CO₂ injection, that these wells will monitor pressure for 5 years post-injection, and the two injection wells will be plugged in Year 2063. Injection well plugging is detailed in the Plugging

Plan and assumed filling the entire wellbore with cement. Costs for plugging and abandoning wells are based on regional estimated costs associated with the plugging of oil, gas, and disposal wells. Based on current information, the injection well plugging and abandonment costs are estimated at \$200,000 per injection well for a total of \$400,000 for two wells (in Year 2024 dollars). Note that this cost is less than that associated with plugging legacy wells, as these wells would have already been completed to Class VI standards.

2.3. Post-Injection Site Care

Tri-State CCS, LLC's activities during the Post-Injection Site Care (PISC) time period are discussed in the Post-Injection Site Care and Site Closure Plan. The activities include monitoring for a period of 50 years once injection ceases, on-going well maintenance, periodic reevaluation of the AoR, maintenance of associated facilities, and field personnel costs. Tri-State CCS, LLC anticipates that the PISC activity will begin in Year 2057, after injection ceases, and continue through Year 2106. The total Financial Responsibility cost estimate for PISC is \$12,555,500 (in Year 2024 dollars), based on industry estimates and independent, third-party engineering data, some of which is based on regional experience with oil, gas, and disposal well site care.

2.4. Site Closure

The Financial Responsibility rules state that the well sites must be returned to original conditions, and the observation wells must be securely plugged and abandoned (P&A). Tri-State CCS, LLC's activities for site closure, including the plugging and abandonment of project wells and site remediation, are detailed in the Post-Injection Site Care and Site Closure Plan. It was assumed that site closure activity will occur in Year 2106 for this estimate. The total Financial Responsibility cost estimate for site closure is \$2,352,700 (in Year 2024 dollars), based on industry estimates and independent, third-party engineering data, some of which is based on regional experience with oil, gas, and disposal well site closure. See Table 5.C for details.

2.5. Emergency and Remedial Response

A leakage scenario could result from a loss of mechanical integrity in the wellbore or a loss of geologic containment in the confining interval. The Financial Responsibility estimate assumed a CO₂ leak from the injection interval due to the loss of mechanical integrity in an injection well. The cost estimate assumed a rapid remedial response and includes the cost of the following:

- Isolating the leak
- Controlling the leaky project well
- Plugging the leaky project well
- Safely disposing any produced fluids
- Drilling a relief well
- Drilling additional in-zone and above-zone monitoring wells

3. Plan for Financial Mechanisms

Tri-State CCS, LLC intends to demonstrate Financial Responsibility for the project by executing a combination of qualifying instruments. Tri-State CCS, LLC will ensure that any third parties used will have a credit rating in the top four categories from either Standard & Poor's or Moody's, or a comparable rating from another credible credit rating agency. Additionally, Tri-State CCS, LLC will ensure that each instrument comprises the protective conditions of coverage in 40 CFR 146.85(a)(4). The financial mechanisms will provide appropriate assurances to the UIC Program Director of Tri-State CCS, LLC's ability to fulfill its financial responsibilities for the project.