

**FINANCIAL ASSURANCE DEMONSTRATION
47 CSR 13-14.7.7**

Project Name: Tri-State CCS Redbud 2

Facility Information

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

Well locations: Marshall County, West Virginia

Well Name	Latitude (WGS 84)	Longitude (WGS 84)
TR2-1	40.016375	-80.606419
TR2-2	40.011884	-80.533589
TR2-3	39.978333	-80.600234
TR2-4	39.956423	-80.635316

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List of Acronyms

AoR	Area of Review
CCS	Carbon capture and storage
CO ₂	Carbon dioxide
EPA	Environmental Protection Agency
TBD	To Be Decided
TR2- (#)	Tri-State CCS Redbud 2 injection well number
UIC	Underground Injection Control

1. Introduction

Tri-State CCS, LLC will provide financial responsibility pursuant to 47 CSR 13-14.7.7. Tri-State CCS, LLC is planning to use one of the qualifying instruments listed at 47 CSR 13-14.7.7.a 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 2 in Marshall County, West Virginia (the “project”).

Per 47 CSR 13-14.7.7.o.1, Tri-State CCS, LLC contracted with Projeo Corporation (Projeo) to provide an estimate of the costs to the regulatory agency of hiring a third party to perform the project activities described above. To determine the costs for the coverage amounts underpinning this Financial Responsibility Demonstration, Projeo used currently available price quotes (in 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, and support for these costs is provided in Appendix A.

Table 1: Cost estimates for activities to be covered by financial responsibility.

Activity	Cost	Timeline of Coverage
Corrective Action on Legacy Wells	\$9,774,063	2027-2057
Plugging Injection Wells	\$846,372	2062
Post-Injection Site Care	\$11,296,100	2058-2107
Site Closure	\$1,361,908	2107
Emergency and Remedial Response	\$35,087,143	2027-2107
TOTAL	\$58,365,586	

Consistent with 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 on Legacy Wells

As discussed in the Area of Review and Corrective Action Plan, Tri-State CCS, LLC has determined that there are 125 legacy oil and gas wells in the proposed AoR defined by the 30-yr critical pressure threshold front + 1 mile that may need corrective action, which includes 84 wells for which depth records are unavailable. No corrective action will be done on the wells of unknown depth if they are ultimately found to be shallower than the upper injection formation. There is at least one well of known depth and another 9 wells of unknown depth that could be intersected by the CO₂ plume before site closure. There are 47 wells (12 with known depths and 35 with unknown depths) between the CO₂ plume and the 30-yr critical pressure front; and there are 68 wells (28 with known depths and 40 with unknown depths) between the 30-yr critical pressure front and the AoR boundary. Table 2 provides a tabular summary of these wells.

Table 2. Description of well location and depths, numbers of wells, and corrective action cost.

Well location description	Well depth description	Number of wells	Corrective action cost	Corrective action timeline
Wells inside 80-yr CO ₂ plume	Known depths	1	\$2,328,430	Before injection starts
	Unknown depths	9		
Wells between 80-yr CO ₂ plume and 30-yr critical pressure front	Known depths	12	\$4,744,133	8 th year of injection
	Unknown depths	35		
Wells between 30-yr critical pressure front and AoR boundary	Known depths	28	\$2,701,500	Monitoring over life of project
	Unknown depths	40		
TOTAL		125	\$9,774,063	

Tri-State CCS, LLC conservatively assumes that the wells without depth information will penetrate the confining formation. Accordingly, the cost estimate assumes the following:

- 10 wells within the CO₂ plume will require corrective action and plugging with CO₂ compatible cement at a cost of \$232,843 per well.
- 47 wells between the CO₂ plume and the 30-yr critical pressure boundary will require corrective action and plugging with Class H cement at a cost of \$100,939 per well.
- A monitoring system will be implemented to determine the need for corrective action for the 68 wells between the 30-yr critical pressure boundary and the AoR boundary. The monitoring system assumes that 75% of these 68 wells will be in a condition to allow pressure sensors to be placed downhole to record downhole pressure over the life of the project at a cost of \$32,000/well; with surface CO₂ monitors placed on the remaining 25% at a cost of \$3,000/well. Downhole pressure sensors will also be placed

on 25% of the 57 wells inside the 30-yr critical pressure front. The final piece to the design of the well monitoring system is to run EM surveys over the project area every 5 years for the 30-yr the life of the project at a cost of \$93,750/survey. Total cost combining all aspects of the monitoring system is \$2,701,500.

The plugging cost estimate includes locating the well, assessing its status, and plugging the well with the appropriate cement to current standards. A generalized procedure for conducting corrective action is described in the Area of Review and Corrective Action Plan. The corrective action (plugging and monitoring) costs for all legacy wells total \$9,774,063 as shown in Table 2. The number of wells requiring corrective action may decrease based on the future assessment of the status, condition, and depth of each well. As the project progresses and the critical pressure front and the CO₂ plume advance over time, the determination on which wells require corrective action and the timing of the corrective action will be updated. As summarized in the Area of Review and Corrective Action Plan, a phased approach to the corrective actions is proposed and is estimated by modeling the number of wells contacted over various time periods by the advancing CO₂ plume and AoR (pressure plume + buffer).

2.2. Plugging Injection Wells

In estimating Financial Responsibility coverage values for injection well plugging, it was assumed that first injection begins in 2027, and after the 30-yr injection period, all injections wells would first be converted to in-zone observation wells and that these wells would monitor pressure for five years post-injection and be plugged in 2062. Injection well plugging is detailed in the Plugging Plan for each well 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 approximately \$211,593 per injection well for a total of \$846,372 for four wells.

2.3. Post-Injection Site Care

Tri-State CCS, LLC's activities during the Post-Injection Site Care (PISC) 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 2057 at the ceasing of injection and continue 50 years through 2107. The total Financial Responsibility cost estimate for PISC is \$11,296,100, 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 is assumed that site closure activity will occur in 2107 for this estimate. The site closure costs include P&A of four

observation wells at a cost of \$211,593/well and removal of eight well pads at a cost of \$64,442/pad. The total Financial Responsibility cost estimate for site closure is \$1,361,908, 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 6A for costing 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:

- Drill relief well to remediate uncontrolled blowout
- Remediate CO₂ migration into USDW
- Remediate a brine or other fluid spill
- Repair a leaking injection well
- Drilling an additional above-zone monitoring well
- Drilling an additional in-zone monitoring well

The total estimated cost for this emergency and remedial response scenario is \$35,087,143.

3. Plan for Financial Mechanisms

Tri-State CCS, LLC intends to demonstrate Financial Responsibility for the project by executing a combination of qualifying instruments. At this time, Tri-State CCS, LLC plans to use a surety bond for financial assurance of the following activities: corrective action, plugging injection wells, post-injection site care, and site closure. Tri-State CCS, LLC plans to use either a surety bond or third-party insurance for financial assurance of emergency and remedial response. Tri-State CCS will ensure that each instrument comprises the protective conditions of coverage in 47 CSR 13-14.7.7.d.

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. The designated surety bond representative of Tri-State CCS, LLC, Aon Risk Services Southwest, Inc., identified the following proposed issuer (see Appendix B):

- Hartford Fire Insurance Company: Rated in financial strength as A+ Stable by A.M. Best, A1 Positive by Moody's, and A+ Positive by Standard & Poor's.

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. Tri-State CCS, LLC will provide the UIC Program Director with any changes to this plan prior to execution of the financial mechanism/s and issuance of the Class VI UIC permit to construct.

Appendix A – Support for Cost Estimates

Table 1A. P&A Legacy Well in CO₂ Plume: Corrective Action Costs Per Well

Item	Cost/well	Comment
Site Preparation & Maintenance	\$7,000	Permitting, local road repair, and containment
Engineering & Supervision	\$12,300	Six days supervision
Cementing Services	\$112,193	CO ₂ cement inside production casing to TOC and uphole plugs to intermediate seat
Workover / Completion Fluids & Services	\$1,000	Freshwater based mud for loading hole
Equipment Rentals	\$15,500	Workover BOP rental with mob/demob and pad support rentals
Environmental	\$4,000	Trucking to dispose of 1000 bbl wastewater
Misc	\$1,500	Tophole antiskid fill from surface casing
Specialty Tools & Services	\$7,100	BOP rental and pressure pumping to kill well
Safety	\$500	Safety inspection
Trucking & Transportation	\$1,500	Trucking rental equip on/off pad
Welding	\$1,500	Wellhead work
Production Services	\$67,950	Workover rig; pumps; run CBL; water handling
Contract Labor	\$800	Misc pad support
Total Intangible Cost	\$232,843	

Table 2A. P&A Legacy Well between CO₂ Plume and Critical Pressure Front: Corrective Action Costs Per Well

Item	Cost/well	Comment
Site Preparation & Maintenance	\$7,000	Permitting, local road repair, and containment
Engineering & Supervision	\$3,300	One day supervision
Cementing Services	\$34,589	2000 ft of Class H Cement from TD to top of Lockport
Workover / Completion Fluids & Services	\$1,000	Freshwater based mud for loading hole
Equipment Rentals	\$8,000	Workover BOP rental with mob/demob and pad support rentals
Environmental	\$4,000	Trucking to dispose of 1000 bbl wastewater
Misc	\$1,500	Tophole antiskid fill from surface casing
Specialty Tools & Services	\$7,100	BOP rental and pressure pumping to kill well
Safety	\$500	Safety inspection
Trucking & Transportation	\$1,500	Trucking rental equip on/off pad
Welding	\$1,500	Wellhead work
Production Services	\$30,150	Service rig; pumps; run CBL; water handling
Contract Labor	\$800	Misc pad support
Total Intangible Cost	\$100,939	

Table 3A. Monitoring Activities for Legacy Wells between 30-yr Critical Pressure Front and AoR Boundary.

Item	Cost/well or survey	Total cost	Comment
Downhole pressure sensors	\$32,000	\$2,088,000	Assume 75% of wells between 30-yr critical pressure front and AoR limit are in condition to allow installation of pressure sensors; plus ¼ of wells inside the critical pressure front and CO ₂ plume areas
Surface CO ₂ sensors	\$3,000	\$51,000	Installed on the assumed 25% of wells in visibly poor condition
Remote surveys of plume position	\$93,750	\$562,500	e.g., EM surveys done every 5 years over the life of the project
Total		\$2,701,500	

Table 4A. Plugging injection well.

Item	Cost	Comment
Site Preparation & Maintenance	\$7,000	Permitting and local road repair
Engineering & Supervision	10,500	Six days supervision
Cementing Services	\$112,193	CO ₂ cement inside production casing to TOC and uphole plugs to intermediate seat
Workover / Completion Fluids & Services	\$1,000	Freshwater based mud for loading hole
Equipment Rentals	\$14,000	Workover BOP rental with mob/demob and pad support rentals
Environmental	\$4,000	Trucking to dispose of 1000 bbl wastewater
Misc	\$1,500	Tophole antiskid fill from surface casing
Specialty Tools & Services	\$7,100	BOP rental and pressure pumping to kill well
Safety	\$500	Safety inspection
Trucking & Transportation	\$1,500	Trucking rental equip on/off pad
Welding	\$1,500	Wellhead work
Production Services	\$50,000	Workover rig; pumps; run CBL; water handling
Contract Labor	\$800	Misc pad support
Total Intangible Cost	\$211,593	

Table 5A. PISC Testing

Item	Cost
Groundwater Sampling	\$693,600
Storage Complex Sensors	\$1,600,000
Storage Complex Pulsed Neutron	\$4,800,000
ACZ Sampling	\$382,500
UOB Sampling	\$1,020,000
ACZ Sensors	\$1,200,000
UOB Sensors	\$1,600,000
Total	\$11,296,100

Table 6A. Site Closure

Item	Cost	Comments
P&A Observation Well: Cost Per Well		
Site Preparation & Maintenance	\$7,000	Permitting and local road repair
Engineering & Supervision	10,500	Six days supervision
Well Evaluation	\$0	
Casing Services	\$0	
Cementing Services	\$112,193	CO ₂ cement inside production casing to TOC and uphole plugs to intermediate seat
Workover / Completion Fluids & Services	\$1,000	Freshwater based mud for loading hole
Equipment Rentals	\$14,000	Workover BOP rental with mob/demob and pad support rentals
Environmental	\$4,000	Trucking to dispose of 1000 bbl wastewater
Misc	\$1,500	Tophole antiskid fill from surface casing
Specialty Tools & Services	\$7,100	BOP rental and pressure pumping to kill well
Safety	\$500	Safety inspection
Trucking & Transportation	\$1,500	Trucking rental equip on/off pad
Welding	\$1,500	Wellhead work
Production Services	\$50,000	Workover rig; pumps; run CBL; water handling
Contract Labor	\$800	Misc pad support
Sub-Total	\$211,593	
Well Pad Removal: Cost Per Pad		
Compost Filter Sock	\$6,120	
Slope Matting	\$22,500	Hydroseed
Excavation	\$25,750	Bulk Cut & Fill
Ditches	\$10,072	Diversion & fabric
Sub-Total	\$64,442	

Table 7A. Emergency & Remedial Response.

Item	Cost	Comment
Blow out: Injection / observation / legacy well	\$6,174,722	Drill one relief well to kill an uncontrolled blowout within or around AoR
CO ₂ Migration into USDW	\$10,190,060	CO ₂ migration into USDW requiring the establishment of a groundwater management zone
Brine / Fluid Spill	\$69,860	Clean up and remediation of a brine or fluid spill
Repair Leaking Injection Well	\$211,400	
Drill additional above-zone monitor well	\$8,131,063	
Drill additional in-zone monitor well	\$10,163,829	
Total Cost	\$35,087,143	

Appendix B – Letter from Designated Surety Bond Representative



July 14, 2025

To:
Todd Cooper
Environmental Resource Analyst
Groundwater/UIC
WVDEP Division of Water and Waste Management
601 57th Street SE
Charleston, WV 25304

RE: Financial Assurance on behalf of Tri-State CCS, LLC - Redbud 2

To Whom It May Concern:

Aon Risk Services Southwest, Inc., offices at 1300 Post Oak Blvd, Houston, TX 77056, is the designated surety bond representative of Tri-State CCS, LLC. On or about June 30, 2025, Tri-State CCS, LLC submitted to the EPA its Financial Assurance Demonstration outlining Tri-State CCS, LLC will provide financial responsibility pursuant to 40 CFR 146.85. In an effort to provide further clarification around the company's intent to meet the financial assurance requirements of the EPA, we Aon, represent that Tri-State CCS, LLC intends to utilize the following instruments:

Activity	Cost (\$)	Financial Assurance	Issuer
Corrective Action	\$9,774,063	Surety Bond	Hartford Fire Insurance Company, or other
Plugging Injection Wells	\$846,372	Surety Bond	Hartford Fire Insurance Company, or other
Post-Injection Site Care	\$11,296,100	Surety Bond	Hartford Fire Insurance Company, or other
Site Closure	1,361,908	Surety Bond	Hartford Fire Insurance Company, or other
Emergency and Remedial Response	\$35,087,143	Surety bond and / or Environmental insurance	Hartford Fire Insurance Company, or other

Tri-State CCS, LLC decision to issue specific financial assurance instruments is conditioned upon the surety and insurance underwriters' acceptable review of permits, bond forms, financing, and other underwriting criteria and any arrangement for any bonds and/or is a matter between Tri-State CCS, LLC and the carriers, and Aon assumes no liability to third parties or you if, for any reason, we do not issue requested bonds.

By: Barbara Norton
Company: Aon Risk Services Southwest, Inc.