ATTACHMENT C

FINANCIAL ASSURANCE DEMONSTRATION [40 CFR 146.85]

1. FACILITY INFORMATION

Facility Name: CarbonFrontier

Facility Contact: Randy Hoyle, Chief Carbon Solutions Officer
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Well Locations:

Well Number	County, State	Latitude	Longitude
CI1-64Z-27N	Kern County, CA	35°33'9.4877"N	119°48'26.3702"W
CI2-64Z-35N	Kern County, CA	35°32'32.6713"N	119°47'37.0682"W
CI3-64Z-35N	Kern County, CA	35°32'11.6457"N	119°47'7.5912"W
CI4-64Z-35N	Kern County, CA	35°31'55.4154"N	119°46'51.7864"W
27R-27N	Kern County, CA	35°33'2.4280"N	119°48'28.6103"W
55-26N	Kern County, CA	35°32'43.2520"N	119°47'32.7755"W
64-35N	Kern County, CA	35°31'44.3600"N	119°46'44.9788"W
9-1N	Kern County, CA	35°31'31.6480"N	119°46'37.0154"W
64-27N	Kern County, CA	35°32'38.0979"N	119°47'54.6576"W

Version History

File Name	Version	Date	Description of Change
Attachment C – Aera CCS Financial Responsibility Demonstration.pdf	1	January 19, 2023	Original document
Att C – CarbonFrontier Financial Responsibility Demonstration_REV1_03062023.pdf	2	March 6, 2023	Revisions made based on EPA administrative review comments from February 23, 2023
Attachment C – CarbonFrontier Financial Responsibility Demonstration V3 04182024.pdf	3	April 18, 2024	Revisions made based on costs of additional monitoring well and revised Emergency and Remedial Response

This financial assurance demonstration describes how Aera Energy LLC (Aera) will meet the requirements for Title 40 of the Code of Federal Regulations (CFR) 146.85. Required activities for all nine proposed Class VI injection wells and five monitoring wells for the CarbonFrontier CCS Project are assessed collectively in this demonstration.

2. FINANCIAL INSTRUMENTS [40 CFR 146.85(A)]

Aera is currently evaluating qualifying financial instruments with the support of finance professionals and insurance brokers to fulfill the financial responsibility requirements of 40 CFR 146.85(a). Aera will provide the Underground Injection Control (UIC) Program Director with updates as instrument selections are finalized and will submit the required documentation when instruments are secured, prior to permit approval.

3. COST ESTIMATES [40 CFR 146.85(C)]

Cost estimates for the required activities were prepared by SLB and additional vendors in 2023 (**Table 1**). These estimates, reported in 2023 dollars, are based on costs incurred and/or forecasted by comparable oil and gas operations and other carbon capture and storage projects, and assume that activities will be conducted by third-party service providers.

Table 1: Cost Estimate for Project Activities to be Covered

Activity	Estimated Cost (2023 USD)
Corrective Action on Wells in the AoR	$0
Plugging of Injection Wells	$2,061,000
Post-Injection Site Care and Closure	$17,894,000
Emergency and Remedial Response	$7,956,000
Total:	**$27,911,000**

3.1 Performing Corrective Action on Wells in the Area of Review (AoR)

As described in the Corrective Action Plan (**Attachment B**), Aera has elected to perform the corrective action on wells within the AoR prior to initiation of injection. For that reason, costs are estimated at $0 and no financial instrument will be needed for corrective action.

3.2 Plugging of Injection Wells

The Injection Well Plugging Plan (**Attachment F**) describes the plugging procedures for both new and repurposed Class VI injection wells. Because of similarities in depth, construction, plugging procedure and costs for plugging of repurposed and newly drilled injection wells, a single summary of plugging costs for all nine injection wells is presented in **Table 2**.

Table 2: Injection Well Plugging Cost Estimate for New and Repurposed Wells

Activity	Estimated Cost per Well (2023 USD)	# of Wells	Total Estimated Cost (2023 USD)
Rig Costs (Mobilization and Daily Rate)	$104,000	9	$936,000
Flush Well, Perform Reservoir Pressure Test, MIT, and Plug Well	$125,000	9	$1,125,000
		Injection Well Plugging Subtotal:	**$2,061,000**

3.3 Post-Injection Site Care and Closure

The Post-Injection Site Care (PISC) and Site Closure Plan is described in **Attachment G** and details the plume, pressure front, and groundwater monitoring activities that will be performed during the post injection period and their frequencies. This plan also describes the process for decommissioning monitoring wells and closing the site. The duration of the PISC period is discussed in the Alternative PISC Timeframe section (**Attachment H**). PISC cost estimates are presented in **Table 3** while Site Closure costs are estimated in **Table 4**. Total combined costs for both PISC and Site Closure are estimated at $17,894,000.

Table 3: Post-Injection Site Care Cost Estimate

Activity	Cost per Event per Well (2023 USD)	# of Wells per Event	# Events Over 15-year PISC Period	Total Estimated Cost (2023 USD)
Injection and Above Zone Fluid Monitoring	$16,000	5	7	$560,000
Injection and Above Zone Logging	$30,000	5	7	$1,050,000
Continuous Pressure and Temperature Monitoring	$175,000	5	15	$13,650,000
Project Management	$22,500	--	15	$345,000
Post-Injection Reports	$40,000	--	15	$630,000
			PISC Subtotal:	**$16,235,000**

Table 4: Site Closure Cost Estimate

Activity	Total Estimated Cost (2023 USD)
Perform Non-Endangerment Demonstration	$203,000
Plug Monitoring Wells (5 wells)	$1,144,000
Facility Closure	$312,000
Site Closure Subtotal:	**$1,659,000**

3.4 Emergency and Remedial Response (Including Endangerment to USDW)

Cost estimates for emergency and remedial response activities are complicated by the uncertainty as to whether such events will occur and the nature of the events, and therefore the cost of responding. Emergency events and response actions are described in the Emergency and Remedial Response Plan (ERRP, **Attachment I**). Cost estimates are based on the response actions to the major event scenarios. A summary of the emergency events, along with third party cost estimates for a major event, are shown in **Table 5**.

Due to the low probabilities of event occurrence and the statistically improbable likelihood of multiple failures occurring over the course of the project lifetime, the single highest cost scenario was selected as the value for financial assurance. This scenario accounts for the emergency and

remedial response actions to a major seismic event causing leakage of CO_2 and/or formation fluids to a USDW. These conservative response actions include incident assessment and testing of wells and pipelines, geophysical surveys to identify subsurface leakage, surface and near-surface monitoring, corrective action of a damaged well, and completion of groundwater remediation.

Table 5: Summary of Emergency and Remedial Response Cost Estimate

Emergency Scenario	Estimated Cost (2023 USD)
Injection and/or Monitoring Well Integrity Failure	$5,680,000
Injection Well Monitoring Equipment Failure	$152,000
Fluid or CO_2 leakage to USDW or the Land Surface	$6,631,000
Natural Disaster	$7,956,000
Seismic Event	**$7,956,000**

4. UPDATES TO FINANCIAL ASSURANCE [40 CFR 146.85(C)(2)(3)(4)]:

As part of the requirements under 40 CFR 146.85(c), cost estimates will be updated during the active life of the project and provided to the UIC Program Director within 60 days prior to the anniversary date of the establishment of the financial instrument(s) and within 60 days of any amendments to the AoR and Corrective Action Plan, Injection Well Plugging Plan, the PISC and Site Closure Plan, and the ERRP. If the cost estimates increase to an amount greater than the face value of the financial instrument(s) in use, Aera will increase the face amount of the existing instrument(s) or acquire additional financial instruments within 60 days and submit evidence to the UIC Program Director.