



**Natural State
RENEWABLES**

**CLASS VI PERMIT
FINANCIAL ASSURANCE
DEMONSTRATION**

40 CFR 146.85

**NATURAL STATE RENEWABLES, INC.
Nimbus ARCCS, Inc.
Ouachita County Arkansas**

**Prepared By:
GEOSTOCK SANDIA, LLC**

**Revision No. 0
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TABLE OF CONTENTS

1.0	Facility Information.....	1
2.0	Attachments	3
2.1	Corrective Action Plan Cost Estimates.....	3
2.2	Injection Well Plugging Costs Estimate – Injection Wells.....	4
2.3	Monitor Well Plugging Costs Estimate – In-Zone, Above Confining Zone And Groundwater	5
2.4	Post Injection Site Care (Pisc) Activities And Site Closure Cost Estimate	6
2.5	Emergency And Remedial Response Cost Estimate Justification	7

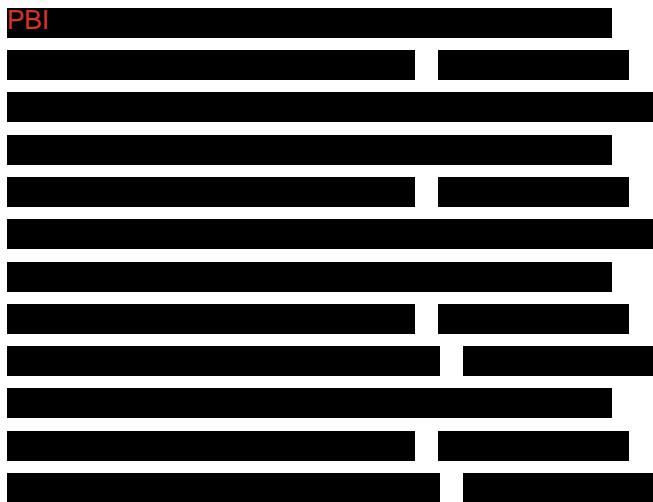
1.0 FACILITY INFORMATION

Facility/project Name: Natural State Renewables Inc.
Nimbus ARCCS Inc.
Class VI Injection Well Nos. 1-4

Facility/project Contact: Clay Marbry, P.E., Senior Vice President, Project Development
Natural State Renewables Inc.
4200 B Stone Road
Kilgore, TX 75662
Office: 903-983-6213

Well Locations: Ouachita County, Arkansas

PBI



Prior to issuance of a Class VI injection, Natural State Renewables Inc (NSR) will provide evidence of meeting the Class VI financial responsibility requirements of financial responsibility pursuant to 40 CFR 146.85. NSR is reviewing the extensive guidance published by EPA to determine the best instrument of financial responsibility to cover the costs of corrective action, injection well plugging, post-injection site care and site closure, and emergency and remedial response.

The estimated costs of each of these activities, as provided by a third party by knowledge of industry standards, are presented in **Table 1**.

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

Activity	Total Cost (\$)
Corrective Action	
Plugging Injection Wells (including 20% contingency)	
Plugging Monitor Wells (including 20% contingency)	
Post-Injection Site Care and Site Closure	\$17,500,000
Emergency and Remedial Response	\$25,000,000

2.0 ATTACHMENTS

2.1 CORRECTIVE ACTION PLAN COST ESTIMATES

Location of Wells that Require Remediation	Year to be Remediated	Number of Wells	Estimated Remediation Cost per Well	Estimated Final Cost (\$M)
PBI	2024	100	\$100,000	\$10,000,000
100	2025	100	\$100,000	\$10,000,000
100	2026	100	\$100,000	\$10,000,000
100	2027	100	\$100,000	\$10,000,000
100	2028	100	\$100,000	\$10,000,000
100	2029	100	\$100,000	\$10,000,000
100	2030	100	\$100,000	\$10,000,000
100	2031	100	\$100,000	\$10,000,000
100	2032	100	\$100,000	\$10,000,000
100	2033	100	\$100,000	\$10,000,000
100	2034	100	\$100,000	\$10,000,000
100	2035	100	\$100,000	\$10,000,000
100	2036	100	\$100,000	\$10,000,000
100	2037	100	\$100,000	\$10,000,000
100	2038	100	\$100,000	\$10,000,000
100	2039	100	\$100,000	\$10,000,000
100	2040	100	\$100,000	\$10,000,000
100	2041	100	\$100,000	\$10,000,000
100	2042	100	\$100,000	\$10,000,000
100	2043	100	\$100,000	\$10,000,000
100	2044	100	\$100,000	\$10,000,000
100	2045	100	\$100,000	\$10,000,000
100	2046	100	\$100,000	\$10,000,000
100	2047	100	\$100,000	\$10,000,000
100	2048	100	\$100,000	\$10,000,000
100	2049	100	\$100,000	\$10,000,000
100	2050	100	\$100,000	\$10,000,000
100	2051	100	\$100,000	\$10,000,000
100	2052	100	\$100,000	\$10,000,000
100	2053	100	\$100,000	\$10,000,000
100	2054	100	\$100,000	\$10,000,000
100	2055	100	\$100,000	\$10,000,000
100	2056	100	\$100,000	\$10,000,000
100	2057	100	\$100,000	\$10,000,000
100	2058	100	\$100,000	\$10,000,000
100	2059	100	\$100,000	\$10,000,000
100	2060	100	\$100,000	\$10,000,000
100	2061	100	\$100,000	\$10,000,000
100	2062	100	\$100,000	\$10,000,000
100	2063	100	\$100,000	\$10,000,000
100	2064	100	\$100,000	\$10,000,000
100	2065	100	\$100,000	\$10,000,000
100	2066	100	\$100,000	\$10,000,000
100	2067	100	\$100,000	\$10,000,000
100	2068	100	\$100,000	\$10,000,000
100	2069	100	\$100,000	\$10,000,000
100	2070	100	\$100,000	\$10,000,000
100	2071	100	\$100,000	\$10,000,000
100	2072	100	\$100,000	\$10,000,000
100	2073	100	\$100,000	\$10,000,000
100	2074	100	\$100,000	\$10,000,000
100	2075	100	\$100,000	\$10,000,000
100	2076	100	\$100,000	\$10,000,000
100	2077	100	\$100,000	\$10,000,000
100	2078	100	\$100,000	\$10,000,000
100	2079	100	\$100,000	\$10,000,000
100	2080	100	\$100,000	\$10,000,000
100	2081	100	\$100,000	\$10,000,000
100	2082	100	\$100,000	\$10,000,000
100	2083	100	\$100,000	\$10,000,000
100	2084	100	\$100,000	\$10,000,000
100	2085	100	\$100,000	\$10,000,000
100	2086	100	\$100,000	\$10,000,000
100	2087	100	\$100,000	\$10,000,000
100	2088	100	\$100,000	\$10,000,000
100	2089	100	\$100,000	\$10,000,000
100	2090	100	\$100,000	\$10,000,000
100	2091	100	\$100,000	\$10,000,000
100	2092	100	\$100,000	\$10,000,000
100	2093	100	\$100,000	\$10,000,000
100	2094	100	\$100,000	\$10,000,000
100	2095	100	\$100,000	\$10,000,000
100	2096	100	\$100,000	\$10,000,000
100	2097	100	\$100,000	\$10,000,000
100	2098	100	\$100,000	\$10,000,000
100	2099	100	\$100,000	\$10,000,000
100	2000	100	\$100,000	\$10,000,000

2.2 INJECTION WELL PLUGGING COSTS ESTIMATE – INJECTION WELLS

Item	Well No. 1	Well No. 2	Well No. 3	Well No. 4	Total
Permitting, Engineering & Consulting Services					
Site Supervision					
Workover Rig (inclusive of mob/demob)					
Rental Tools					
Wireline Logging					
Brine (material & pumping)					
Cement (material & pumping)					
Mud Products					
Welding Services					
Waste Disposal + Site Reclamation					
Subtotal:					
<i>Contingency: 20%</i>					
TOTAL P&A COSTS					

2.3 MONITOR WELL PLUGGING COSTS ESTIMATE – IN-ZONE, ABOVE CONFINING ZONE AND GROUNDWATER

Item	DM-1	DM-2	DM-3	DM-4	SM-1	Total
Permitting, Engineering & Consulting Services						
Site Supervision						
Workover Rig (inclusive of mob/demob)						
Rental Tools						
Wireline Logging						
Brine (material & pumping)						
Cement (material & pumping)						
Mud Products						
Welding Services						
Waste Disposal + Site Reclamation						
Subtotal:						
<i>Contingency: 20%</i>						
TOTAL P&A COSTS						

2.4 POST INJECTION SITE CARE (PISC) ACTIVITIES AND SITE CLOSURE COST ESTIMATE

PISC activities for 50 years/Site Closure	Cost Estimate (USD)	Frequency and Comments
VSP	\$5,000,000	Can vary but once every 10 years i.e., 5 times over 50 years. 1 MM USD per VSP.
Seismic	\$5,000,000	1 to take at the end of the PISC.
Cased Hole Logging	\$7,500,000	Annual logging activity for 50 years. This includes mobilization, annual fluid sampling, saturation changes and leak detection behind pipe one annually. Roughly 150000 per year for 50 years.
Total	\$17,500,000	The actual cost might be lower depending on the plume and pressure behavior seen i.e., alternate PISC scenario.

2.5 EMERGENCY AND REMEDIAL RESPONSE COST ESTIMATE JUSTIFICATION

The Emergency and Remedial Response cost estimate for NSR is based upon the completion of the following four (4) activities:

1. Injection and/or monitoring well remediation work
2. Drilling of relief wells in the event of worst-case discharge (WCD)
3. Associated pipeline repair work
4. Post-emergency resettlement efforts

This estimate of \$25 million assumes that these hypothetical situations will not occur simultaneously.

Activity	Cost Estimate (USD)	Emergency
Injection and/or monitoring well remediation	\$5,000,000	In case of a CO ₂ / brine leak via the injector or monitor.
Drilling of relief wells in the event of worst-case discharge (WCD)	\$14,000,000	In case of WCD through an injector, monitor or legacy well.
On-site pipeline repair	\$3,000,000	In case of a CO ₂ leak through a pipeline
Post-Emergency Resettlement	\$3,000,000	Settlement and legal claims