IT QUESTION RESPONSES

River Parish Sequestration Project

RPN-1-INJ (Application No. 45054)
RPN-2-INJ (Application No. 45055)
RPN-3-INJ (Application No. 45056)

River Parish Sequestration, LLC

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INTRODUCTION

River Parish Sequestration, LLC (RPS) is developing the River Parish Sequestration Project (RPS Project), which consists of carbon dioxide (CO_2) sequestration facilities in the Louisiana Industrial Corridor. The goals of the RPS Project are to (1) provide industrial emitters with a timely, reliable, cost-competitive, and scalable CO_2 transportation and storage service; (2) minimize negative impacts to communities and environmental resources; and (3) generate positive impacts for communities in the project area. The RPS Project is ideally situated to achieve these objectives given the project's location, large-scale storage capacity, and proximity to existing CO_2 sources to minimize new-build CO_2 pipeline infrastructure.

Between May 2023 and August 2023, RPS submitted six Class VI permit applications to the U.S. Environmental Protection Agency (EPA), Region 6, for seven proposed injection wells. The EPA deemed each of the Class VI permit applications to be administratively complete in letters to RPS issued between June 2023 and September 2023. On December 28, 2023, the EPA approved the State of Louisiana's application for primacy for Class VI geologic sequestration wells located within the state. EPA subsequently transmitted all Class VI applications for project sites and wells located in Louisiana to the Louisiana Department of Energy and Natural Resources (LDENR), Office of Conservation, Injection and Mining Division (IMD) on February 5, 2024.

As required under the Louisiana Constitution, Article IX, §1 and the Louisiana Revised Statutes (La. R.S. 30:2018), an Environmental Impact Assessment, also referred to as a response to the "IT Decision," has been developed in support of the Class VI permit applications for the RPS Project. This document provides the responses to the IT Questions. A separate Environmental Impact Assessment (EIA) document has been prepared by RPS under separate cover. The EIA provides detail regarding project alternatives, the existing environment, and environmental impacts for the Class VI wells and associated infrastructure (monitoring wells, pipelines, pump station, access roads). This document provides the responses to the IT Questions and references the separate EIA document. This document and the separate EIA cover three of the RPS Class VI applications and associated infrastructure, as identified in Table 1.

Table 1. *Class VI Permit Applications Covered in this IT Analysis*

Class VI Injection Well	Parish	EPA		LDENR		
		Submittal	Completeness	Transfer	Completeness	Application No.
RPN-1-INJ	Ascension	May 11, 2023	June 14, 2023	Feb. 5, 2024	Mar. 1, 2024	45054
RPN-2-INJ	Assumption	May 23, 2023	June 14, 2023	Feb. 5, 2024	Mar. 1, 2024	45055
RPN-3-INJ	Assumption	June 19, 2023	June 22, 2023	Feb. 5, 2024	Mar. 1, 2024	45056

Article IX, Natural Resources, of the Louisiana Constitution provides a constitutional basis for implementation of environmental standards in the State. The public policy set forth in Article IX, Section 1 is as follows:

> *The natural resources of the state, including air and water, and the healthful, scenic, historic, and esthetic quality of the environment shall be protected, conserved and replenished insofar as possible and consistent with the health, safety and welfare of the people. The legislature shall enact laws to implement this policy.*

In *Save Ourselves v. Environmental Control Commission*, 452 So. 2d 1152, 1157 (La. 1984), the Louisiana Supreme Court ruled that the constitutional requirements of the Natural Resources Article of the Louisiana Constitution were not self-implementing and that the IT factors are derived from Louisiana law by analogy to the National Environmental Policy Act. The court then created what have been labeled the "IT Questions." The questions are:

1. Avoidance of Adverse Environmental Impacts: Have the potential and real adverse environmental effects of the proposed facility been avoided to the maximum extent possible?

2. Cost-Benefit Analysis (Balancing): Does a cost benefit analysis of the environmental impact costs balanced against the social and economic benefits of the proposed facility demonstrate that the latter outweighs the former?

3. Alternative Projects: Are there alternative projects which would offer more protection to the environment than the proposed facility without unduly curtailing non-environmental benefits?

4. Alternative Sites: Are there alternative sites which would offer more protection to the environment than the proposed facility site without unduly curtailing non-environmental benefits?

5. Mitigating Measures: Are there mitigating measures which would offer more protection to the environment than the facility as proposed without unduly curtailing non-environmental benefits?

PROJECT DESCRIPTION

The proposed RPS Project facilities covered in this document are the following:

- Three (3) CO_2 injection wells ("RPN-1-INJ," "RPN-2-INJ," and "RPN-3-INJ")
- Twelve (12) monitoring wells (four [4] associated with each injection well)
- One (1) 7.1-mile-long, 16-inch-diameter pipeline ("Geismar Pipeline") from an interconnect with industrial emitters in Geismar, Louisiana, to the storage field
- One (1) 7.3-mile-long, 16-inch-diameter pipeline ("In-Field Pipeline) to connect RPN-1-INJ to RPN-2-INJ together and to the pump station.
- One (1) 0.4-mile-long, 10-inch-diameter lateral pipeline ("RPN-3 Lateral Pipeline") to connect the In-Field Pipeline to RPN-3-INJ.
- One (1) pump station ("Central Pump Station"), located adjacent to the RPN-1-INJ injection well, to boost CO_2 to pressures sufficient for injection into the wells.

The sources of the CO_2 will be nearby industrial emitters, including emitters in Geismar, Louisiana. CO_2 will be transported from Geismar via the Geismar Pipeline. The CO_2 will then be distributed to the injection wells via the In-Field Pipeline and the RPN-3 Lateral Pipeline.

AVOIDANCE OF ADVERSE ENVIRONMENTAL IMPACTS: Have the potential and real adverse environmental effects of the proposed facility been avoided to the maximum extent possible?

Yes. RPS has sited the three injection wells and associated facilities to avoid and minimize adverse environmental effects to the maximum extent possible, while also ensuring that CO_2 injection and the resulting subsurface CO_2 plume from each well will be stored within the pore space leased by RPS. The EIA document provides a detailed assessment of the environmental effects of the project. Below is a summary by resource of how RPS has avoided and/or minimized environmental impacts from the facilities. Further details are contained in the separate EIA document.

Geology and Subsurface Resources

- The Project area has low seismic hazard potential and no faulting across upper confining units in the areas where the Class VI wells will be drilled.
- There are no artificial penetrations that RPS must plug and abandon in the areas where CO_2 will be stored.
- RPS will be putting in 12 monitoring wells associated with the three injection wells to ensure adequate monitoring of CO_2 migration from the reservoir.
- Adherence to the Class VI permitting requirements will help ensure safe CO_2 injection pressure limits.

Land Use

- The Project facilities are located almost entirely in agricultural fields dominated by sugarcane production. Landowners will be compensated for crop impacts. Following construction, pipeline corridors will be restored to pre-construction conditions and able to revert to agricultural use.
- RPS will utilize existing farm roads for access to facilities.
- While the Project will impact Prime Farmland soils, the vast majority of the soils in the area are Prime Farmland soils so the small loss of land due to Project permanent facilities will cause an insignificant impact.
- While a portion of the Project area is located within the Louisiana Coastal Zone, the Louisiana Department of Conservation and Energy (C&E) determined that the facilities were above the 5-foot elevation contour and are exempt from Coastal Use permitting requirements.

Water Resources

- The only surface waterbodies intersected by the Project occur on the pipelines. The pipelines will cross 20 waterbodies, of which 5 are natural waterbodies and 15 are man-made agricultural ditches. All 5 natural waterbodies will be crossed by horizontal directional drill to avoid impacts.
- Impacts to groundwater from drilling will be avoided by setting and cementing surface casing below the deepest underground source of drinking water.
- RPS has obtained permits under Sections 404 and 401 of the Clean Water Act and will follow the requirements of those permits to limit impacts on surface water resources.

- RPS will prepare a stormwater pollution prevention plan (SWPPP) and implement best management practices during construction to prevent erosion and sedimentation impacts to waterbodies.

Biological Resources

- Natural vegetation impacts from the Project will be extremely limited. Nearly all vegetation impacts will be to planted sugarcane.
- There is limited habitat for wildlife and migratory birds in the Project area due to heavy agricultural use.
- There are no significant fisheries crossed by the Project.
- Endangered, threatened, and candidate species (federal and state) listed for Ascension and Assumption parishes were evaluated and the Project was determined to have no effect on any of the species due to a lack of suitable habitat.
- There will be no wetland impacts from the Project – all have been avoided.
- The Project is not located within floodplains.

Air Quality

- During construction, temporary emissions increases will occur from construction equipment and vehicular traffic but these impacts are expected to be minor and temporary.
- RPS will utilize water suppression during construction to control dust, as neeed.
- The pump station will be electric-driven to eliminate any air emissions.
- There will be no other emission sources for the Project.

Noise

- Temporary noise increases will occur during construction of the facilities but construction will be mainly limited to daylight hours to minimize the impact on nearby residents.
- RPS will deploy noise barriers as necessary to reduce noise from temporary drilling operations at nearby residences.
- Operational noise levels are anticipated to be low and RPS will employ noise minimization strategies in the design of the pump station.

Visual Resources

- The wells and other aboveground structures will not be tall and the facilities have been sited far from residences. The existing viewsheds are not expected to significantly change.
- RPS will implement vegetative screening around permanent aboveground facilities where practical.

Socioeconomic Conditions

- The RPS Project is expected to create 250 construction jobs and 50 permanent jobs.
- Project construction and operations will result in increased revenue for local businesses caused by the Project and workers spending in the local communities.
- RPS will pay ad valorem taxes and sales taxes that will benefit local jurisdictions.

- The RPS Project will provide a valuable service to existing and future industrial facilities in the area, helping to maintain and enhance job opportunities in the communities.
- Two of the three census tracts crossed by the Project are considered disadvantaged. RPS is creating a Community Benefits Fund based on a self-imposed fee on each ton of CO_2 injected and that money will go towards community benefit projects in the areas where the Project is located.

Cultural Resources

- Cultural resources surveys were performed for all Project facilities and RPS made several changes to the locations of facilities to avoid potential sites.
- No cultural resources sites will be impacted by the Project and the State Historic Preservation Office has concurred with that conclusion.

COST-BENEFIT ANALYSIS (BALANCING): Does the cost benefit analysis of the environmental impact costs balanced against the social and economic benefits of the proposed facility demonstrate that the latter outweighs the former?

Yes, the social and economic benefits will outweigh the environmental impacts of the RPS Project. As identified in the response to the previous question and detailed in the EIA, the environmental impacts of construction and operation of the Project will be minor. The social and economic benefits of a geologic sequestration project along the Mississippi River corridor will be substantial and far outweigh the minor environmental impacts associated with the Project. Further support for this is presented below.

The Louisiana Chemical Corridor is home to a large number of heavy industrial facilities that emit approximately 60 mtpa of CO_2 and that produce materials critical to global supply chains in agriculture, manufacturing, pharmaceuticals, construction, transportation, and consumer products. The successful deployment of CCS in this corridor will competitively advantage existing and future facility operators at the base of the cost-curve for low carbon heavy industry, thereby enhancing the competitiveness of U.S. heavy industry and strengthening export opportunities for U.S. manufacturers.

The RPS Project will directly benefit heavy industry facility operators considering expansion or greenfield investments in the Louisiana Chemical Corridor by providing a low-cost CCS solution. The State of Louisiana will benefit by making the Mississippi River industrial corridor an attractive investment location for low carbon heavy industrial operators. The RPS Project will represent an additional approximately $820 million investment in new clean energy infrastructure at full buildout and this direct benefit will far outweigh the minor environmental impacts associated with the project.

The construction and operation of heavy industrial facilities that the RPS Project will serve, including new greenfield facilities, provide good-paying jobs and can be expected to provide new union jobs at higher rates than average in Louisiana. Industrial sector wages in the River Parishes are some of the highest paying jobs in Louisiana. In Q1 2022, wages from industrial sector jobs in the River Parishes averaged $110,244[1], including $120,427 in manufacturing and $97,463 in construction. Industrial sector jobs in the River Parishes pay approximately 32% more than industrial jobs elsewhere in Louisiana and about 83% more than the average Louisiana job. The union membership rate among private-sector construction (8.9%)[2] and manufacturing (7.4%) employees in Louisiana is three times higher than the state-wide private-sector average union membership rate (2.9%). The rate of employees covered by a collective-bargaining agreement among private-sector construction (11.8%) and manufacturing (7.4%) is three times and two times higher respectively than the state-wide rate of private-sector employees covered by a collective-bargaining agreement (3.5%).

[1] Weighted average calculated with data from the United States Bureau of Labor Statistics Quarterly Census of Employment and Wages 2022

[2] Barry T. Hirsch and David A. Macpherson Current Population Survey (CPS) Outgoing Rotation Group (ORG) Earnings Files, 2021.

The RPS Project will also provide environmental and economic benefits to disadvantaged communities. Disadvantaged communities across the RPS Project's footprint will experience direct environmental benefits from lower annual and cumulative CO_2 pollution as well as the potential for reductions in other air emission constituents that may come with carbon capture at the industrial facilities. Disadvantaged communities will see direct economic benefits from the Project through the RPS Project's Community Benefits Fund, which will invest a portion of the CO_2 storage fee to directly benefit disadvantaged communities in the project area. These communities will also benefit economically from the ad valorem tax revenue the RPS Project will contribute to the local governments.

ALTERNATIVE PROJECTS: Are there alternative projects which would offer more protection to the environment than the proposed facility without unduly curtailing non-environmental benefits?

No, there are no alternative projects that would offer more protection to the environment than the proposed facility without unduly curtailing non-environmental benefits of the Project. In the separate EIA document, Section 3.2 details project design and technology alternatives. In that section of the EIA, RPS provides an evaluation of alternative CO_2 transport methods, alternative sequestration technologies and approaches, and alternative injection wellfield designs. The evaluation in Section 3.2 of the EIA concludes that the Projects' transport of CO_2 via pipeline is preferable to truck or rail transport, the Projects' geologic sequestration of CO_2 is preferable to enhanced oil recovery or surface-based mineralization or carbon utilization, and that the proposed wellfield design is preferable to alternatives with fewer higher-rate wells or more lower-rate wells. The siting criteria for the geologic storage sites show how RPS optimized among geologic suitability, minimizing environmental and community impacts, and avoiding artificial penetrations.

ALTERNATIVE SITES: Are there alternative sites which would offer more protection to the environment than the proposed facility site without unduly curtailing non-environmental benefits?

No, there are no alternative sites that would offer more protection to the environment than the proposed Project site without curtailing non-environmental benefits of the proposed Project. In the separate EIA document, Section 3.3 details site alternatives. In that section of the EIA, RPS provides an evaluation of alternative geologic storage sites and alternative aboveground facility sites. Section 3.4 details alternative pipeline routes.

By selecting a location near to Geismar, Louisiana, but on the west side of the Mississippi River, RPS is able to avoid populated areas but still be near to large emission sources of CO_2 and sources of power for operation of Project facilities. By selecting an area that is mostly used for sugarcane farming, RPS is able to avoid wetland impacts that would occur if the Project were located in wooded, undeveloped tracts. The agricultural landscape will allow RPS to utilize existing public roads and farm roads for access without having to construct new roads. In addition, the RPS Project location allows for the avoidance of existing oil and gas wells and subsurface faulting that could provide additional challenges for the storage of CO_2.

MITIGATING MEASURES: Are there mitigating measures which would offer more protection to the environment than the facility as proposed without unduly curtailing non-environmental benefits?

No. There are no mitigating measures that would offer more protection to the environment than the facility as proposed without unduly curtailing non-environmental benefits.

As detailed in the EIA, RPS has already implemented a number of mitigation measures to avoid and minimize impacts from the RPS Project. These include:

- Siting the Project in an area with suitable geology for geologic storage of CO_2
- Siting the Project in an area with no artificial penetrations.
- Utilizing existing farm roads for access to facilities.
- Siting facilities in a manner to avoid impacts to coastal resources.
- Crossing all natural waterbodies via horizontal directional drill to avoid direct impacts.
- Setting and cementing surface casing below the deepest underground source of drinking water to avoid impacts to drinking water.
- Implementing best management practices during construction to prevent erosion and sedimentation impacts to waterbodies.
- Siting the Project in an area that will cause no effect to protected species.
- Avoiding all wetland impacts.
- Developing a pump station that is electric-driven and does not have air emissions.
- Using water suppression during construction to control dust.
- Limiting construction noise to daytime hours to the maximum extent possible.
- Deploying noise barriers to reduce noise at residences.
- Employing noise minimization strategies in the design of the pump station.
- Implementing vegetative screening around permanent aboveground facilities where practical.
- Creating a Community Benefits Fund based on a self-imposed fee on each ton of CO_2 injected and that money will go towards community benefit projects in the areas where the Project is located.
- Revising Project plans to avoid all cultural resources sites.