ENVIRONMENTAL INFORMATION ASSESSMENT

River Parish Sequestration Project

In Support of Class VI Applications for:

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

Prepared by: River Parish Sequestration, LLC

December 2025

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TECHNICAL ABBREVIATIONS AND ACRONYMS

ANSI	American National Standards Institute
APE	Area of Potential Effects
API	American Petroleum Institute
AoR	Area of Review
AQI	Air Quality Index
AQS	Air Quality System
ASME	American Society of Mechanical Engineers
ATWS	additional temporary workspace
C&E	Louisiana Department of Conservation and Energy
CAA	Clean Air Act
CarbonSAFE	Carbon Storage Assurance Facility Enterprise
CBSA	Core-based Statistical Area
CCS	carbon capture and storage
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
CUP	Coastal Use Permit
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DAC	Disadvantaged Community
DOE	U.S. Department of Energy
DOI	U.S. Department of Interior
EIV	Environmental Information Volume
EOR	enhanced oil recovery
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
F	Fahrenheit
°F	degrees Fahrenheit
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
Ft	feet
GIS	geographic information system
HDD	horizontal directional drill
HUC	hydrologic unit code
Hwy	highway
IPaC	Information Planning and Consultation
km	kilometer
LCRP	Louisiana Coastal Resources Program
LDENR	Louisiana Department of Energy and Natural Resources
LDEQ	Louisiana Department of Environmental Quality
LDWF	Louisiana Department of Wildlife and Fisheries
LLC	Limited Liability Company
MAOP	maximum allowable operating pressure
MMt	million metric tons

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MTPA	million metric tons per annum
MMTPA	million metric tons per annum
MOP	maximum operating pressure
MP	milepost
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NETL	National Energy Technology Laboratory
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NLCD	National Land Cover Database
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
O_3	ozone
Pb	lead
$PM_{2.5}$	particulate matter with a diameter of 2.5 micrometers or less
PM_{10}	particulate matter with a diameter of 10 micrometers or less
Project	River Parish Sequestration Project
psig	pounds per square inch gauge
ROW	right-of-way
RPS	River Parish Sequestration, LLC
RPS Project	River Parish Sequestration Project
SHPO	State Historic Preservation Office
SO_2	sulfur dioxide
UDP	Unanticipated Discovery Plan for Cultural Resources and Human Remains
USACE	U.S. Army Corps of Engineers
USDW	underground source of drinking water
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	volatile organic compound

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1. 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) (currently renamed to the "Louisiana Department of Conservation and Energy [C&E]) on February 5, 2024.

Table 1-1. Class VI Permit Applications Submitted by RPS

Class VI Injection Well	Parish	EPA		C&E		
		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
RPN-4-INJ	Iberville	July 10, 2023	Aug. 1, 2023	Feb. 5, 2024	Mar. 1, 2024	45057
RPN-5-INJ	Iberville	July 10, 2023	Aug. 1, 2023	Feb. 5, 2024	Mar. 1, 2024	45058
RPS-1-INJ	Assumption	Aug. 31, 2023	Sep. 20, 2023	Feb. 5, 2024	Mar. 1, 2024	45067
RPS-2-INJ	Assumption	Aug. 31, 2023	Sep. 20, 2023	Feb. 5, 2024	Mar. 1, 2024	45068

Note: Wells RPS-1-INJ and RPS-2-INJ were submitted in one application but were given separate application numbers by LDNR.

Document Purpose and Scope

The Louisiana Constitution, Article IX, §1 and the Louisiana Revised Statutes (La. R.S. 30:2018) require an Environmental Impact Assessment (EIA), also referred to as a response to the "IT Decision," to be developed in support of agency permitting decisions such as Class VI permits. This document provides the EIA for three of the above-listed Class VI injection well permit applications (RPN-1-INJ, RPN-2-INJ, and RPN-3-INJ) and associated infrastructure, as those are the first wells and pipelines RPS expects to develop. Additional EIA documents and IT Decision responses will be developed and submitted under separate cover for the Class VI permit applications identified in Table 1 that are not covered by the scope of this document (RPN-4-INJ, RPN-5-INJ, RPS-1-INJ, and RPS-2-INJ).

The IT questions are as follows:

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?

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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?

Responses to these five “IT Decision” questions are contained in a separate document. This EIA provides information and analyses to support the responses to those five questions.

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2. PROJECT DESCRIPTION

The RPS Project is a proposed carbon dioxide (CO_2) transportation and storage project located in Ascension and Assumption Parishes, Louisiana. The RPS Project has been designed to transport, inject, and permanently store anthropogenic CO_2 below ground from industrial emitters located along the Mississippi River between Baton Rouge and New Orleans, Louisiana. Figure 2-1 shows the general Project location.

Figure 2-1. RPS Project Location

2.1. Project Purpose and Need

The purpose of the RPS Project is to provide a long-term, secure storage solution for industrial emissions of CO_2 along the Mississippi River near Geismar, Louisiana, thereby reducing future CO_2 emissions into the atmosphere. RPS has secured a commercial contract to inject at least 0.9 million tons of CO_2, and up to 4 million tons of CO_2, annually starting in 2027. There are several additional existing and proposed large industrial emitters of CO_2 in the Geismar area that are evaluating capturing CO_2 for transportation and permanent storage. The construction and operation of the RPS facilities, outlined below, will allow RPS to begin operations in 2027 and expand those operations to meet the commercial needs of several industrial CO_2 sources in the Geismar area.

2.2. Proposed Facilities

The proposed RPS Project facilities covered by this EIA and shown in Figure 2-2, the first facilities RPS anticipates placing into service will consist of the construction and operation of 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.

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- 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.

Each injection well will be capable of injecting up to two million metric tons per annum (MTPA) of CO_2 for a total annual CO_2 injection capacity of 6 MTPA. The RPS Project will be capable of storing 176 million metric tons (MMt) of CO_2 over 30 years. RPS has leased the necessary pore space for the RPS Project.

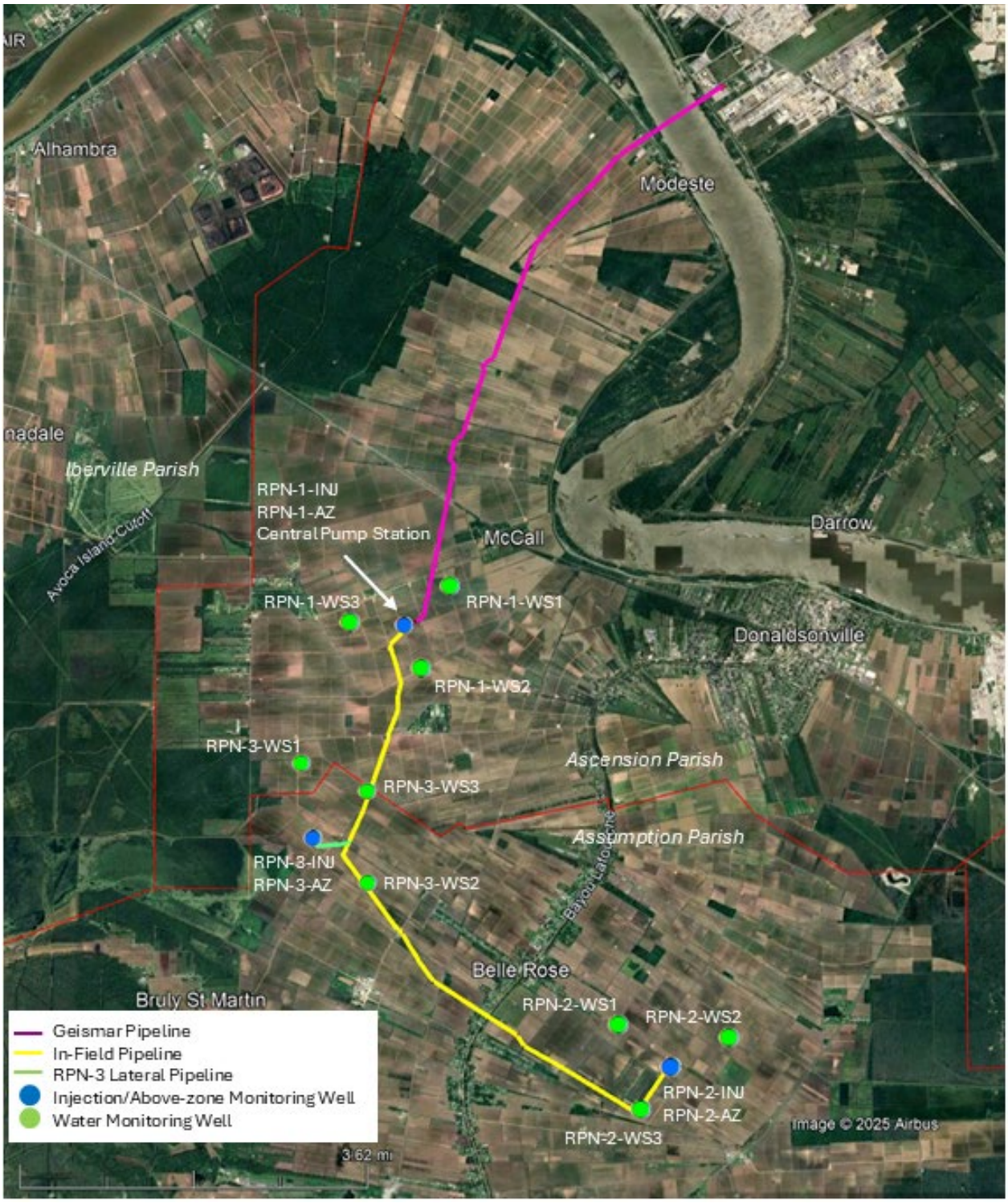

Figure 2-2. RPS Project Overview

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2.2.1. Injection Wells

The three Class VI injection wells detailed in this EIA are listed in Table 2-1.

Table 2-1. RPS Project Injection Wells

Injection Well	Parish, State	Total Depth (ft)	Annual Injection Capacity (mmtpa)	Years of Injection	Total Injection Capacity (mmt)
RPN-1-INJ	Ascension, LA	10,383	2	30	60
RPN-2-INJ	Assumption, LA	10,794	2	30	60
RPN-3-INJ	Assumption, LA	12,039	2	30	60

2.2.2. Monitoring Wells

Each injection well will have four (4) associated monitoring wells within the Area of Review (AoR) surrounding each injection well as follows:

- Three (3) groundwater monitoring wells that extend into the base of the lowermost underground source of drinking water (USDW). These three monitoring wells will be located in a generally triangular pattern around the injection well and will be used to sample and monitor groundwater concentrations of CO_2 in the lowermost USDW.
- One (1) above-zone monitoring well that will extend into the deepest mappable sand located above the primary upper confining layer of the injection zone. Each above-zone monitoring well will be located on the same pad site as the injection well. The above-zone monitoring well will be perforated in a sand zone and used for pressure monitoring. If pressure data indicate deviation from expected values, RPS may periodically collect fluid samples for analysis from this well.

Table 2-2 provides a listing of the monitoring wells for the Project.

Table 2-2. RPS Project Monitoring Wells

Monitoring Well	Parish, State	Distance from Injection Well (ft)	Direction from Injection Well	Description
RPN-1				
RPN-1-AZ	Ascension, LA	50	South	Above-zone monitoring well
RPN-1-WS1	Ascension, LA	3,336	Northeast	USDW monitoring well
RPN-1-WS2	Ascension, LA	2,620	South	USDW monitoring well
RPN-1-WS3	Ascension, LA	3,024	West	USDW monitoring well
RPN-2				
RPN-2-AZ	Assumption, LA	50	Southwest	Above-zone monitoring well
RPN-2-WS1	Assumption, LA	3,696	Northwest	USDW monitoring well
RPN-2-WS2	Assumption, LA	3,546	East-Northeast	USDW monitoring well
RPN-2-WS3	Assumption, LA	2,853	Southwest	USDW monitoring well
RPN-3				
RPN-3-AZ	Assumption, LA	50	Southwest	Above-zone monitoring well
RPN-3-WS1	Ascension, LA	4,148	North	USDW monitoring well
RPN-3-WS2	Assumption, LA	3,936	Southeast	USDW monitoring well
RPN-3-WS3	Assumption, LA	3,897	Northeast	USDW monitoring well

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2.2.3. Pipelines

The RPS Project evaluated in this EIA includes three pipeline segments described below.

Geismar Pipeline

The Geismar Pipeline is a proposed 7.1-mile-long, 16-inch-diameter pipeline that will connect the Central Pump Station with industrial emitters on the east side of the Mississippi River, in Geismar, Louisiana, to allow for the transport of CO_2 from those industrial emitters to the storage field. The Geismar Pipeline will be entirely located in Ascension Parish, Louisiana.

In-Field Pipeline

The In-Field Pipeline is a proposed 7.3-mile-long, 16-inch-diameter pipeline that will distribute CO_2 among the injection wells. The In-Field Pipeline will be located in Ascension and Assumption parishes, Louisiana.

RPN-3 Lateral Pipeline

The RPN-3 Lateral Pipeline is a proposed 0.4-mile-long, 10-inch-diameter pipeline that will transport CO2 from the In-Field Pipeline to RPN-3-INJ. The RPN-3 Lateral Pipeline will be located entirely in Assumption Parish, Louisiana.

2.2.4. Pump Station

The Central Pump Station will be located adjacent to the east of the RPN-1 injection well. The purpose of the Central Pump Station is to collect, meter, and pump the supercritical CO_2 stream into the In-Field Pipeline and to the three injection wells. The Central Pump Station will be fully electric-powered facility.

2.2.5. Access Roads

Numerous access roads will be needed for construction and operation of the facilities to allow equipment and vehicular traffic to traverse from public roads to the pump station, wells, and pipelines.

Central Pump Station and Wells

The Central Pump Station and all injection and monitoring wells will require temporary and permanent access roads to allow for construction and operational maintenance activities. These permanent access roads needed for the Central Pump Station and the wells are listed in Table 2-3.

Table 2-3. Permanent Access Roads to the Central Pump Station and Wells

Facility	Length (ft)
Central Pump Station / RPN-1-INJ / RPN-1-AZ	1,396
	2,312
RPN-1-WS1	1,061
RPN-1-WS2	3,374
RPN-1-WS3	1,685
RPN-2-INJ / RPN-2-AZ	7,125
RPN-2-WS1	8,852
RPN-2-WS2	885
RPN-2-WS3	4,116
RPN-3-INJ / RPN-3-AZ	6,644
RPN-3-WS1	116
RPN-3-WS2	5,523
RPN-3-WS3	3,036

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Pipelines

Several temporary access roads, which are existing farm roads, will be needed for construction of the pipelines but none of those temporary roads will be permanent. These temporary access roads are listed in Table 2-4. Public roads and the pipeline right-of-way will provide permanent access during operations.

Table 2-4. Temporary Access Roads for Pipeline Construction

Road Name	Milepost	Length (ft)
Geismar Pipeline		
TAR G01	5.8	1,469
TAR G02	5.7	2,638
TAR G03	4.0	7,632
TAR G04	3.6	6,758
TAR G05	2.7	5,766
TAR G07	1.7	3,360
TAR G08	1.4	2,802
TAR G08A	1.2	1,260
TAR G08C	1.0	1,755
TAR G09	0.6	21
TAR G10	0.6	30
TAR G11	0.2	1,749
TAR G12	0.0	2,015
In-Field Pipeline		
INFI TAR 01	4.3	2,200
INFI TAR 02	5.1	1,169
INFI TAR 03	5.2	1,046

2.3. Land Requirements

The RPS Project will require land for construction (temporary impacts) and operation (permanent impacts). Table 2-5 provides details on the temporary and permanent land requirements for the Project.

Table 2-5. Land Requirements for the RPS Project

Facility	Construction (Temporary) (acres)	Operations (Permanent) (acres)
Pump Station and Wells		
Central Pump Station / RPN-1-INJ / RPN-1-AZ	7.7	6.0
RPN-1-WS1	0.3	0.1
RPN-1-WS2	0.3	0.1
RPN-1-WS3	0.2	0.1
RPN-2-INJ / RPN-2-AZ	3.0	1.1
RPN-2-WS1	0.4	0.1
RPN-2-WS2	0.4	0.1
RPN-2-WS3	0.4	0.1
RPN-3-INJ / RPN-3-AZ	4.0	1.1
RPN-3-WS1	0.4	0.1
RPN-3-WS2	0.4	0.1

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Facility	Construction (Temporary) (acres)	Operations (Permanent) (acres)
RPN-3-WS3	0.4	0.1
Access Roads	19.8	19.8
Subtotal	**37.7**	**28.9**
Geismar Pipeline		
Pipeline ROW	43.5	42.8
ATWS	42.9	0
Access Roads	13.7	0
Subtotal	**100.1**	**42.8**
In-Field Pipeline		
Pipeline ROW	58.9	44.1
ATWS	35.1	0
Access Roads	1.6	0
Subtotal	**95.6**	**44.1**
RPN-3 Lateral Pipeline		
Pipeline ROW	4.0	2.5
ATWS	2.2	0
Subtotal	**6.2**	**2.5**
TOTAL	**239.6**	**118.3**

2.3.1. Central Pump Station

The Central Pump Station will be co-located adjacent to the pad for the RPN-1-INJ injection well and the RPN-1-AZ above-zone monitoring well. Construction of these facilities will require 7.7 acres and the operational footprint will be 6.0 acres.

2.3.2. Wells

Each of the wells will require workspace for drilling and the construction of a permanent pad site. Each permanent pad site will be covered in gravel or concrete.

2.3.3. Pipelines

Each of the pipeline segments will have a construction right-of-way (ROW) that is 75 feet wide. The permanent easement for each pipeline segment will be 50 feet wide.

2.4. Construction Workforce and Schedule

Construction of the RPS Project will commence in 2026 with the RPN-1-INJ injection well, the associated RPN-1 monitoring wells, and approximately one mile of the In-Field Pipeline south of the RPN-1-INJ injection well. Construction of the remainder of the project facilities will follow the initial facilities and be constructed between 2027 and 2030. The construction workforce to build out the RPS Project facilities is estimated to be 250 workers.

Typical daily work hours would be within daylight periods, with occasional extended hours during HDD or critical tie-ins. Peak construction workforce would vary by segment; pipeline construction and HDD operations would represent the highest workforce concentrations. Temporary laydown and ATWS would be used where needed and restored upon completion.

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Operations of the RPS Project will commence in 2027 with initial injection of CO_2 into RPN-1-INJ. Operations of the remaining facilities will commence between 2028 and 2030. The operations workforce needed for the RPS Project will be 50 full-time workers.

2.5. Construction Methods

Typical construction methods for the pump station, wells, and pipelines are described below.

2.5.1. Central Pump Station

Construction of the Central Pump Station will involve the following:

- Site preparation – surveying and clearing and grading of the site
- Civil works – construction of the foundations and structural supports for the equipment
- Mechanical installation – installation of the pump, CO_2 piping systems, and pressure vessels and headers
- Electrical and control systems installation – installation of the motors, the power distribution system, and the instrumentation
- Safety systems installation – installation of the leak detection, emergency shutdown, and fire protection systems
- Pre-commissioning and commissioning – running tests on the equipment and ensuring the performance of station

2.5.2. Wells

Each well site will be surveyed, cleared of vegetation, and leveled prior to the placement of board mats over the drilling site. A borrow ditch and ring levee, as shown in Figure 2-3, will typically encircle the drill pad to collect any runoff from the drilling operation.

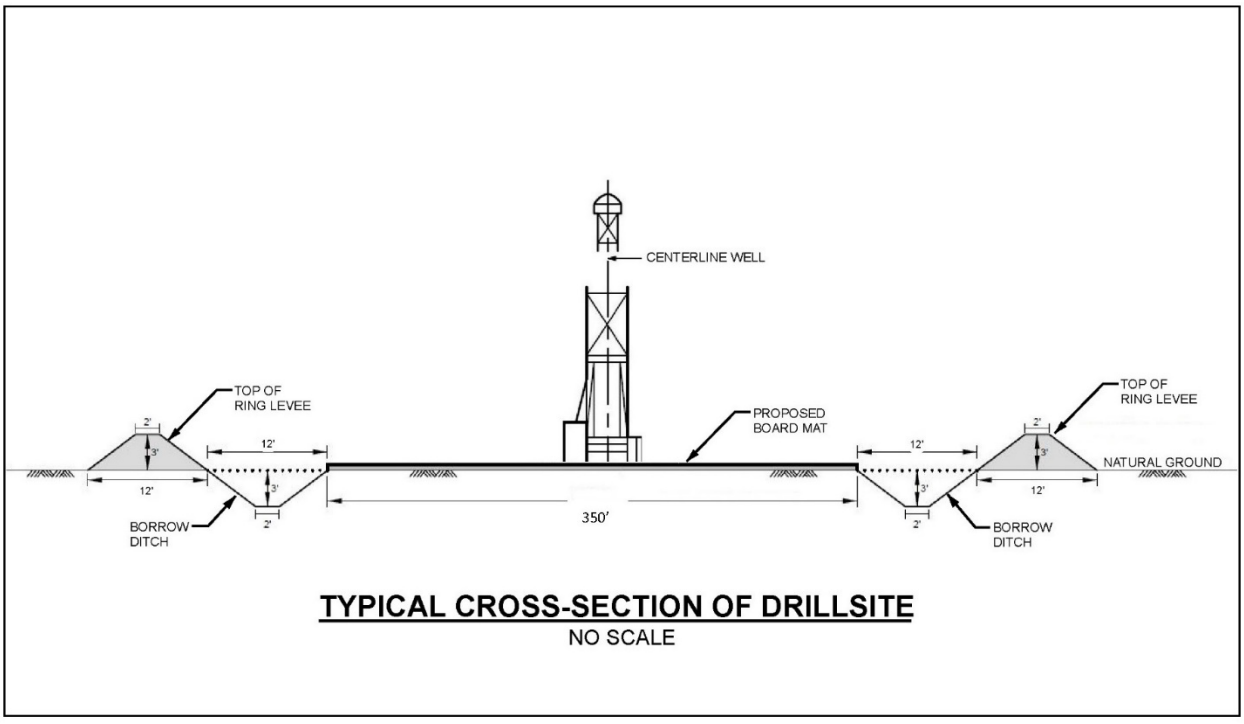

Figure 2-3. Typical Cross-Section of Drill Pad Site

Injection wells will be drilled through a surface hole using water-based mud and a surface casing will be installed and cemented to protect shallow aquifers. Drilling will then continue using appropriate drilling

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fluids to maintain wellbore stability and intermediate casing will be installed and cemented. A production, or long-string, casing will be set to the upper confining layer and then a smaller diameter casing will be run to total depth. Each casing string will be cemented from total depth of the respective string to the surface.

Construction procedures for monitoring wells are similar to procedures for the injection wells.

2.5.3. Pipelines

This section describes standard pipeline construction and restoration techniques as well as special construction procedures.

Standard Construction and Restoration Techniques

Conventional overland installation of the pipeline is essentially a moving assembly line with a construction spread (construction crew and equipment) proceeding along the construction ROW in a continuous operation. Most of the Pipeline construction process will be accomplished using conventional dry open-cut methods, which typically include the following steps, in order, as described in the following sections.

- ROW survey
- Clearing and grading
- Stringing
- Bending
- Welding
- Nondestructive weld inspection
- Ditch excavation
- Coating
- Lowering-in
- Backfilling
- Hydrostatic testing
- Caliper pigging
- Restoration of the ROW

ROW Survey

Prior to the start of construction, land surveys will be conducted, and the Pipeline centerline and the boundaries of the construction workspace will be marked with stakes. Existing utility lines, other sensitive resources, and areas to be avoided during construction as identified in landowner easement agreements or by federal/state/local agencies, will be located and marked to prevent accidental damage during Pipeline construction. Prior to construction, RPS's contractors will contact the "Call Before You Dig" or "One-Call" system to verify and mark all utilities along the Pipeline workspaces to minimize the potential for damage to other buried facilities in the area.

Clearing and Grading

After completion of the surveys and staking, large obstacles, such as trees, rocks, brush, and logs, will be removed from the ROW and ATWS areas. The entire width of the construction work area, including the construction ROW and ATWS, may be rough graded as necessary to allow for the safe passage of equipment and to prepare the work surface for Pipeline installation activities. Typically, the grading of the construction work areas will be completed with bulldozers and excavators. Where needed for erosion control, best management practices (BMPs) will be implemented as needed along the construction ROW and will be properly maintained throughout construction. BMPs will remain in place until permanent erosion controls are installed or restoration is completed.

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Stringing

Pipe will be transported by truck to the ROW. Sections (joints) of straight steel pipe will be placed in a single, continuous line (termed stringing) within the construction ROW.

Bending

Bending of pipe joints can be done both at the manufacturer (commonly referred as hot bend) or on the ROW (commonly referred as field bend). Field bends are typically bent on the ROW to allow the pipeline to follow the natural grade and direction changes of the ROW. Bending will be accomplished using track-mounted hydraulic bending machines.

Welding

The pipe joints will typically be aligned, welded together into a long segment, and placed on temporary supports (known as “skids”) at the edge of the ditch. Welders will use multiple passes to complete a full penetration weld. RPS will only use experienced welders who are qualified according to applicable American Welding Society, ASME, API standards and pass a project specific welding test.

Nondestructive Weld Inspection

Following welding, each weld will be inspected to assess if the structural integrity is consistent with the applicable standard. Radiographs or ultrasonic images will be taken and processed on-site for real-time results; and those welds that do not meet the requirements will be marked for repair or replacement.

Ditch Excavation

Following completion of welding, ditch excavation will be completed using backhoe excavators. The standard pipe depth of cover shall be a minimum of 36 inches and a slope not greater than 3:1. Excavated materials will be stockpiled along the ROW on the side of the ditch away from the construction traffic and pipe set-up areas.

Coating

After welding is completed, a coating crew will coat the area around the weld (also known as field joint coating). The entire coated Pipeline will be visually inspected for faults, scratches, or other defects and then electronically inspected for faults or areas where the coating is thinner than the coating thickness specification. If damage to the coating is discovered, the coating will be repaired before the pipe is lowered into the ditch.

Lowering-In

Prior to lowering-in the proposed pipeline, the work area, including the travel lane and ditch, is visually inspected to verify that the pipe and ditch configurations are compatible, all debris or foreign material has been removed and no significant water remains in the ditch. When removal of debris and foreign material and dewatering is complete, the pipeline will be lowered into the ditch by appropriately spaced sideboom tractors working in unison to avoid buckling of the pipe.

Backfilling

After the pipeline is lowered into the ditch and adequately protected, previously excavated subsoil will then be placed on and around the pipe in the ditch using bladed equipment or excavators. The areas directly over the ditch will be slightly crowned to accommodate soil settlement.

Cleaning of the Pipeline

Following the completion of distinct sections of tie-ins, each pipeline section will be internally cleaned with specially designed “pigs.” The pigs will remove dirt, water, or debris that was inadvertently collected within the Pipeline during the construction process.

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Hydrostatic Testing

Once installation and backfilling are completed and before the proposed Pipeline begins operation, the pipeline will be hydrostatically pressure tested in accordance with USDOT safety standards to verify its integrity and ability to withstand the MAOP. RPS will obtain all hydrostatic test water from municipal or nearby surface water sources, and it will be discharged in accordance with the terms of the LDEQ General Permit for discharges of hydrostatic test water. All discharges will be controlled to prevent erosion at the discharge location.

Caliper Pigging of the Pipeline

Following the completion of the tie-ins after hydrostatic testing, the Pipeline will be internally inspected using a caliper pig specifically designed to detect and provide a location of anomalies like ovality or dents in the installed pipeline. Identified defects not in accordance with applicable codes and specifications will be located, exposed and repaired or replaced if necessary. Any replacement will be made with hydrostatically tested pipe of the same wall thickness.

Restoration and Revegetation

Following all construction-related activities, the ROW will be cleared of equipment, matting and construction materials. The disturbed areas will typically be finish-graded as closely as possible to pre-construction contours and to conform to the adjacent off-ROW areas. Any excess excavated materials or materials deemed unsuitable for backfill will typically be evenly spread over the ROW in uplands or disposed in accordance with applicable regulations and landowner requirements. Compacted subsoil areas will then be mechanically de- compacted as needed. As necessary, permanent erosion control measures, such as diversion terraces and slope breakers, would be installed during this phase. Where topsoil segregation is conducted, topsoil will then be spread evenly across the ROW and erosion control devices will be installed in support of revegetation.

If necessary, disturbed upland areas may be seeded, with written recommendations for seed mixes, rates,

Cathodic Protection System

In addition to the external coating system, the pipeline will be provided with impressed current cathodic protection for external corrosion control.

Fiber Optic Cable

A Fiber Optic Cable will be installed in the same ditch as the Pipeline. This cable will run along the entire length of the Pipeline and be the communication link between all aboveground facilities.

Special Construction Procedures

Special pipeline construction procedures, described below, will be used for the following:

- Cropland crossings
- Waterbody crossings
- Horizontal directional drills
- Foreign pipeline crossings
- Road crossings

Cropland

In cropland areas, topsoil will be segregated at a minimum from the area above the ditch plus spoil side in cultivated or rotated fields, managed pastures, hayfields, and other areas at the landowner’s request, unless the landowner specifically approves otherwise. Where topsoil is segregated, it will be stockpiled along the construction ROW. The topsoil will remain segregated to prevent mixing with the subsoil during

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construction activities. After the Pipeline has been lowered into the ditch, the subsoil will be used for backfilling, and the segregated topsoil will then be spread across the graded ROW. In active cropland areas, the depth of cover above the pipeline will be at least 36 inches. Subsoil in all cultivated areas will be decompacted after backfilling and prior to replacing topsoil, if needed. If decompaction is necessary after topsoil has been replaced, the contractor will use a tiller (or similar equipment) to loosen compacted topsoil areas in a manner and at a depth that prevents mixing topsoil and subsoil.

Waterbody Crossings

Waterbodies not crossed by HDD will be crossed by the open-cut method. The open-cut method involves excavation of the pipeline ditch across the waterbody, installation of a segment of pipeline, and backfilling of the ditch. Ditch plugs may be necessary to prevent stream water from entering the adjacent pipe ditch. Depending upon the width of the crossing and the reach of the excavating equipment, excavation, and backfilling of the ditch will generally be accomplished using backhoes or other excavation equipment operating from one or both banks of the waterbody. If necessary for reach, the equipment may operate within the waterbody. Equipment in the waterbody will be limited to that needed to complete the work in the crossing. All other construction equipment will cross the waterbody using equipment bridges or alternative routes. Mitigation measures such as timber matting, silt fencing, stacked hay bales, sandbags, compacted earthen berms, will be implemented to reduce sedimentation and minimize impacts to the aquatic environment during construction.

Except where reasonable alternative access is available, temporary construction equipment crossings will be installed across waterbodies to gain access along the ROW during construction. Only the equipment necessary to construct the crossing and install the pipe will be allowed to work in the waterbody. ATWS may be needed adjacent to waterbodies to assemble and fabricate the pipe necessary to complete the crossings. Waterbody bed and bank contours will be restored to near pre-construction conditions, and the banks will be stabilized as soon as possible following installation of the pipe.

Horizontal Directional Drills

Where the CO_2 pipelines cross major waterbodies and transportation corridors RPS would utilize horizontal directional drilling (HDD) rather than open-cut trenching. HDD is a construction method that allows the Pipeline to be installed between two points by drilling rather than ditching. The length of Pipeline that can be installed by HDD depends on underlying soil conditions, pipe diameter, and available technology and equipment sizes. HDD involves drilling a pilot hole along a prescribed path and then enlarging that hole using reaming tools to achieve a hole large enough to accommodate the pipe. The reaming tools are attached to the drill string and drawn back to the drilling rig, thus progressively enlarging the pilot hole with each pass. During this process, drilling fluid consisting of bentonite clay and water is maintained in drilling pits within the construction work area and is continuously pumped into the hole to remove cuttings and maintain the integrity of the hole between the HDD entry and exit points. Once the hole has been sufficiently enlarged, a prefabricated segment of pipe will be attached behind the reaming tool on the exit side of the crossing and pulled back through the drill hole to the drill rig, completing the crossing.

Foreign Pipeline Crossings

Foreign pipeline crossings will be open cut and have a minimum clearance of 12 inches between the proposed Pipeline and the foreign pipeline. Minimum clearances will be in compliance with 49 CFR Part 192, as well as in accordance with pipeline crossing agreements with the foreign pipeline operators.

Road Crossings

Roads will be crossed by either the open-cut method or the conventional bore method, as described below.

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Open-Cut Method

Pipeline crossings of lightly traveled paved and unimproved rural dirt or gravel roads will typically be accomplished using the open-cut installation method. The trench for an open cut crossing is excavated with a backhoe or similar equipment, all backfill is compacted, and the road resurfaced. If open-cut road construction requires extensive construction time, provisions will be made for detours or other measures to permit traffic flow during construction.

Conventional Bore Method

Major roadway crossings will be crossed using conventional jack and bore methodology. These crossings are constructed independently by separate construction crews and later tied into the rest of the Pipeline. The jack and bore method involves the excavation of pits on either side of the transportation feature and the placement of a bore machine within one of the pits. This device will bore under the road and install the pipeline segment. Once the bore has reached the other pit, the pipeline segment will be tied in with the pipeline installed on the other side. With this method, the pipeline would pass under the roadway with little or no disturbance to traffic along the rail or roadway.

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3. ALTERNATIVES

This section details the alternatives considered for the RPS Project, including the No-Action Alternative, design and technology alternatives, site alternatives, and pipeline route alternatives. RPS identified system, siting, and routing alternatives and screened them using the following criteria: (1) ability to meet the purpose and need of the project; (2) technical feasibility and reliability; (3) geologic suitability and storage performance; (4) relative environmental footprint; and (5) constructability and cost. Alternatives that did not meet these criteria were eliminated from detailed analysis with a brief rationale provided below.

3.1. No-Action Alternative

Under the No-Action Alternative, the RPS Project would not be constructed and the environmental impacts would not occur. However, the benefits associated with the RPS Project's purpose of providing a CO_2 transportation and storage solution for industrial emitters in the Louisiana River Corridor would not be realized. The RPS Project's purpose and need would not be met under the No-Action alternative. As such, RPS does not consider adoption of the No-Action Alternative to be a suitable replacement for the proposed Project.

3.2. Project Design and Technology Alternatives

This section evaluates whether project design and technology alternatives could reasonably achieve the purpose of the RPS Project while offering equal or greater environmental protection. The analysis focuses on alternatives within the control of RPS, such as CO_2 transport, injection system configuration, and geologic sequestration approach. CO_2 capture will likely be performed by the emitters so capture technologies are not considered reasonable alternatives for this analysis.

3.2.1. Alternative CO_2 Transport Methods

Pipeline Transport

The RPS Project proposes to use a buried pipeline system designed for safe, continuous transport of CO_2 from emitters to the injection site. Pipeline transport is the industry standard for large-volume CO_2 movement. It offers high reliability, low surface disturbance once installed, and a reduced likelihood of accidental releases compared to other modes of transport. Therefore, pipeline transport was selected as the CO_2 transport method for the RPS Project.

Truck Transport

Truck transport of compressed CO_2 was evaluated at a conceptual level. Transporting the expected CO_2 volumes would require a very high frequency of truck trips, which would contribute to roadway congestion, increased air emissions, and greater accident potential. The use of trucks would also necessitate additional aboveground storage and transfer facilities. Given these limitations and impacts, truck transport is not considered feasible or preferable to pipeline transport.

Rail Transport

Rail transport was also reviewed as a possible method for moving CO_2. While rail can serve as a bulk transport mechanism, it would require specialized loading and unloading terminals, increased land requirements, and continued reliance on trucks or pipelines for final delivery to the injection site. Rail infrastructure does not run between Geismar and the RPS Project currently, making this approach less practicable and offering no environmental advantage over the proposed pipeline system.

3.2.2. Alternative Sequestration Technologies and Approaches

Geologic Sequestration

The RPS Project proposes to inject CO_2 into deep saline geologic formations with thick, regionally continuous confining units. This approach provides long-term, permanent geologic storage and is well

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supported by regulatory frameworks, modeling standards, and monitoring technologies. For these reasons, geologic sequestration was selected as the sequestration approach for the RPS Project.

Enhanced Oil Recovery (EOR)

EOR was reviewed as an alternative means of CO_2 storage; however, EOR is designed primarily for oil production, not permanent CO_2 storage. EOR typically involves the potential for re-release of CO_2 during oil production operations. Additionally, suitable EOR formations are not present near the project area. Implementing EOR would require much longer transportation routes and would not provide improved long-term CO_2 containment.

Surface-based Mineralization or Carbon Utilization

Surface-based mineralization and utilization options were evaluated conceptually. These approaches would require substantial aboveground infrastructure, including processing facilities and raw material handling, resulting in a far greater land footprint and energy demand. These methods are not currently feasible for the volumes of CO_2 anticipated for this project and do not offer the same permanence or containment reliability as deep geologic sequestration.

3.2.3. Alternative Injection Wellfield Designs

More Numerous, Lower-Rate Injection Wells

A design utilizing a larger number of injection wells that each operate at a lower rate of injection was considered. This approach would increase the number of well pads and associated infrastructure, resulting in a larger surface footprint, greater surface environmental impacts, and greater long-term monitoring requirements. The additional land disturbance and increased operational complexity make this option less desirable than the proposed configuration.

Fewer, Higher-Rate Injection Wells

A configuration relying on fewer, higher-rate injection wells was also evaluated. While this alternative would reduce the number of well pads, concentrating injection into fewer wells can create greater localized pressure changes and complicate reservoir management. This approach presents challenges for maintaining pressure control and may increase subsurface uncertainties and was therefore eliminated.

Proposed Wellfield Configuration

The proposed wellfield layout strikes a balance between distributing injection to maintain reservoir stability and minimizing surface disturbance. It provides operational flexibility, supports effective reservoir management, and aligns with regulatory expectations for long-term containment and monitoring. This configuration represents the most protective and feasible design among the alternatives reviewed.

3.3. Site Alternatives

3.3.1. Alternative Geologic Storage Sites

RPS selected the current project location over others for the establishment of a CCS project based on criteria outlined in Table 3-2.

Table 3-2. Criteria and Rationale for Project Location Selection

Criteria	Rationale	RPS Site Specifications
Avoidance of population density	Avoid/minimize community impacts	No residential areas are located above the CO_2 storage sites
Site access for construction/operations	Avoid/minimize land use impacts and interference with farming/cane grinding	Ability to use existing public roads and farm roads

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Criteria	Rationale	RPS Site Specifications
Minimal environmental impact	Avoid or minimize wetland impacts	None of the wells will cause impacts to wetlands or other sensitive environmental resources
Access to power in the field for operations	Minimize impacts from extending power lines	Ability to leverage existing electrical substations
Proximity to emission sources	Minimize impacts from pipeline construction	40 mtpa of CO_2 within 15 miles; 80 mtpa within 50 miles
Avoidance of existing oil and gas wells	Minimize permitting and execution risk	No corrective actions are required
Avoidance of subsurface faulting	Minimize permitting and execution risk	Wells and storage reservoirs are located to ensure avoidance of faulting

The Project location selected by RPS meets the criteria identified in Table 3-2. By selecting a location near to Geismar, Louisiana, but on the west side of the Mississippi River allows RPS to avoid populated areas and 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.

3.3.2. Alternative Aboveground Facility Sites

Alternative site locations were evaluated for Project aboveground facilities. Since the landscape is dominated by sugarcane fields, the alternative facility locations were all located within sugarcane fields with no discernable advantages over the selected locations.

Injection Wells

Aboveground facility locations for the Project were selected by first locating the three injection wells within the land areas leased by RPS and performing modeling of the proposed CO_2 injection to determine the sizes and locations of the resulting AoRs. The injection wells were then sited to ensure that the AoRs fit optimally within the leased acreage and were placed to avoid impacts to sensitive environmental areas and minimize impacts on existing sugarcane farming and operations.

RPN-1-INJ

RPN-1-INJ, which is co-located next to the Central Pump Station was originally considered to be located to the east side of the pump station. RPN-1-INJ will be drilled and completed prior to construction of the Central Pump Station, so the well and pump station locations were reversed so that the initial construction of the well would take place on the west side of the tract, adjacent to two existing farm roads, to minimize impacts to sugarcane farming operations. Figure 3-1 shows the proposed and alternative locations of RPN-1-INJ.

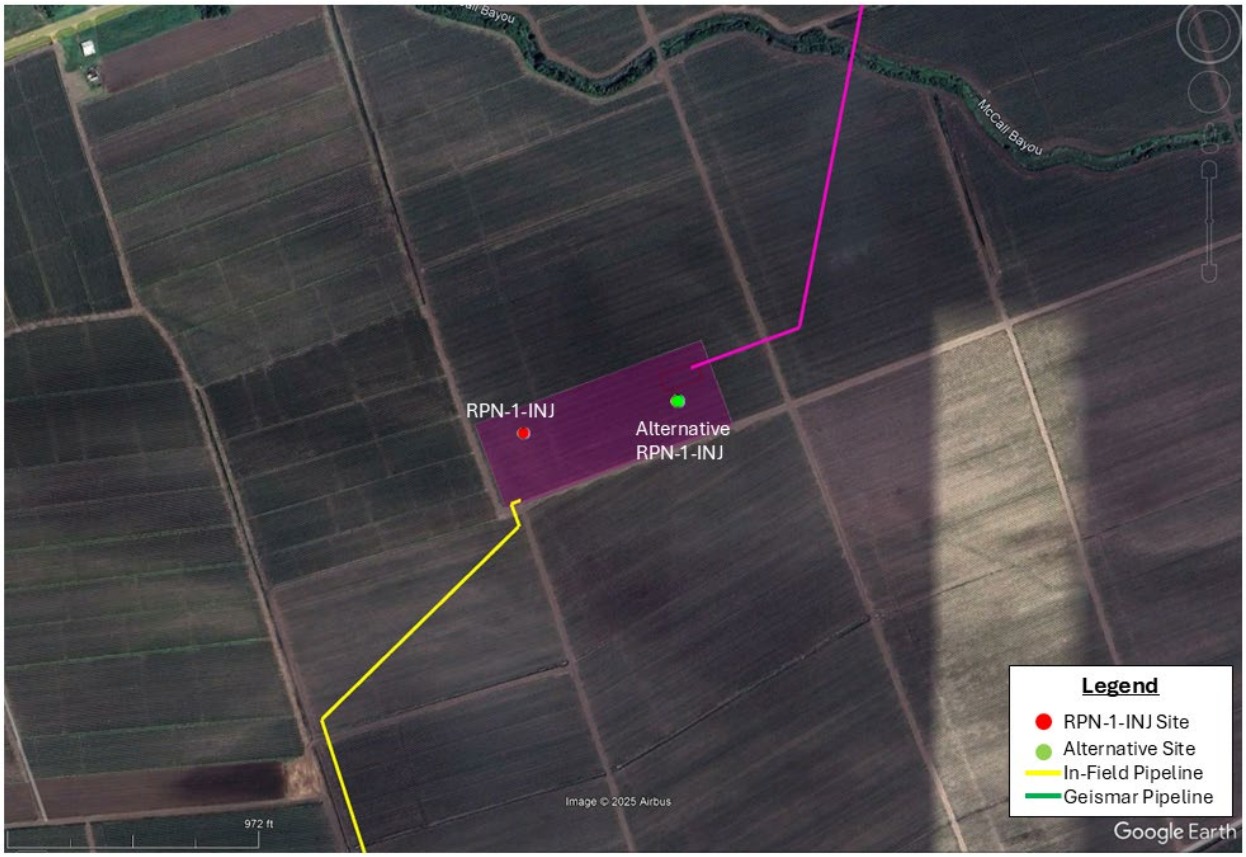

Figure 3-1. RPN-1-INJ Alternative Location

The proposed site and the alternative site are both located within sugar cane fields.

RPN-3-INJ

The RPN-3-INJ well was originally considered for a location approximately 1,725 feet south of the proposed site (Alternative Site) (see Figure 3-2). The location of RPN-3-INJ was moved to the north to optimize the AoR within the leased acreage and to provide a greater distance between the AoR and an existing salt dome location to the southwest of the Project area. Both locations are within sugarcane fields.

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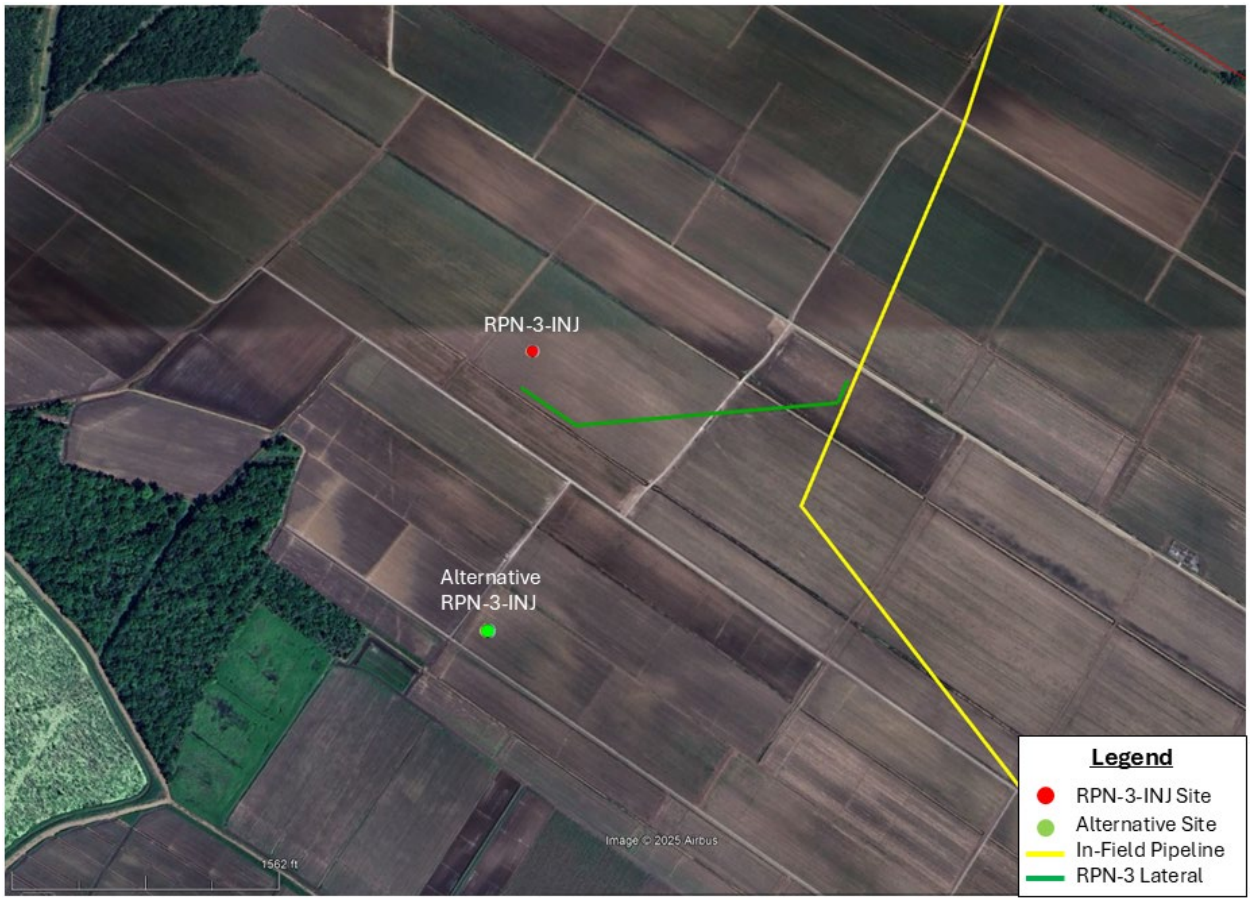

Figure 3-2. RPN-3-INJ Alternative Location

Monitoring Wells

Following siting of the injection wells, the monitoring well locations were determined as follows:

- One above-zone monitoring well to be located on the same well pad as the injection well
- Three water monitoring wells in a triangular pattern around the injection well

With the prevalence of sugarcane fields in the area, RPS sited each of the monitoring wells along existing farm roads according to the criteria above. All monitoring well locations are within cropland and there are no discernable differences between the selected locations and other potential locations for the monitoring wells.

Central Pump Station

As discussed in Section 3.4.1 above, the Central Pump Station and RPN-1-INJ will be located adjacent to each other. The Central Pump Station was originally planned to be on the western portion of the shared tract. The Central Pump Station was shifted to the eastern side of the tract because it will be constructed later than the RPN-1-INJ well and RPS sought to minimize impacts to the sugarcane operations at this location.

3.4. Pipeline Route Alternatives

Pipeline route alternatives that were evaluated include major route alternatives (Section 3.4.1) and minor route variations (Section 3.4.2).

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3.4.1. Major Route Alternatives

Four major route alternatives to the proposed route were evaluated for the Mississippi River crossing portion of the Geismar Pipeline. These major route alternatives are compared to the proposed route below.

Mississippi River Crossing Alternatives

Four alternative routes were considered for the Geismar Pipeline crossing of the Mississippi River, in addition to the proposed route. Each of these route alternatives traverses from the west side of the Mississippi River, crosses the river via HDD, and ends at the same location on the east side of the river where a future connection to industrial sources will be located. The proposed route and alternatives are described below and shown in Figure 3-3.

Proposed Route

The proposed pipeline route runs across cropland on the west side of the river and the HDD path avoids residential properties. On the east side of the river, the proposed route is aligned with the terminus of the pipeline, resulting in the proposed route being the most direct and having the shortest distance (2.7 miles) among the alternatives. The route on the east side of the river avoids impacts to existing industrial facilities.

Alternative 1

Alternative 1 would cross the Mississippi River approximately 0.2-mile north of the proposed route. On the east side of the river, the route would turn and run south along Hwy 75. Alternative 1 would be 0.5-mile longer than the proposed route and there would be challenges associated with construction along Hwy 75 due to limited space and multiple other pipelines already running along the highway. Alternative 1 was not selected due to the increased length over the proposed route and construction challenges along Hwy 75.

Alternative 2

Alternative 2 would cross diagonally across the Mississippi River, starting 0.2-mile south of the proposed route on the west side of the river and landing 0.1-mile north of the proposed route on the east side of the river. Like Alternative 1, Alternative 2 would traverse south along Hwy 75 before turning east to the pipeline terminus. Alternative 2 would be 0.5-mile longer than the proposed route and there would be challenges associated with construction along Hwy 75 due to limited space and multiple other pipelines already running along the highway. Alternative 2 was not selected due to the increased length over the proposed route and construction challenges along Hwy 75.

Alternative 3

Alternative 3 would cross the Mississippi River 0.3-mile south of the proposed route and would traverse on to undeveloped property on the east side of the river where the pipeline route would then make a northwesterly turn to the pipeline terminus. This alternative would be 0.4-mile longer than the proposed route. On the west side of the river, the HDD for Alternative 3 would cross under a residential property, which RPS has sought to avoid with the proposed route. The owner of the property on the east side of the river did prefer this alternative because the pipeline cutting across the undeveloped property could limit future development of that portion of the property. Therefore, Alternative 3 was eliminated from further review.

Alternative 4

Alternative 4 was developed to evaluate a route that would minimize congestion and industrial development along Hwy 75 in Geismar. Alternative 4 would cross the Mississippi River 1.0-mile south of the proposed route onto undeveloped wooded tracts on the east side of the river. Alternative 4 would then traverse to the east, north, and then back to the west following existing utility corridors. Alternative 4 would be 11.4 miles in length and would result in forested upland and forested wetland impacts that the proposed route would

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not have. In addition, the cost of construction of this alternative would be much greater than the proposed route due to the increased pipeline length. Therefore, Alternative 4 was eliminated.

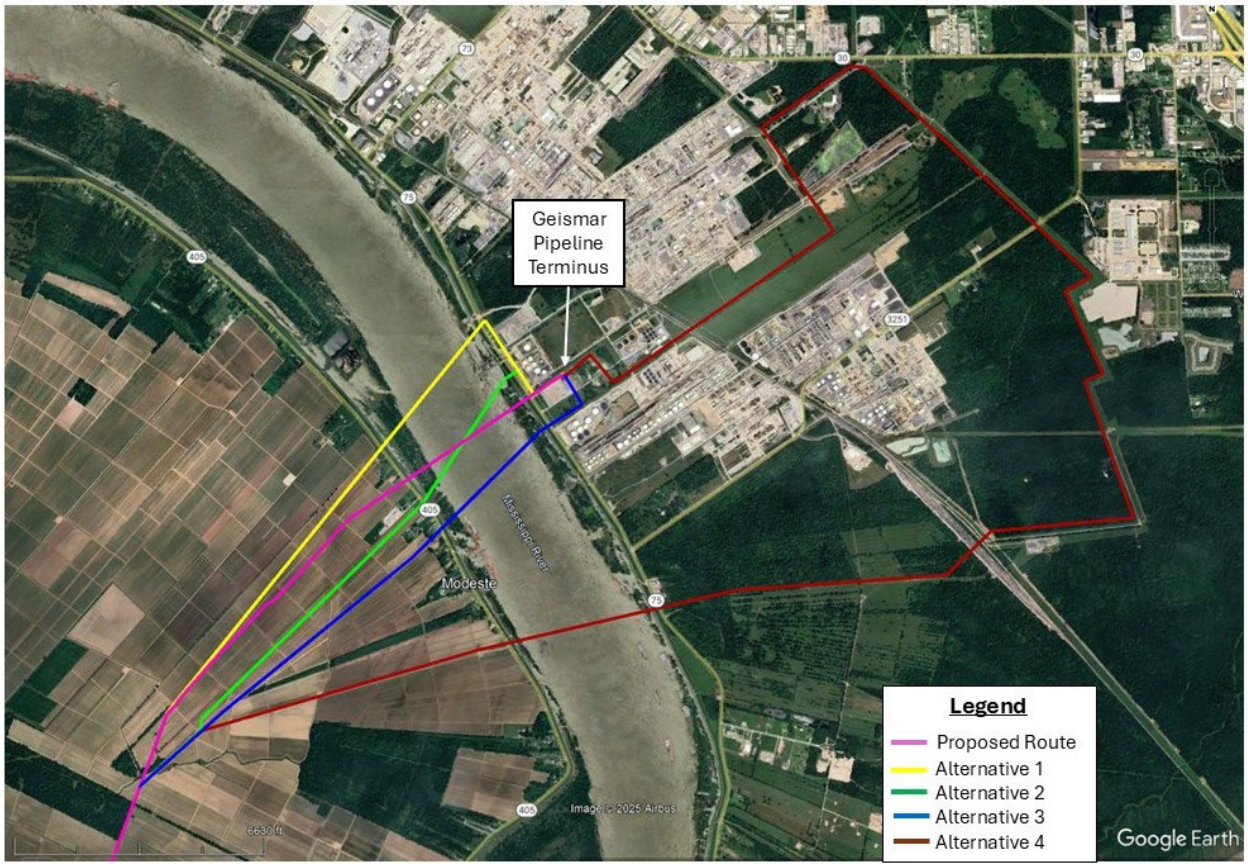

Figure 3-3. Mississippi River Crossing Alternatives

3.4.2. Minor Route Variations

Minor route variations implemented by RPS include realignments or alternative construction procedures to avoid potential cultural resources sites identified by field surveys. In order to protect these cultural resources sites, the route variations are described below but no mapping is provided.

Geismar Pipeline

Two minor route variations were implemented on the Geismar Pipeline to avoid two identified cultural resources sites. Both route variations resulted in the proposed pipeline path being altered to go around these potential sites. Both route variations are located in agricultural fields and have similar environmental impacts to the original route.

In-Field Pipeline

Two minor route variations were implemented on the In-Field Pipeline to avoid two identified cultural resources sites. For one site, the pipeline was routed away from the site in order to avoid a potential impact. For the other site, a planned HDD was extended by approximately 1,000 feet to result in the pipeline crossing beneath the potential site.

4. EXISTING ENVIRONMENT

This section describes the environment as it currently exists in the Project area.

4.1. Geology and Subsurface Resources

4.1.1. Regional Geology

The RPS Project targets a Miocene sand-rich sediment fairway in Southeast Louisiana for CO_2 sequestration. This fairway is sourced by the central and eastern axes of the ancestral Mississippi River and the ancestral Tennessee River (Combellas-Bigott and Galloway, 2002). The target storage complex consists of stacked successions of deltaic and fluvial sands deposited from the Lower Miocene through the early Pliocene interbedded with shale layers

The location of the RPS Project within the sediment fairway translates to excellent continuity of the major sand packages across the RPS Storage Site. The primary upper confining layer is a shale package in the basal Pliocene deposited during a regional transgression marked by the termination of Buliminella 1 foram (Galloway et al., 2000). The basal confining layer for the storage complex is the Lower Miocene shale associated with the termination of the Marginulina ascensionesis (Marg. 'A') fauna. Two secondary confining layers provide an additional regional seal above the proposed injection zone.

The total injection interval sediment package from the base of the upper confining Pliocene shale to the top of the basal Marg. 'A' shale is approximately 6,000 feet thick with more than 2,000 feet of net injectable sands interbedded with clay and mudstone. The primary confining unit is located approximately 3,850 feet below sea level and ranges in thickness from approximately 350 to greater than 1,000 feet across the Project area. The basal confining unit is located approximately 10,500 feet below sea level and ranges in thickness from 150 to 300 feet across the Project area. The reservoir and confining units are regionally continuous.

4.1.2. Soils

A variety of soils are mapped by the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) within the project area. Information on these soils is presented in Table 4-1.

Table 4-1. Soil Types within the Project Area

Soil Name	Drainage Class	Hydric Soil Rating	Prime Farmland?
Acy silt loam	Somewhat poorly drained	Non-Hydric, 0%	Yes
Commerce silt loam, 0-1% slopes	Somewhat poorly drained	Partially Hydric, 5%	Yes
Cancienne silt loam, 0-1% slopes	Somewhat poorly drained	Partially Hydric, 2%	Yes
Cancienne silty clay loam, 0-1% slopes	Somewhat poorly drained	Partially Hydric, 10%	Yes
Commerce silty clay loam	Somewhat poorly drained	Partially Hydric, 10%	Yes
Convent silt loam, 0-1% slopes	Somewhat poorly drained	Partially Hydric, 5%	Yes
Convent silt loam, 0-1% slopes, frequently flooded	Somewhat poorly drained	Hydric, 100%	No
Essen silt loam	Poorly drained	Partially Hydric, 10%	Yes
Jeanerette silt loam, 0-1% slopes	Poorly drained	Partially Hydric, 5%	Yes
Levees-Borrow pits complex, 0-25% slopes	Poorly drained	Partially Hydric, 40%	No
Schriever clay, 0-1% slopes, rarely flooded	Poorly drained	Hydric, 95%	Yes
Schriever silty clay loam, 0-1% slopes, rarely flooded	Poorly drained	Hydric, 90%	Yes

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Soil Name	Drainage Class	Hydric Soil Rating	Prime Farmland?
Thibaut clay, 0-1% slopes	Poorly drained	Partially Hydric, 10%	Yes
Vacherie silt loam, 0-1% slopes	Somewhat poorly drained	Partially Hydric, 5%	Yes

4.1.3. Regional Hydrogeology

The RPS Project is located in the southeastern Louisiana hydrogeologic system and collocated with two primary groundwater aquifers: the Mississippi River Alluvial Aquifer and the Chicot Equivalent Aquifer System. The principal Chicot equivalent units include the Gramercy, Norco, Gonzalez-New Orleans, and "1200-Foot Sand" aquifers. Groundwater occurs throughout the multiple interbedded and interconnected alluvial and terrace deposits ranging in age from Holocene to Lower Pleistocene and Upper Pliocene. Deposits generally contain coarser material at the base and fine upward from pea- and cobble-sized gravel to very fine sand and silt with interbedded clay units. The Grammercy aquifer, where present, overlies the Norco aquifer, which overlies the Gonzalez-New Orleans aquifer separated by a clay bed nearly 200 feet thick. The dip and general flow direction of the Chicot equivalent packages is to the south-southwest and the equivalent sands outcrop to the northeast near the northern edge of Livingston and St. Tammany Parishes

4.1.4. Seismicity

The Project area lies within a region characterized by very low seismic activity. A review of the U.S. Geological Survey (USGS) earthquake catalog indicates that only 11 seismic events of magnitude 0 or greater have been recorded in the region between 1843 and 2023. The closest recorded event was a magnitude 4.2 earthquake near Paincourtville, Louisiana, in 1930. No seismic events have been definitively linked to mapped regional faults in the vicinity.

Southern Louisiana contains numerous mapped regional faults, many of which are potentially active. However, slip on these faults is largely accommodated by aseismic creep, and they are not recognized as significant seismic sources. Importantly, none of the mapped regional faults are included in the USGS Quaternary Fault and Fold Database, which catalogs faults with evidence of seismic deformation within the last 1.6 million years. The nearest known active fault listed in the database is the Meers Fault in southwestern Oklahoma, approximately 500 miles northwest of the project site.

4.2. Land Use and Land Cover

Land use in the region reflects a mixture of industrial, agricultural, residential, and natural resource areas shaped by proximity to the Mississippi River, long-standing petrochemical development, and extensive agricultural activity. The area is flat with limited elevation above sea level and developed areas are those that are generally protected from flooding from the Mississippi River and other waterbodies. The area consists primarily of Mississippi River alluvial plains. Nearby communities such as Geismar and Donaldsonville are characterized by clusters of residential neighborhoods and supporting commercial development, while the surrounding landscape is largely composed of cultivated croplands, pasture, and managed open space. In the RPS Project area, agricultural land dominates the landscape on the west side of the Mississippi River while the east side of the river consists of developed industrial facilities.

4.2.1. Land Cover Types

RPS reviewed the National Land Cover Database (NLCD) (Dewitz, 2021), aerial photographs, and performed reconnaissance to determine the land use and land cover categories in the Project area. These include:

- Cultivated crops

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- Developed land:
  - Developed open space
  - Developed Low intensity
  - Developed Medium intensity
  - Developed High intensity
- Open water
- Woody wetlands

The sections below detail these land use and land cover categories and NLCD mapping of the Project area is shown in Figure 4-1.

Cultivated Crops
Cultivated Crop areas are those used for the production of annual crops (e.g., corn, soybeans, vegetables, tobacco, cotton) and perennial woody crops (e.g., orchards, vineyards) where crop vegetation accounts for >20% of total vegetation (Dewitz, 2021). In the RPS Project area, the vast majority of the land on the west side of the Mississippi River is Cultivated Crop land and nearly all of it is used to grow sugarcane.

Developed Land (Open Space, Low Intensity, Medium Intensity, and High Intensity)
Developed Open Space areas are those with a mix of constructed materials and a majority of vegetation. Impervious surfaces account for less than 20% of total cover (Dewitz, 2021). In the Project area, Developed Open Space areas include farm roads and open areas that are not currently in crop rotation.

Developed Low Intensity areas are found along rural road corridors and residential areas. These include areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20–49% of total cover (Dewitz, 2021). In the Project area, Developed Low Intensity areas are typically road corridors located on the west side of the Mississippi River.

Developed Medium Intensity areas in the Project footprint are limited to the east side of the Mississippi River, in Geismar, where industrial complexes exist. These include areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 50–79% of total cover (Dewitz, 2021).

Developed High Intensity areas in the Project footprint are limited to the east side of the Mississippi River, in Geismar, where industrial complexes exist. These include areas where people work or reside in very high numbers. Impervious surfaces account for 80–100% of total cover (Dewitz, 2021).

Open Water
Open Water areas are those with <25% cover of vegetation or soil and these areas include lakes, rivers, reservoirs, bays, and estuaries (Dewitz, 2021). In the RPS Project area, the Open Water area is the Mississippi River.

Woody Wetlands
Woody Wetland areas are those where forest or shrubland vegetation accounts for >20% of cover and the soil or substrate is periodically saturated with or covered by water. These areas typically include bottomland forests, swamps, and forested floodplains (Dewitz, 2021). In the RPS Project area, Woody Wetlands generally occur along the banks of streams/waterways.

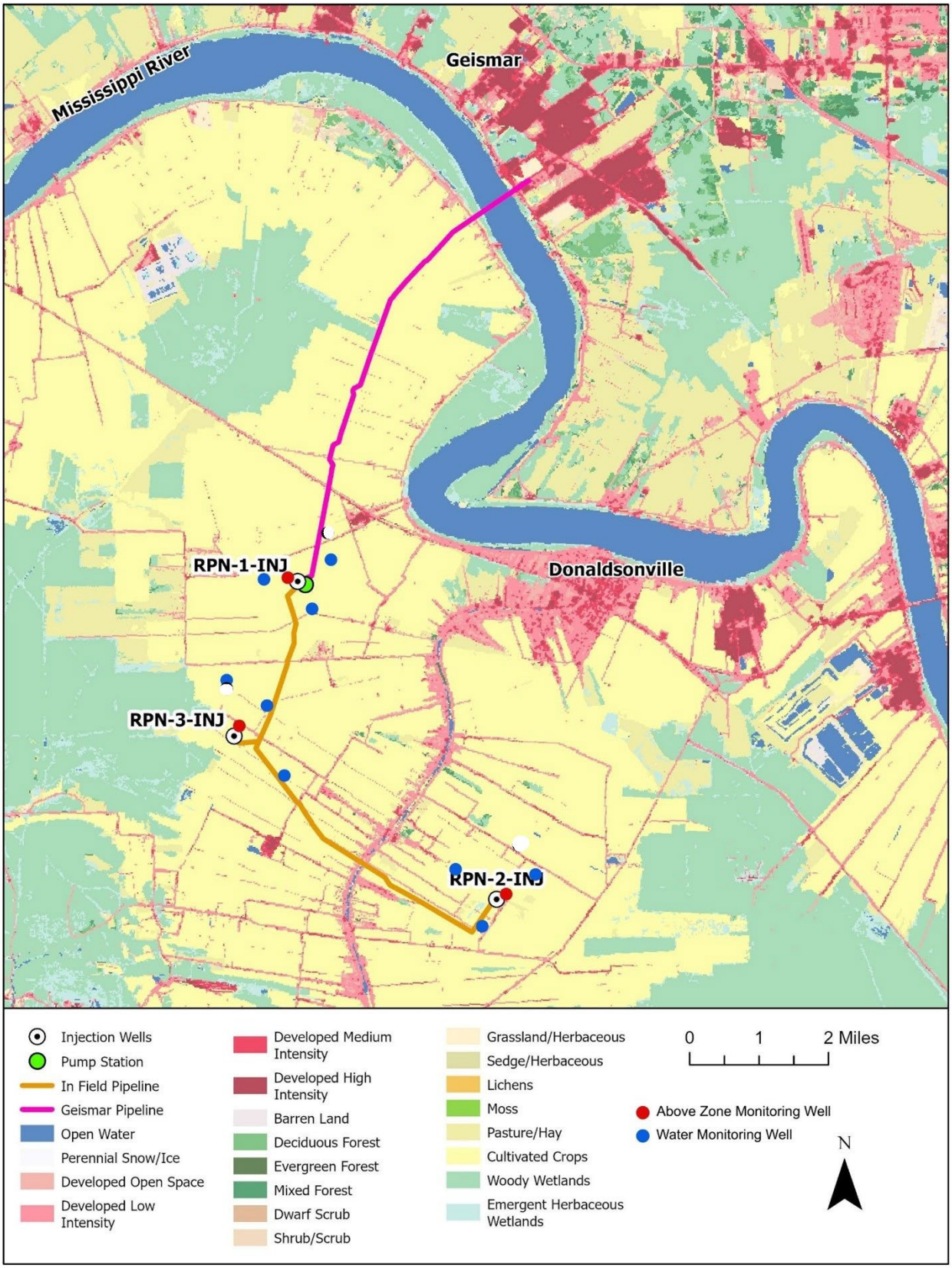

Figure 4-1. Land Use and Land Cover Types in the Project Area

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4.2.2. Residential Properties

Residential areas are very limited in the Project area. The few houses that do exist in the Project area are located along the few public roads that are present and these houses are generally spaced out on the landscape. Table 4-2 shows the nearest distances of permanent dwellings to the three injection wells. Only two permanent dwellings are located within the AoR of RPN-1-INJ and no dwellings are located within the AoRs of RPN-2-INJ or RPN-3-INJ.

Table 4-2. Nearest Permanent Dwellings to RPS Injection Wells/Pump Station

Facility	Distance to Dwelling (ft)	Direction to Dwelling
RPN-1-INJ/Central Pump Station	2,211	Northwest
	2,370	Northwest
RPN-2-INJ	5,391	Northwest
RPN-3-INJ	7,847	Southeast

4.2.3. Land Ownership and Lease Agreements

RPS is required to lease subsurface rights from landowners who will have CO_2 stored under their properties. The Project area contains a mixture of large land tracts, generally where sugarcane is grown, and smaller tracts along public roads, generally where residential tracts are located. RPS has leased subsurface rights from private landowners sufficient to cover the projected Areas of Review (AoRs) for CO_2 storage. Many of the lease agreements between RPS and the landowners also include the rights to site surface facilities for the Project, if needed. RPS has also leased subsurface rights from landowners outside the projected AoRs in order to have a sufficient buffer for potential CO_2 migration.

4.2.4. Existing and Planned Developments

There is one known, planned development in the area: the RiverPlex MegaPark. According to the website for the RiverPlex MegaPark (www.riverplexmegapark.com), it is a planned development of 17,000 continuous acres of property with 10 miles of Mississippi River frontage in West Ascension Parish. To-date, three planned industrial facilities have been announced to be located on portions of the RiverPlex MegaPark: a new Hyundai Steel Company steel mill; the new CF Industries Blue Point Complex, a low-carbon ammonia project; and the Clean Hydrogen Works Ascension Clean Energy clean ammonia project. All three of these facilities are proposed to be located along the Mississippi River, with frontage for vessels to dock. These projects are all in the development stage and none have broken ground on construction of new facilities.

A portion of the Geismar Pipeline will cross the proposed RiverPlex MegaPark site. RPS will work with the developers of these proposed projects to ensure that the path for the Geismar Pipeline will not interfere with planned construction or operation of the facilities.

4.2.5. Public or Conservation Land

There are no public lands or conservation lands within the Project area.

4.2.6. Natural, Recreational, or Scenic Areas

There are no natural, recreational, or scenic areas within the Project area.

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4.2.7. Contaminated or Hazardous Waste Sites

There are no known landfills, contaminated sites, or hazardous waste sites within the Project area.

4.2.8. Prime Farmland

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The Farmland Protection Policy Act of 1981 requires federal agencies to consider the effects of their actions on prime or unique farmland.

As identified in Section 4.1.2, most of the soil types covering the Project area are considered Prime Farmland soils.

4.2.9. Coastal Zone Management Areas

In the Project area, the boundary between Ascension and Assumption parishes marks the Louisiana Coastal Zone boundary. Assumption Parish is within the Louisiana Coastal Zone and Ascension Parish is outside the Coastal Zone.

Development activities within Louisiana's Coastal Zone are regulated by the Louisiana Coastal Resources Program (LCRP), which is administered by the C&E Office of Coastal Management. The primary regulatory tool of the LCRP is the Coastal Use Permit (CUP), which is required for any project with a "direct and significant impact" on coastal waters. The purpose of the LCRP is to protect, develop, and restore the state's coastal resources by encouraging multiple uses of these resources and adequate economic growth while minimizing adverse effects and resolving user conflicts. The CUP review process involves evaluating project plans against specific Coastal Use Guidelines to ensure consistency with the LCRP and to mitigate potential environmental impacts, particularly concerning wetland alteration, hydrology, and fish and wildlife resources.

The Louisiana Coastal Zone boundary in the Project area is the boundary between Ascension Parish and Assumption Parish, as shown in Figure 2-2.

4.3. Water Resources

This section describes the existing groundwater and surface water resources in the Project area.

4.3.1. Groundwater Resources

The RPS Project is located in the southeastern Louisiana hydrogeologic system and is co-located with two primary groundwater aquifers: The Mississippi River Alluvial Aquifer and the Chicot Equivalent Aquifer System. The principal Chicot equivalent units include the Gramercy, Norco, Gonzalez-New Orleans, and “1200-Foot Sand” aquifers. Groundwater occurs throughout the multiple interbedded and interconnected alluvial and terrace deposits ranging in age from Holocene to Lower Pleistocene and Upper Pliocene. Deposits generally contain coarser material at the base and fine upward from pea- and cobble-sized gravel to very fine sand and silt with interbedded clay units. The Grammercy aquifer, where present, overlies the Norco aquifer, which overlies the Gonzalez-New Orleans aquifer separated by a clay bed nearly 200 feet thick. The dip and general flow direction of the Chicot equivalent packages is to the south-southwest and the equivalent sands outcrop to the northeast near the northern edge of Livingston and St. Tammany Parishes.

The homes in the area are generally served by municipal water, which mainly comes from Bayou Lafourche. There are few groundwater wells in the area and most are used for agricultural purposes. The groundwater wells in the area are typically about 150 to 200 feet in depth. To prevent impacts to underground sources of

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drinking water (USDW) during drilling, all injection wells will have a surface casing that is set below the deepest USDW formation (typically about 2,800 feet deep) and is cemented to surface.

4.3.2. Surface Water Resources

The project components are within six different subwatersheds as defined by U.S. Geological Survey (USGS) hydrologic unit code (HUC) classifications. These subwatersheds are defined in Table 4-3.

Table 4-3. Subwatersheds within the Project Area

HUC Code	Subwatershed Name	Drainage Area (acres)
0807020040101	Bayou Francois	16,195
080701000105	Claiborne Island	38,547
080903020301	Bayou Sigur-Rocky Canal	33,577
080903020302	Bayou Corne-Grand Bayou	38,226
080903010102	Baker Canal North	28,491
080903010104	Bayou Verret-Bayou Citamon	31,371

In 2023, RPS conducted surveys of the Project area to identify and categorize waterbodies. The surveys found a total of 20 waterbodies: 12 crossing the Geismar Pipeline and 8 crossing the In-Field Pipeline. No waterbodies were found at other Project facility locations. The waterbodies identified along the Project are listed in Table 4-4.

Table 4-4. Waterbodies Crossed by the Pipelines

Milepost	Name / Description	Jurisdictional Water?	Pipeline Crossing Method
Geismar Pipeline			
0.4	McCall Bayou	Yes	HDD
0.4	Tributary to McCall Bayou	Yes	HDD
0.7	Man-made agricultural ditch	No	Open Cut
1.0	Man-made agricultural ditch	No	Open Cut
1.7	Man-made agricultural ditch	No	Open Cut
2.3	Man-made agricultural ditch	No	Open Cut
3.9	Tributary to Caballero Bayou	Yes	HDD
4.1	Caballero Bayou	Yes	HDD
4.1	Tributary to Caballero Bayou	Yes	HDD
4.3	Man-made agricultural ditch	No	Open Cut
6.1-6.8	Mississippi River	Yes	HDD
7.0	Man-made ditch	No	Open Cut
In-Field Pipeline			
0.6	Man-made agricultural ditch	No	Open Cut
0.8	Man-made agricultural ditch	No	Open Cut
1.8	Man-made agricultural ditch	No	Open Cut
1.8	Man-made agricultural ditch	No	Open Cut
2.4	Man-made agricultural ditch	No	Open Cut
3.7	Man-made agricultural ditch	No	Open Cut
4.9	Bayou Lafourche	Yes	HDD

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Milepost	Name / Description	Jurisdictional Water?	Pipeline Crossing Method
7.2	Man-made agricultural ditch	No	Open Cut

4.4. Biological Resources

This section describes the existing vegetation, wildlife, fisheries, and state and Federally listed endangered or threatened species and their habitats, as well as sensitive habitats such as wetlands and floodplains.

4.4.1. Vegetation

The project area traverses through 3 ecoregions, Inland Swamps and Southern Holocene Meander Belts ecoregion of the Mississippi Alluvial Plain, and Baton Rouge Terrace ecoregion of the Mississippi Valley Loess Plains. The Inland Swamps ecoregion marks a transitional zone ranging from fresh waters of the southern backswamps to the saline waters of the deltaic marshes. Soils in the ecoregion are mostly poorly or very poorly drained, clayey Entisols and Vertisols. Swamp forest communities are dominated by bald cypress and water tupelo. In areas where freshwater flooding is more prolonged, the vegetative community is dominated by grasses, sedges, and rushes. This region contains one of the largest bottomland hardwood forest swamps in North America. The Southern Holocene Meander Belts ecoregion contains point bars, oxbows, natural levees, and abandoned channels throughout. Soils are somewhat poorly and poorly drained Inceptisols, Entisols, and Vertisols. The ecoregion contains minor species such as live oak, laurel oak, and Spanish moss. The bottomland forests have been cleared and the region has been extensively modified for agriculture, flood control, and navigation. The levee system is extensive throughout the region. Soybeans, sugarcane, cotton, corn, and pasture are the major crops, with crawfish aquaculture common. The Baton Rouge Terrace ecoregion occurs on the Pleistocene Prairie Terraces and is lower in elevation and has flatter topography than other ecoregions in the Mississippi Valley Loess Plains. The soils are mostly Alfisols with brown or grayish-brown, silt loam surfaces that developed in the loess parent materials. High sodium soils are common. The natural vegetation was influenced by the unusual soil conditions and by different forest types occurring in adjacent regions, with some upland hardwoods to the northwest, hardwood flatwoods and spruce pine-hardwood mixed forests across extensive broad flats, and many areas of bottomland hardwoods. Large areas of the mixed pine-hardwood forest have now been cleared for pasture, cropland, and urban uses. Urban uses cover about fifty percent of the region.

Vegetation in the RPS Project Area consists primarily of planted sugarcane (*Saccharum officinarum*). Other vegetation found along drainages and roadways consists primarily of Cherokee sedge (*Carex cherokeensis*), sugarberry (*Celtis laevigata*), Southern dewberry (*Rubus trivialis*), and water oak (*Quercus nigra*).

4.4.2. Wildlife and Migratory Birds

In the sugarcane fields, wildlife use is minimal. Wildlife generally prefer the wooded, undeveloped tracts that generally lie to the west of the RPS Project area.

Migratory birds in the RPS Project area would most likely be transient as the sugarcane fields do not provide suitable foraging or nesting habitat for most bird species.

4.4.3. Fisheries

There are no significant fisheries in the RPS Project area. Recreational fishing in the Project area would be limited to the Mississippi River and Bayou Lafourche.

4.4.4. Endangered, Threatened, and Special Status Species

RPS utilized the Information for Planning and Consultation (IPaC) system managed by the U.S. Fish and Wildlife Service (USFWS) to determine the potential occurrence of federally-listed threatened, endangered,

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and candidate species within the project area. In addition, the documentation of state-listed species by parish, which is maintained by the Louisiana Department of Wildlife and Fisheries (LDWF), was consulted. Table 4-5 identifies the federal- and state-listed species potentially occurring in the Project area.

Table 4-5. Federal- and State-Listed Species Potentially Occurring in the Project Area

Common Name	Scientific Name	Federal Status	State Status	Habitat Description
Mammals				
West Indian Manatee	*Trichechus manatus*	T	T	A marine species that prefers shallow, slow-moving waters of rivers, estuaries, saltwater bays, canals, and coastal areas.
Tricolored Bat	*Perimyotis subflavus*	C		Roost among leaf clusters of live or recently dead deciduous hardwood trees.
Reptiles				
Alligator Snapping Turtle	*Macrochelys temminckii*	C		Predominantly aquatic, this freshwater species prefers the deeper beds of large rivers, canals, and lakes.
Insects				
Monarch Butterfly	*Danaus plexippus*	C		Feed on the nectar of flowering plants but lay eggs only on milkweed.
Fish				
Pallid Sturgeon	*Scaphirhynchus albus*		E	Prefers large, silty rivers with swift currents and with sand flats and gravel bars.
Gulf Sturgeon	*Acipenser oxyrinchus desotoi*		T	Spend most of their time in freshwater rivers, where they reproduce.
Mollusks				
Inflated Heelsplitter	*Potamilus inflatus*		T	A mussel that inhabits soft, stable stream bottoms in slow and moderate currents.

Notes:
E = Endangered
T = Threatened
C = Candidate

The bald eagle (*Haliaeetus leucocephalus*) was delisted by the USFWS as a federally-threatened species in 2007 but is still protected by the Bald and Golden Eagle Protection Act. Bald eagle habitat generally includes rivers, estuaries, large lakes, reservoirs, and seacoasts and nests are typically found in tall trees near these open water areas.

No critical habitats for threatened, endangered, or special-status species exist in or near the Project area.

4.4.5. Wetlands

Wetlands are ecologically-sensitive areas that provide important functions such as flood storage and protection, water quality improvement, habitat support, and erosion control.

Regulatory Framework

The primary federal regulation governing wetlands is Section 404 of the Clean Water Act, which is administered jointly by the USACE, which issues permits for the discharge of dredged or fill material into waters of the U.S., including wetlands, and the EPA, which oversees compliance and enforcement. Section 401 of the Clean Water Act requires applicants for a federal Section 404 permit in Louisiana to obtain a

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water quality certification from the LDEQ. For activities affecting navigable waters, Section 10 of the Rivers and Harbors Act requires additional authorization from the USACE.

Wetland Delineation Surveys

In 2023, RPS conducted wetland delineation surveys of the Project area based on the methods described in:

- U.S. Army Corps of Engineers (USACE) 1987 Wetlands Delineation Manual (USACE, 1987)
- U.S. Army Guidance Letter: Ordinary High Water Mark Identification (USACE, 2005)
- USACE Regional Supplement to the Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (USACE, 2010)

Three wetlands were identified and delineated, all along the Geismar Pipeline. No wetlands were identified at any of the well sites, the Central Pump Station, or along the In-Field Pipeline route. The wetlands are detailed in Table 4-6.

Table 4-6. Wetlands Delineated within the Project Area

Milepost	NWI Classification	Size (acres)	Jurisdictional?
Geismar Pipeline			
3.7-3.9	PFO1A	0.8	Yes
6.1-6.2	PFO1A	2.6	Yes
6.7-6.8	PFO1A	5.1	Yes

Note:
PFO1A = Palustrine, forested, broad-leaved deciduous, temporarily flooded

4.4.6. Floodplains

Federal Emergency Management Agency (FEMA), Flood Insurance Rate Map (FIRM) data shows the majority of the Project area lies outside the 100-year floodplain, in areas with reduced flood risk due to levees (Zone X). The only areas of the Project area within the 100-year floodplain (Zone AE) are the Mississippi River (crossed by the Geismar Pipeline) and Bayou Lafourche (crossed by the In-Field Pipeline).

4.5. Air Quality

Air quality in the project area is regulated under the federal Clean Air Act, which establishes National Ambient Air Quality Standards (NAAQS). The Louisiana Department of Environmental Quality (LDEQ) implements these requirements at the state level. The following section describes the current attainment status and baseline air quality conditions.

4.5.1. Regional Climate

South Louisiana has a humid subtropical climate with hot and humid summers and mild to cool winters. The average annual temperature is 68.2 degrees Fahrenheit (°F). July is the hottest month with an average temperature of 82.1 °F and January is the coldest month with an average temperature of 51.9 °F. Total annual precipitation is 63.40 inches and precipitation is spread fairly evenly throughout the year. Average monthly temperature and precipitation data for Donaldsonville, Louisiana, as reported by the National Oceanic and Atmospheric Administration (NOAA) is presented in Table 4-7.

Table 4-7. Average Monthly Temperature and Precipitation Data for Donaldsonville, LA

Month	Total Precipitation (inches)	Mean Maximum Temperature (°F)	Mean Minimum Temperature (°F)	Mean Average Temperature (°F)
January	5.78	62.1	41.7	51.9

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Month	Total Precipitation (inches)	Mean Maximum Temperature (°F)	Mean Minimum Temperature (°F)	Mean Average Temperature (°F)
February	4.11	66.1	45.2	55.6
March	4.03	72.4	51.0	61.7
April	4.88	78.4	57.1	67.8
May	5.64	84.9	65.1	75.0
June	6.97	89.2	71.6	80.4
July	6.51	90.6	73.5	82.1
August	6.37	90.8	73.1	81.9
September	5.39	87.6	69.1	78.3
October	4.65	80.3	58.6	69.4
November	4.21	70.9	48.6	59.8
December	4.86	64.4	43.7	54.1
Annual	**63.40**	**78.1**	**58.2**	**68.2**

The region's humid subtropical climate features hot summers, frequent convective storms, and light-to-moderate winds along the Mississippi River corridor. Summer high-pressure episodes and temperature inversions can reduce vertical mixing and elevate ozone and fine-particle concentrations; conversely, frontal passages and thunderstorms enhance dispersion and wet removal. The Louisiana Department of Environmental Quality's (LDEQ's) Air Quality Index forecasts for the Baton Rouge area routinely reflect these patterns.

4.5.2. Existing Air Quality

Regulatory Context

Ambient air quality in the project area is governed by the federal Clean Air Act (CAA) and the National Ambient Air Quality Standards (NAAQS) for carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter ($PM_{2.5}$ and PM_{10}), sulfur dioxide (SO_2), and lead (Pb). EPA sets the NAAQS and oversees statewide implementation; the LDEQ operates the ambient monitoring network and reports data to EPA's Air Quality System (AQS) for NAAQS compliance determinations.

Regional Attainment/Planning Status

The RPS Project lies in the Baton Rouge region, historically designated nonattainment for ozone. Under the 8-hour ozone standards, Ascension Parish (along with East/West Baton Rouge, Iberville,and Livingston parishes) were nonattainment for the 1997 and 2008 ozone NAAQS but have since been redesignated to attainment/maintenance following monitored improvements. EPA's current Green Book shows Baton Rouge, LA (2008 ozone area) is in maintenance, with a current (2022–2024) 8-hour ozone design value of 0.074 ppm, which meets the 2008 standard. (The 1997 ozone standard is revoked nationally.)

EPA's state-by-county history confirms Ascension's ozone redesignations (2011 for the 1997 standard; 2017 for the 2008 standard). Assumption Parish has not been part of a designated ozone nonattainment area. Both parishes are currently in attainment for the other criteria pollutants.

Emission Sources and Regional Context

The project area sits along the lower Mississippi River industrial corridor. Dominant emission categories influencing local and regional air quality include:

- Industrial stationary sources (petrochemical, refining, and manufacturing) concentrated in Ascension Parish.

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- Mobile sources along major transportation corridors (e.g., I-10/12 and state highways) contributing NO_x and volatile organic compounds (VOCs) that form ozone.
- Area sources (e.g., open burning, residential combustion, agriculture) that can influence fine-particle levels, especially under stagnant meteorology.

Sensitive Receptors

Sensitive receptors within the three parishes include residences, schools, childcare facilities, and medical centers. These populations are more susceptible to ozone and PM-related respiratory effects; therefore, background and project-related emissions in construction and operation phases should be evaluated with attention to proximity and prevailing winds (see Monitoring Network Plan siting objectives).

Federal Class I Areas are specific national parks, wilderness areas, and other protected lands that are given the highest level of air quality protection under the Clean Air Act (CAA). There are currently 156 protected areas nationwide designated as “Class I” areas. These areas are designed to "preserve, protect, and enhance" air quality and related values, such as visibility. The distances and directions to the nearest Federal Class I Areas is provided in Table 4-8.

Table 4-8. Distances and Directions to Nearest Class I Areas

Class I Area	Distance (km) / Direction to Area
Breton Wilderness Area, Louisiana	213 km / East
Caney Creek Wilderness Area, Arkansas	551 km / Northwest
Sipsey Wilderness Area, Alabama	569 km / Northeast
Upper Buffalo Wilderness Area, Arkansas	674 km / Northwest
Everglades National Park, Florida	1,127 km / Southeast

4.6. Noise

This section describes the existing ambient noise environment within the Area of Potential Effects (APE) for the River Parish Sequestration Project in west Ascension Parish and northern Assumption Parish, Louisiana. Noise-sensitive receptors, existing background levels, and key sources of environmental sound are characterized to establish baseline conditions for evaluating potential project-related impacts.

The project area is predominantly rural, characterized by extensive sugarcane fields, limited transportation infrastructure, and relatively low population density. The Mississippi River corridor is located east of the project area, while lands west of the river are primarily agricultural with scattered residences, small farmsteads, and rural communities.

4.6.1. Regulatory Framework

Noise assessments for federal environmental reviews are guided by several key standards and guidelines:

- Federal Highway Administration (FHWA) Noise Abatement Criteria (NAC): Provides guidance for assessing noise-sensitive receptors, particularly residential and institutional land uses.
- EPA Guidelines: Recommends community noise exposure thresholds, with a 24-hour average sound level (Ldn) of 55 decibels (dBA) identified as protective for residential areas.
- Occupational Safety and Health Administration (OSHA) Standards: Establish workplace noise exposure limits, relevant primarily during project construction activities.
- LDEQ: The State of Louisiana has no formal statewide environmental noise standards.
- Local: There are no parish or other local noise ordinances that apply to noise in the Project area.

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4.6.2. Existing Noise Environment

The Project area lies within a largely undeveloped rural landscape with a dominant land use of commercial sugarcane cultivation, sparse residences, and limited town centers, such as Donaldsonville, that are several miles from the Project area. Because of this low density of noise-sensitive receptors, the existing ambient noise environment is generally quiet relative to suburban or urban areas.

Existing sound levels in the Project area are dominated by:

- Agricultural operations – sugarcane harvesting typically occurs between October and January and produces intermittent high-intensity noise from harvesters, tractors, and hauling trucks.
- Road traffic – local traffic volumes on area roads tend to be low but traffic noise can be a major source of noise in the area.
- Industrial activity – While the Mississippi River industrial corridor to the east of the Project area supports significant industry, its influence on ambient sound levels within the Project area is limited by distance and intervening agricultural lands.
- Natural sounds – Wind, bird calls, and insects can dominate background noise in many areas.

Although site-specific noise monitoring was not conducted, studies on sound levels in rural areas provide a reasonable approximation of typical ambient noise levels, as shown in Table 4-9.

Table 4-9. Typical Ambient Noise Levels for Land Use Settings

Land Use Setting	Typical Daytime dBA	Typical Nighttime dBA	Primary Contributors
Agricultural fields	35-45	30-40	Natural sounds, farm equipment
Rural residences	40-50	35-45	Light traffic, distant machinery
Highways and arterial roads	55-65	50-60	Local and regional traffic

In general, ambient noise levels in the Project area are believed to range from 35 to 55 dBA, depending on the proximity to roads or active farm equipment.

4.6.3. Noise-Sensitive Receptors

Given the predominant agricultural land use and rural nature of the Project area, noise-sensitive receptors are limited. Potential receptors include:

- Scattered residences – there are some residences along Highways 943, 308, and 1, as well as smaller parish roads. As identified in Section 4.2.2, the nearest permanent dwelling to RPN-1-INJ and the Central Pump Station is 2,211 feet and the nearest dwellings to RPN-2-INJ and RPN-3-INJ are more than one mile.
- Community facilities – these are rare in the area and no schools, hospitals, or recreation centers are located in the immediate vicinity of the Project.
- Wildlife habitat – this is also rare on the landscape and mainly confined to wooded areas away from the Project.

4.7. Visual Resources

The project area occupies the Lower Mississippi River corridor near Donaldsonville, characterized by a broad river channel bounded by engineered levees, a flat alluvial plain dominated by expansive sugarcane fields, scattered rural residences, drainage canals and tree lines, and clusters of industrial facilities

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concentrated along the Mississippi River. The landscape is dominated by open agricultural views and low visual complexity.

4.7.1. Existing Viewsheds

The project area lies within the Lower Mississippi Alluvial Plain, a low-relief and flat landscape historically shaped by riverine processes and dominated by intensive agriculture. Key characteristics include:

- Open Agricultural Fields**:** Extensive sugarcane cultivation creates large, uniform expanses of green fields during the growing season and bare soil during planting and post-harvest periods.
- Sparse Vegetation**:** Tree cover is largely limited to riparian corridors along bayous, drainage ditches, and property boundaries.
- Water Features**:** The area contains numerous drainage canals and bayous, but open water bodies are scarce and generally not visible from project corridors.
- Existing Infrastructure**:** Utilities, pipelines, and rural road networks are scattered across the region but do not dominate the visual character.
- Residences and Farmsteads: Scattered single-family homes and small agricultural operations are dispersed along parish roads but are few in number.
- Industrial Facilities: Large-scale petrochemical and refining facilities are present to the east of the Project area, along the Mississippi River, and are visible on the eastern horizon from many areas in the Project area.

Overall, the landscape exhibits low scenic complexity and repetitive visual patterns due to monoculture farming.

4.7.2. Viewer Groups and Sensitivity

Viewer sensitivity within the project area is generally low due to limited populations and the functional, agriculture-dominated land uses. Key viewer groups include:

- Residents: Scattered rural residences may have direct or peripheral views of project facilities, but existing agricultural infrastructure and seasonal agricultural activity already influence the landscape.
- Workers: Farm and industrial workers are primarily focused on operational tasks, resulting in low sensitivity to visual changes.
- Travelers: Motorists on rural highways and parish roads are transient viewers with short-duration exposures.

Recreational users and tourists are minimal with the Project area, further reducing overall visual sensitivity.

4.7.3. Scenic Quality

The scenic quality of the Project area can be characterized as low to moderate. In terms of positive attributes, the area has wide-open views with big-sky horizons and the seasonal variation in sugarcane fields creates visual diversity during planting, growth, and harvest. Limiting factors to the scenic quality include agricultural uniformity that reduces visual variety, sparse natural vegetation that provides little screening, and a lack of prominent natural features such as hills or lakes.

4.8. Socioeconomic Conditions

The Project facilities are located in portions of three U.S. Census Tracts: 22005030900, 22007050100, and 22005030300. Figure 4-2 shows the locations of the census tracts in relation to the Project.

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4.8.1. Study Area Setting

The project lies within Louisiana's Mississippi River industrial corridor, spanning two suburban-to-industrial tracts on the Ascension Parish east bank and one rural tract in Assumption Parish west of the River. Land use around the Ascension tracts mixes single-family neighborhoods, legacy rural homesteads, and large industrial facilities with highway access; the Assumption tract is more rural, with dispersed housing, agriculture, and small community centers. Parish-level context shows Ascension as a fast-growing, higher-income suburban parish in the Baton Rouge metro, while Assumption is smaller and more rural.

4.8.2. Population and Households

Residential development is concentrated along parish roads and near small unincorporated communities; industrial riverfront parcels tend to have few residents.

4.8.3. Employment, Income, and Poverty

The local economy draws from nearby petrochemical and manufacturing complexes, construction and maintenance trades, logistics, healthcare/education, and parish-serving retail. At the parish scale, Ascension exhibits higher median household income and lower poverty than state averages, reflecting its suburban employment base; Assumption trends closer to rural Louisiana norms with lower incomes and higher poverty shares. These parish patterns frame the tracts that contain your project: the two Ascension tracts are influenced by industrial and commuter incomes tied to the Baton Rouge MSA, while the Assumption tract reflects a more rural wage and industry mix.

4.8.4. Educational Attainment and Languages

Educational attainment in the surrounding area generally shows a strong share of high-school graduate or higher and a smaller share with bachelor's degree or higher, with Ascension Parish exceeding rural parish levels given its metro adjacency. Limited-English-proficiency (LEP) rates in these parishes are low overall but present (primarily Spanish-speaking households).

4.8.5. Housing and Tenure

Housing in the study tracts is a mix of single-family detached units, older rural housing stock, and pockets of newer subdivisions near major corridors in Ascension Parish. Owner occupancy predominates overall, with renter clusters near employment corridors or community centers. Median gross rents and selected owner costs tend to be higher on the Ascension side than in rural Assumption.

4.8.6. Transportation and Commuting

Travel to work is overwhelmingly automobile-based, with drive-alone the most common mode and carpooling second; public transit use is minimal due to limited fixed-route service in the parishes. Mean travel times align with regional commuting into industrial facilities and the Baton Rouge metro.

4.8.7. Community Facilities and Services

Community services in and around the tracts include parish schools, churches, volunteer fire districts, sheriff's substations, small clinics/pharmacies, and parish public works. Larger medical, higher-education, and specialized retail services are accessed in the Baton Rouge metro (for Ascension residents) and in Napoleonville/Donaldsonville/Thibodaux corridors (for Assumption residents).

4.8.8. Environmental Justice Considerations

The RPS Project is located in portions of three census tracts, as shown in Figure 4-2. According to the DOE's Disadvantaged Communities Report tool (energyjustice.egs.anl.gov), two of the three census tracts are considered disadvantaged communities (DACs) and one is considered not disadvantaged. Based on the

DOE's described methodology, to be considered a DAC a census tract must rank in the 80th percentile of the cumulative sum of 36 burden indicators and have at least 30% of households classified as low-income.

Table 4-10 shows demographic data, DAC data, and the top 5 DAC indicators for the three Project Area census tracts.

Table 4-10. Demographic and DOE Burden Indicator Data

Factor	Census Tract		
	Disadvantaged Communities (DACs)		Non-DAC
	22007050100	22005030900	22005030300
Parish	Assumption	Ascension	Ascension
Population	3,914	4,827	17,127
DAC Score	22	22	16
DAC National Ranking	96%	94%	43%
DAC State Ranking	94%	91%	17%
% Low-Income	39%	68%	10%
Top 5 DAC Indicators (Rank)			
Cancer Risk	1	1	1
Incomplete Plumbing	2	--	--
Mobile Home	3	--	4
Water Discharge	4	--	5
Coal Employment	5	--	--
Fossil Energy Employment	--	5	3
Unemployed	--	4	--
Single Parent	--	2	--
Low-Income Population	--	3	--
Climate Hazards Loss of Life	--	--	2

Table 4-10 identifies the two census tracts on the west side of the Mississippi River as DACs.

Table 4-11. Socioeconomic Data for the Project Area

Factor	Census Tract			Louisiana Average	USA Average
	22005030900	22005030300	22007050100		
	Ascension Parish		Assumption Parish		
Population	4,189	5,522	3,428	--	--
Median Age	26.5	42.1	41.9	38.7	39.2
Percentage male	50%	48%	48%	49%	49%
Percentage non-white	78.7%	37%	55.6%	44.3%	42.9%
Per Capita Income	$23,571	$58,003	$33,027	$34,102	$43,313
Median Household Income	$35,761	$132,401	$45,568	$58,229	$77,719
Persons below poverty line	43%	4.2%	8.3%	18.9%	12.5%

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Factor	Census Tract			Louisiana Average	USA Average
	22005030900	22005030300	22007050100		
	Ascension Parish		Assumption Parish		
Number of households	1,522	2,292	1,432	--	--
Persons per household	2.8	2.4	2.4	2.4	2.5
Percentage married	36%	69%	44%	46%	50%
Number of housing units	1,803	2,414	1,694	--	--
Median value of owner-occupied housing units	$185,100	$354,600	$156,900	$215,600	$340,200
Moved since previous year	7%	24%	13.7%	11.1%	12.1%
High school grad or higher	86.3%	91.5%	77.7%	87.8%	89.8%
Bachelor's degree or higher	15.7%	43.4%	20.4%	27.0%	36.2%
Foreign-born population	0.5%	2.1%	0.3%	4.9%	14.3%
Population with veteran status	8.6%	11.1%	8.5%	5.8%	6.1%

The data in Table 4-11 indicate that the two census tracts on the west side of the Mississippi River have lower per capita and household income than the state and national averages and that the Ascension Parish census tract on the west side of the river (22005030900) has a significantly higher rate of persons living below the poverty line than the state and national averages.

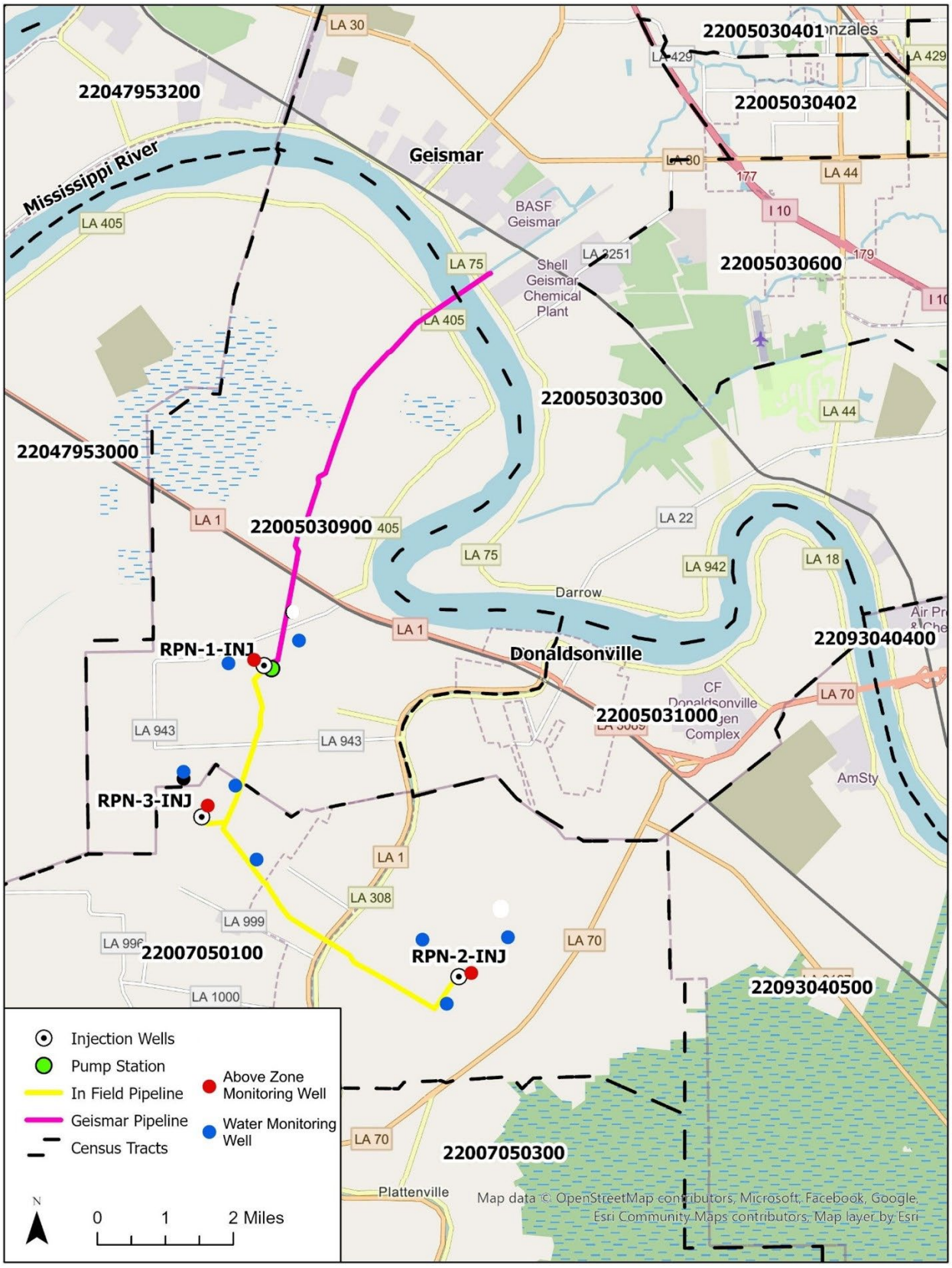

Figure 4-2. U.S. Census Tracts in the Project Area

4.9. Cultural and Historical Resources

4.9.1. Regulatory

Identification and consideration of historic properties follow Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations (36 CFR Part 800). In Louisiana, the State Historic Preservation Office (SHPO) functions are split between the Division of Historic Preservation (above-ground resources) and the Division of Archaeology (archaeological resources). Both offices provide project review guidance, standards, and access to cultural resource records.

4.9.2. Regional Context

The project area lies within the Mississippi River industrial corridor of southeastern Louisiana, an area with a rich cultural history shaped by pre-contact Native American occupation, French and Spanish colonial settlement, and extensive 19th- and 20th-century agricultural development. Historic maps, such as the 1830 Louisiana State Land Office plat and 1853 La Tourrette's Reference Map, depict the landscape as dominated by plantation agriculture, particularly sugarcane cultivation, which continues to characterize much of the modern environment.

4.9.3. Previous Cultural Resources Investigations

Multiple previous cultural resources investigations have occurred in the vicinity of the Project area. These prior study reports were reviewed by RPS and the findings include:

- Previously Recorded Archaeological Sites: Numerous prehistoric and historic sites are documented in proximity to the project area, though none were previously determined eligible for the NRHP.
- Historic Built Resources: Structures dating from the 19th and early 20th centuries, including plantation-era buildings and agricultural infrastructure, have been noted.
- Cemeteries: Several cemeteries are recorded within the broader landscape, though none lie directly within the proposed construction corridors.
- NRHP-Listed Properties: No NRHP-listed properties or historic districts are located within the project footprint or its immediate vicinity.

4.9.4. Current Field Investigations

Methodology

Phase I cultural resources surveys of the Project area were conducted by R.C. Goodwin & Associates between 2023 and 2025. The Phase I surveys employed intensive pedestrian surveys along the pipeline ROWs, access roads, well pads, and pump station and systematic shovel testing at 30- to 50-meter intervals, with closer intervals in high-probability zones. The Area of Potential Effect (APE) surveyed for the Project was 454.4 acres.

Findings

Three new archaeological sites were documented as part of the field investigations:

- Site 16AS132 – Contains 19th-century domestic artifacts, including ceramic sherds and glass fragments. Initially planned for avoidance via horizontal directional drilling (HDD); therefore, no adverse impacts are anticipated.
- Site 16AS133 – Yields similar materials suggesting plantation-period domestic activity. Also slated for avoidance using HDD.
- Site 16AS134 – Comprises remnants of historic railroad tracks associated with early 20th-century sugarcane transport. Minimal impacts are expected if construction adheres to proposed avoidance measures.

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No additional work was recommended for these sites, provided avoidance protocols are followed, and the SHPO agreed with these conclusions.

The methodologies and findings of the cultural and historical resources evaluations are detailed in the following reports:

- Phase I Cultural Resources Survey and Archaeological Inventory of the Proposed 14.6 km (9.1 mi) Long Geismar Pipeline for the River Parish Sequestration Project in Ascension Parish, Louisiana (R. Christopher Goodwin & Associates, Inc., March 2024).
- Phase I Cultural Resources Investigations of the Proposed River Parish Sequestration, In-Field Expansion Pipeline Project in Ascension and Assumption Parishes, Louisiana (R. Christopher Goodwin & Associates, Inc., April 2024).
- Supplemental Phase I Cultural Resources Investigations of the Proposed River Parish Sequestration, In-Field Expansion Pipeline Project in Ascension and Assumption Parishes, Louisiana (R. Christopher Goodwin & Associates, Inc., February 2025).
- Supplemental Phase I Cultural Resources Investigations of the Proposed River Parish Sequestration, Geismar and In-Field Expansion Pipeline Project in Ascension Parish, Louisiana (R. Christopher Goodwin & Associates, Inc., April 2025).
- Supplemental Phase I Cultural Resources Investigations of the RPN-3IZ and Operations Workspace for the Proposed River Parish Sequestration In-Field Pipeline Project in Ascension Parish, Louisiana (R. Christopher Goodwin & Associates, Inc., June 2025).

These reports were all sent to the SHPO for review and concurrence with the findings. The SHPO has concurred with all findings and recommendations.

5. ENVIRONMENTAL IMPACTS

This section describes the anticipated environmental impacts from the RPS Project. It describes the potential impacts of construction and operation and identifies mitigation measures to avoid or minimize impacts of the Project.

5.1. Geology and Subsurface Resources

5.1.1. Potential Impacts

Minimal ground disturbance will occur from excavation for the injection wells, monitoring wells, pump station, and pipelines. Temporary trenching for the pipelines will temporarily alter local soil structure, but topsoil will be segregated in cropland to minimize soil impacts, and these construction activities will not impact geologic formations.

The injection and storage of CO_2 is not expected to cause significant subsidence due to the depth and thickness of the injection interval and the presence of regionally continuous confining layers.

Given the Project area's low seismic hazard and the distance from mapped Quaternary faults, the likelihood of induced seismicity is extremely low.

5.1.2. Mitigation

Mitigation measures that will minimize the potential for impacts from the Project to geology and the subsurface include:

- Adherence to Class VI permitting requirements ensures safe CO_2 injection pressure limits.
- Subsurface monitoring via 12 dedicated monitoring wells.
- Adaptive operational controls if unexpected reservoir conditions occur.

5.1.3. Conclusion

Project impacts to subsurface resources will be minimal and subsurface risks to the Project are minimal.

5.2. Land Use and Land Cover

Table 5-1 details the land use impacts from the RPS Project construction and operations.

Compensation for impacts to sugar cane and/or other agricultural production from construction and surface facilities are specifically addressed in existing leases. Compensation for surface impacts (including wooded areas) outside of cultivated areas are generally through well site fees and/or pipeline servitude fees, though one lease specifically provides for timber damages.

5.2.1. Pump Station and Wells

The Central Pump Station and all injection and monitoring wells will be located in cultivated crop land, dominated by sugarcane. Construction impacts to cultivated crop land from the pump station and wells will be 24.2 acres. Following construction, more than half of that land will be able to revert to crop rotation, with only 11.3 acres being used for operations of these facilities. Access roads to these facilities are existing farm roads (developed low intensity land use) and will become permanent roads.

5.2.2. Pipelines

Construction of the Geismar Pipeline, In-Field Pipeline, and RPN-3 Lateral Pipeline will impact 202.0 acres of land, approximately 90 percent of which is cultivated crop land. Landowners will be compensated by RPS for their temporary loss of crops.

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RPS will retain permanent easements for the pipelines totaling approximately 89.4 acres, but nearly all of this land will not be maintained during operations. Following construction, nearly all of the pipeline workspace will revert back to cultivated cropland as the land will be restored to pre-construction contours and conditions and there will no prohibition on growing crops over the pipeline easement.

5.2.3. Prime Farmland

While most of the Project area soils are considered Prime Farmland soils, the minimal permanent impacts associated with the Project facilities and the large areas of Prime Farmland soils that exist in the region make the small loss of Prime Farmland due to Project impacts insignificant.

5.2.4. Coastal Zone Management Areas

While approximately one-half of the Project area is located within the Coastal Zone, the Project facilities are above the 5-foot elevation contour, which the Office of Coastal Management uses to determine the requirement for obtaining a Coastal Use Permit. The C&E provided a determination to RPS on September 10, 2025, that the Project will have no direct and significant impact on coastal waters and a Coastal Use Permit is not required.

5.2.5. Mitigation

Mitigation measures that RPS will use to minimize land use impacts from the Project include:

- Restoring construction workspaces that will not be used for operations to pre-construction conditions.
- Allowing crops to continue to be grown on areas disturbed by construction but not actively used for construction.
- Using public roads and existing farm roads to access Project facilities wherever feasible to reduce new disturbances.
- Compensating landowners for permanent easements and surface facilities on their properties.

5.2.6. Conclusion

The majority of the construction and operation impacts from the RPS Project will be to crop land and most of the disturbed land will be able to revert back to crop use after construction is completed. The area is dominated by sugarcane fields and production and the limited, and mostly temporary, loss of land used for growing sugarcane will have minimal impact to landowners and sugarcane production. The Project is expected to have little to no impacts on Prime Farmland soils and Coastal Zone Management Areas. Mitigation measures implemented by RPS will help ensure that land use impacts from the RPS Project are minimal.

Table 5-1. Land Use Impacts

Facility	Cultivated Crops		Open Water		Woody Wetlands		Developed Open Space		Developed Low Intensity		Developed Medium Intensity		Developed High Intensity		Total	
	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.
Pump Station and Wells																
Central Pump Station / RPN-1-INJ / RPN-1-AZ	7.7	6.0	0	0	0	0	0	0	0	0	0	0	0	0	**7.7**	**6.0**
RPN-1-WS1	0.3	0.1	0	0	0	0	0	0	0	0	0	0	0	0	**0.3**	**0.1**
RPN-1-WS2	0.3	0.1	0	0	0	0	0	0	0	0	0	0	0	0	**0.3**	**0.1**
RPN-1-WS3	0.2	0.1	0	0	0	0	0	0	0	0	0	0	0	0	**0.2**	**0.1**
RPN-2-INJ / RPN-2-AZ	3.0	1.1	0	0	0	0	0	0	0	0	0	0	0	0	**3.0**	**1.1**
RPN-2-WS1	0.4	0.1	0	0	0	0	0	0	0	0	0	0	0	0	**0.4**	**0.1**
RPN-2-WS2	0.4	0.1	0	0	0	0	0	0	0	0	0	0	0	0	**0.4**	**0.1**
RPN-2-WS3	0.4	0.1	0	0	0	0	0	0	0	0	0	0	0	0	**0.4**	**0.1**
RPN-3-INJ / RPN-3-AZ	4.0	1.1	0	0	0	0	0	0	0	0	0	0	0	0	**4.0**	**1.1**
RPN-3-WS1	0.4	0.1	0	0	0	0	0	0	0	0	0	0	0	0	**0.4**	**0.1**
RPN-3-WS2	0.4	0.1	0	0	0	0	0	0	0	0	0	0	0	0	**0.4**	**0.1**
RPN-3-WS3	0.4	0.1	0	0	0	0	0	0	0	0	0	0	0	0	**0.4**	**0.1**
Access Roads	0	0	0	0	0	0	0	0	19.8	19.8	0	0	0	0	**19.8**	**19.8**
Subtotal	**17.9**	**9.1**	**0**	**0**	**0**	**0**	**0**	**0**	**19.8**	**19.8**	**0**	**0**	**0**	**0**	**37.7**	**28.9**
Geismar Pipeline																
Pipeline ROW	41.8	34.7	0	3.0	0	2.7	0.4	1.2	0	0	0.4	0.2	0.9	1.0	**43.5**	**42.8**
ATWS	41.2	0	0	0	0	0	0.4	0	0	0	0.4	0	0.9	0	**42.9**	**0**
Access Roads	0	0	0	0	0	0	13.7	0	0	0	0	0	0	0	**13.7**	**0**
Subtotal	**83.0**	**34.7**	**0**	**3.0**	**0**	**2.7**	**14.5**	**1.2**	**0**	**0**	**0.8**	**0.2**	**1.8**	**1.0**	**100.1**	**42.8**
In-Field Pipeline																
Pipeline ROW	57.7	42.3	0	0	0	0	0.6	1.0	0.6	0.8	0	0	0	0	**58.9**	**44.1**
ATWS	34.3	0	0	0	0	0	0.4	0	0.4	0	0	0	0	0	**35.1**	**0**
Access Roads	0	0	0	0	0	0	1.6	0	0	0	0	0	0	0	**1.6**	**0**
Subtotal	**92.0**	**42.3**	**0**	**0**	**0**	**0**	**2.6**	**1.0**	**1.0**	**0.8**	**0**	**0**	**0**	**0**	**95.6**	**44.1**
RPN-3 Lateral Pipeline																
Pipeline ROW	4.0	2.5	0	0	0	0	0	0	0	0	0	0	0	0	**4.0**	**2.5**
ATWS	2.2	0	0	0	0	0	0	0	0	0	0	0	0	0	**2.2**	**0**
Subtotal	6.2	2.5	0	0	0	0	0	0	0	0	0	0	0	0	**6.2**	**2.5**
TOTAL	**199.1**	**88.6**	**0**	**3.0**	**0**	**2.7**	**20.8**	**20.6**	**0.9**	**0.8**	**0.8**	**0.2**	**1.8**	**1.0**	**239.6**	**118.3**

5.3. Water Resources

This section describes the potential impacts to groundwater and surface water in the Project area, as well as mitigation measures used to avoid and/or minimize impacts.

5.3.1. Groundwater

To prevent impacts to USDWs during drilling, all injection wells will have a surface casing that is set below the deepest USDW formation (typically about 2,800 feet deep) and is cemented to surface. To prevent impacts to USDWs during operations, RPS will operate the project within the parameters of the Class VI permit, including adhering to prescribed volume and pressure limits. In addition, RPS will implement its approved Testing & Monitoring Plan to validate non-endangerment of USDWs. For example, vertical seismic profiles (VSPs) will track the subsurface CO_2 and the monitoring wells will detect the potential migration of CO_2 or brine and will provide an early warning system to ensure the protection of USDWs.

5.3.2. Surface Water

A total of 20 waterbodies will be crossed by the RPS Project, all of which are associated with the Geismar Pipeline and In-Field Pipeline. Impacts to all of the five natural waterbodies crossed by the Project will be avoided by crossing via HDD, as shown in Table 5-2. The remaining 15 waterbodies crossed by the Project are all man-made ditches and will be crossed by the open-cut method.

Table 5-2. Pipeline Horizontal Directional Drills to Avoid Waterbody Impacts

Begin MP	End MP	Distance (ft)	Rationale
Geismar Pipeline			
0.3	0.5	1,260	Avoid impacts to McCall Bayou
1.3	1.6	1,442	Avoid impacts to LA Hwy 1 and Union Pacific Railroad
3.7	4.4	3,777	Avoid impacts to Caballero Canal
5.8	7.0	6,267	Avoid impacts to Mississippi River
In-Field Pipeline			
4.2	5.1	4,235	Avoid impacts to Bayou Lafourche, LA Hwy 1, and LA Hwy 308

5.3.3. Mitigation

Impacts to groundwater and surface water resources and quality from the RPS Project will be minimized by using the following measures:

- Setting and cementing surface casing below the deepest USDW formation.
- Ensuring compliance with the Clean Water Act Section 404/401 permits issued for the Project.
- Utilizing BMPs for erosion and sediment control.
- HDD methodology used to cross all natural waterbodies.

5.3.4. Conclusion

Impacts to groundwater and surface water from the RPS Project will be minimal and with the mitigation measures identified above, the impacts are expected to be minor.

5.4. Biological Resources

This section describes the impacts to vegetation, wildlife, fisheries, protected species, wetlands, and floodplains from the RPS Project.

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5.4.1. Vegetation

Construction of the RPS Project will result in the temporary loss of vegetation, which is almost entirely sugarcane. With the exception of approximately 11.3 acres of crop land that will be permanently lost for operations of the Central Pump Station and well pads, the remaining vegetation will be allowed to revert to pre-construction conditions. Existing riparian and wetland vegetation along waterbodies will be preserved by using HDDs to cross waterbodies and wetlands.

5.4.2. Wildlife and Migratory Birds

Impacts to wildlife and migratory birds is expected to be minimal due to the predominance of cultivated cropland and a lack of significant wildlife habitat in the area. Wildlife could be temporarily displaced during construction but the impacts are expected to be minor and short-lived.

5.4.3. Fisheries

There are no significant fisheries in the area of the Project so no impacts are expected.

5.4.4. Endangered, Threatened, and Special Status Species

Federally-Listed and Protected Species

For the federally-listed and protected species species listed thought to occur in the region of the Project, RPS made an effect determination, using Endangered Species Act (ESA) language, based upon species habitat requirements. The ESA language is as follows:

- No effect – the proposed action will not affect the federally-listed species or critical habitat.
- May affect, but not likely to adversely affect – the proposed action may affect the listed species and/or critical habitat; however, the effects are expected to be discountable, insignificant, or completely beneficial.
- May affect, likely to adversely affect – adverse effects to listed species and/or critical habitat may occur as a direct result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable, insignificant, or completely beneficial.

Table 5-3 provides the effects determinations for the federal species.

Table 5-3. Effects Determinations for Federally-Listed Species

Species	Status	Determination	Rationale
West Indian Manatee	T	No effect	Could occur in the Mississippi River or Bayou Lafourche but both waterbodies will be crossed via horizontal directional drill with no impacts to the waterways.
Tricolored bat	C	No effect	This species roosts in trees in forested habitats. There are no forested habitats impacted by the Project.
Alligator Snapping Turtle	C	No effect	Could occur in the Mississippi River or Bayou Lafourche but both waterbodies will be crossed via horizontal directional drill with no impacts to the waterways.
Monarch Butterfly	C	No effect	The project area is comprised almost entirely of active sugar cane fields. The project area does not have suitable habitat for this species. No milkweed has been observed during field surveys.

Notes:
T = Threatened
C = Candidate

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The Project will not impact any suitable habitat for the bald eagle.

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State-Listed and Protected Species

The State of Louisiana provides protections to state-listed species. As shown in Table 5-4, construction and operation of the Project will have "no effect" on all the state-listed species.

Table 5-4. Effects Determinations for State-Listed Species

Species	Status	Determination	Rationale
West Indian Manatee	T	No effect	Could occur in the Mississippi River or Bayou Lafourche but both waterbodies will be crossed via horizontal directional drill with no impacts to the waterways.
Pallid Sturgeon	E	No effect	Could occur in the Mississippi River but the river will be crossed via horizontal directional drill with no impact to the river.
Gulf Sturgeon	T	No effect	Could occur in the Mississippi River but the river will be crossed via horizontal directional drill with no impact to the river.
Inflated Heelsplitter	T	No effect	The Project area is outside of the known range of this species and does not contain suitable habitat.

Notes:
E = Endangered
T = Threatened

5.4.5. Wetlands

Three wetland areas were delineated within the Project footprint, all of which are along the Geismar Pipeline. RPS will be crossing all three wetland areas via HDD, which will avoid surface disturbances and any impacts to these wetlands. Therefore, no impacts to wetlands will occur from construction of the Project. Operations of the Project will also have no impact on these wetland areas.

5.4.6. Floodplains

The RPS Project area lies within areas protected from flooding by levees, with the exception of the area within the levees of the Mississippi River and Bayou Lafourche. The Geismar Pipeline will cross the Mississippi River via HDD and the In-Field Pipeline will cross Bayou Lafourche via HDD so floodplain impacts in these areas will be avoided by the RPS Project.

5.4.7. Mitigation

Mitigation measures to be implemented by RPS that will minimize Project impacts to biological resources include:

- Restoring pipeline ROWs and temporary impacts for wells and the Central Pump Station to pre-construction conditions to allow for the re-planting and growth of sugarcane.
- Avoiding impacts to wetlands, floodplain, and riparian vegetation through the use of HDDs in pipeline construction.

5.4.8. Conclusion

Biological resources in the Project area are limited and mitigation measures implemented by RPS for construction and operation will make Project impacts minimal.

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5.5. Air Quality

5.5.1. Construction Impacts

During construction, temporary emissions will increase from construction equipment, vehicular traffic, and soil disturbances. These activities will increase the levels of NOx, PM10, PM2.5, and VOCs but will be below the NAAQS thresholds. Construction emissions will be limited to mobile sources that do not require an air quality construction permit from the LDEQ.

RPS will utilize water suppression during construction to control dust, as needed.

5.5.2. Operational Impacts

Project operations will not include combustion equipment or other emissions sources. The Central Pump Station will be an all-electric facility with no combustion equipment and CO_2 venting will not occur under normal conditions. Therefore, the pump station would not be expected to require a Title V Operating Permit and New Source Review/Prevention of Significant Deterioration would not be triggered. RPS does not believe that a minor source permit will be required from the LDEQ but plans to submit a permit applicability determination to the agency to formally document non-applicability and/or secure a permit exemption.

5.5.3. Mitigation

Mitigation measures to be implemented by RPS that will minimize Project impacts to air quality include:

- The selection of an all-electric pump station will eliminate air emissions from the facility.
- The use of water suppression for dust control during construction.
- Deliveries to the construction sites will be scheduled to minimize peak traffic-related emissions, to the extent possible.

5.5.4. Conclusion

Construction emissions will be limited to mobile sources such as diesel-powered construction equipment and vehicles. Because these are not stationary sources, they do not require an air quality construction permit from the LDEQ. Project operations will not include combustion equipment or other emission sources subject to permitting. Therefore, no LDEQ air permits are anticipated. The project will remain in compliance with the federal Clean Air Act and state air quality requirements.

5.6. Noise

5.6.1. Construction Impacts

During construction, elevated levels of noise are expected from drilling rigs, heavy machinery, and vehicles associated with the Project. However, these noise increases will be temporary and are not expected to be significant due to the limited number of noise receptors and distances from Project facilities to noise receptors.

5.6.2. Operational Impacts

Operational noise will be minimal and will be limited to occasional wellhead maintenance and pump station operations. Operational noise is expected to be within recommended levels.

5.6.3. Mitigation

Mitigation measures to be implemented by RPS to minimize Project noise impacts include:

- Restricting most construction activities to daytime hours.
- For construction drilling activities that need to be conducted 24-hours per day, such as well drilling, RPS will deploy noise barriers as necessary to attempt to ensure that noise levels at occupied

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residential homes are below the EPA's recommended 24-hour average sound level (Ldn) of 55 dBA.
- Ensuring that noise minimization strategies are included in the design of the pump station.

5.6.4. Conclusion

Noise level increases from the RPS Project will mainly be associated with temporary construction activities. Operational noise level increases will be limited and RPS will ensure that noise minimization strategies are implemented to ensure that noise level increases from the Project are not significant.

5.7. Visual Resources

5.7.1. Potential Impacts

The aboveground facilities associated with the RPS Project (Central Pump Station, wellheads, pipeline markers) will introduce industrial features into an agricultural landscape with fairly low scenic quality. The visibility of the facilities will be limited due to factors such as the flat topography, the presence of sugarcane fields throughout portions of the year, and the existing visual context of industrial facilities present along the Mississippi River.

5.7.2. Mitigation

Mitigation measures to be implemented by RPS that will minimize the potential impacts of the Project on visual resources include:

- Using low-profile designs for aboveground structures
- Installing vegetative screening around permanent aboveground facilities, where practical

5.7.3. Conclusion

While new aboveground facilities associated with the RPS Project will have some impact on visual resources, the impact is expected to be minimal and not significant.

5.8. Socioeconomic Conditions

5.8.1. Impacts

The RPS Project will have numerous direct socioeconomic benefits to the local communities, such as:

- Creating approximately 250 temporary jobs during construction
- Creating approximately 50 permanent, good-paying jobs with paid training
- Increased local business revenue caused by the Project and workers spending in the local communities
- Increased ad valorem and sales tax revenues benefitting local jurisdictions

Other potential socioeconomic benefits of the Project may include:

- New, large industrial facilities have proposed locations in the area because of the availability of CCS to minimize CO2 emissions. These new facilities would bring many new jobs and increased revenues for the local communities.
- Reduced exposure of local citizens to industrial CO_2 emissions and co-pollutants.

Negative socioeconomic impacts from the Project include increased traffic, the potential increased cost and availability of housing from more people moving to the area, increased noise, and impacts to the visual landscape.

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5.8.2. Mitigation

The RPS Project intersects census tracts identified as disadvantaged. In order to mitigate the potential for negative impacts to these communities, RPS has developed a Community Benefits Plan that will provide investment into the local communities to address areas of need through a Community Benefits Fund based on the amount of CO2 injected as part of the RPS Project. An advisory board, consisting of third-party community partners, will be established to solicit and vet appropriate investment opportunities in the local communities. The advisory board will prioritize projects that have direct positive benefits for the communities in the Project area. Examples of community needs identified by local officials and community leaders in preliminary discussions include early childhood education centers and resources, workforce development opportunities, utility payment assistance, and improvements and resources to local schools. RPS believes that the communities in the Project area will materially benefit from these investments.

The proposed RPS Community Benefits Fund will be funded with a set amount per ton of CO_2 injected in a well per year. Each year, RPS will determine the total number of tons of CO_2 injected into a well in the previous year and multiply it by the dollar amount that RPS has proposed to local elected officials and that total sum of money will be deposited into the Community Benefits Fund to benefit the local community.

Recent and ongoing discussions in Louisiana regarding a potential carbon sequestration tax have indicated that the tax would go to the local parish governments where the sequestration is taking place. If that is the case and a carbon tax is imposed upon the RPS Project, it would take the place of the voluntary Community Benefits Fund that RPS has proposed.

RPS is also investing time and resources to help the River Parishes Community College (RPCC) near Geismar with curriculum development and learning opportunities around CCS and other energy transition careers. RPS has met with the chancellor and other senior administrators at RPCC to put together a plan to help guide and provide input on curriculum changes and RPS staff will be providing direct learning opportunities for students through guest lectures and other forms of education.

5.8.3. Conclusion

Many of the socioeconomic impacts from the RPS Project will be positive for the local communities. In order to mitigate some of the potential negative impacts, RPS is implementing a Community Benefits Plan, which includes a Community Benefits Fund, and supporting local education opportunities at RPCC.

5.9. Cultural and Historical Resources

Based on the Phase I investigations, the proposed RPS Project is not anticipated to result in adverse effects to cultural or historical resources. The SHPO has concurred with the findings detailed in the cultural resources reports (listed in Section 4.9) that no historic properties listed in or eligible for listing in the NRHP will be affected by the RPS Project.

In the event of unanticipated discoveries during construction, stop-work procedures and consultation with appropriate agencies and tribes will be implemented.

6. COMPLIANCE REQUIREMENTS FOR THE PROJECT

6.1. Federal Environmental Statutes and Regulations

6.1.1. Clean Water Act

RPS must comply with Sections 401, 402, and 404 of the CWA. Water quality certification (Section 401) has been delegated to the state agencies (see Section 6.2.2), with review by the EPA. Section 402 has also been delegated to the state agencies (see Section 6.2.2) and pertains to construction stormwater discharges and the discharge of hydrostatic test water.

The USACE has responsibility for determining compliance with all regulatory requirements of Section 404 of the CWA. The EPA also independently reviews Section 404 applications and has Section 404(c) veto power for wetland permits issued by the USACE. The Section 404 permitting process regulates the discharge of dredged or fill material into jurisdictional waters of the U.S., including wetlands.

6.1.2. Rivers and Harbors Act of 1899

The USACE implements the requirements of the Rivers and Harbors Act of 1899. Section 10 of the Act require a permit for work, structure, or placement of materials in, over, or under a navigable water of the U.S. Section 408 of the Act is required for any proposed alteration, occupation, or use of a federally-authorized flood control structure to ensure there is no impairment to their integrity, capacity, or intended function.

The Geismar Pipeline is proposed to cross under the Mississippi River and the associated USACE-maintained levees on either side of the river, so Section 10 and Section 408 of the Rivers and Harbors Act of 1899 are applicable to the RPS Project.

6.1.3. Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) is the primary federal law protecting the quality of drinking water in the U.S. The SDWA authorizes the EPA to establish national health-based standards for public drinking water supplies and to regulate underground injection activities that could endanger USDWs.

Because the RPS Project will involve the permanent geologic storage of CO_2, the SDWA's Underground Injection Control (UIC) Program applies to both the Class VI CO_2 injection wells and the Class V monitoring wells. C&E administers these permits in coordination with the EPA Region 6.

6.1.4. Resource Conservation and Recovery Act

RCRA regulates the proper handling of hazardous and non-hazardous waste streams and is applicable to construction and operations of the RPS Project.

6.1.5. Endangered Species Act

Section 7 of the ESA states that any project authorized, funded, or conducted by any federal agency should not jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined to be critical.

RPS has determined that the Project will have No Effect on federally-listed species.

6.1.6. National Historic Preservation Act

Section 106 of the NHPA requires that federal agencies take into account the effects of its undertakings on properties listed, or eligible for listing, in the NRHP, including pre-contact or historic sites, districts, buildings, structures, objects, or properties of traditional religious or cultural importance, and to afford the Advisory Council on Historic Preservation an opportunity to comment on the undertaking. RPS, as a non-

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federal entity, is helping the DOE meet its obligations under Section 106 by preparing the necessary information, analyses, and recommendations under ACHP regulations in 36 CFR 800.

6.1.7. Clean Air Act

The CAA was enacted by Congress to protect the health and welfare of the public from the adverse effects of air pollution. Federal and state air quality regulations established because of the CAA include, but are not limited to, Title V operating permit requirements and Prevention of Significant Deterioration (PSD) review. The EPA is the federal agency responsible for regulating stationary sources of air pollutant emissions, but the federal permitting process has been delegated to the LDEQ in Louisiana (see Section 6.2.2).

6.1.8. Coastal Zone Management Act

The CZMA requires the effective management, beneficial use, protection, and development of the nation's coastal zone and promotes active state involvement in achieving those goals. The CZMA requires participating states, which includes Louisiana, to development management programs that demonstrate how those states will meet their obligations and responsibilities in managing their coastal areas. In Louisiana, C&E administers the Coastal Zone Management Program.

A portion of the RPS Project falls within the Louisiana coastal zone (the facilities located in Assumption Parish). On September 11, 2023, C&E made a determination that the RPS Project, "has been determined to have no direct and significant impact on coastal waters and a Coastal Use Permit is not required." That determination was valid for two years and C&E reissued the determination with the same finding on September 10, 2025. The reissued authorization is valid through September 10, 2027.

6.2. Louisiana Environmental Statutes and Regulations

6.2.1. Louisiana Department of Conservation & Energy

C&E has authority over review, permitting, and compliance of Class VI CO_2 injection wells and Class V monitoring wells in Louisiana.

6.2.2. Louisiana Department of Environmental Quality

In Louisiana, the LDEQ is responsible for air permitting, water quality certifications (Section 401) and permitting stormwater discharges and discharges of hydrostatic test water. The LDEQ is also responsible for ensuring compliance with delegated RCRA programs in Louisiana.

6.2.3. Louisiana Department of Wildlife and Fisheries

The LDWF is responsible for providing consultations regarding state-listed protected species. RPS has determined that the Project will have No Effect on state-listed species.

6.3. Local and Parish Requirements

Ascension and Assumption parishes have some permitting requirements that apply to the RPS Project. These include:

- Building permits
- Drainage/culvert permits
- Pipeline permit (Ascension Parish only)

RPS will apply for these permits in 2026, closer to the start of construction.

6.4. Project Compliance Strategy

The Project compliance strategy that RPS is implementing for the Project includes:

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- Regulatory Engagement – continuously coordinating with federal, state, and local agencies throughout the life of the Project.
- Permit Sequencing – aligning the permitting timelines for long-lead permits and approvals such as Class VI, Section 404, and Section 408, with shorter-duration approvals, such as local permits.
- Environmental Management Plans – RPS is developing site-specific plans for stormwater, spill prevention, waste management, and unexpected discoveries of cultural resources, to name a few.
- Training and Auditing – RPS will be training contractors and ensuring the workers go through environmental compliance training prior to construction. RPS will also perform regular environmental audits of construction and operations.

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