

STATE OF LOUISIANA
CLASS VI UNDERGROUND INJECTION CONTROL
PROGRAM 1422 DESCRIPTION



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Class VI Underground Injection Control Program Description

1. Program Scope, Structure, Coverage and Processes

The U.S. Environmental Protection Agency (EPA) granted primary enforcement authority (primacy) over Class I, II, III, IV, and V injection wells—excluding all Indian lands—to the Louisiana Department of Natural Resources (LDNR), Office of Conservation (LOC) on April 23, 1982. Since then, the Louisiana Underground Injection Control (UIC) Program has strived to implement the approved program description, applicable rules and regulations, and EPA directives. References in this Work Plan to we, us, or our are intended to mean the Office of Conservation.

The applicable UIC programs for Class I, III, IV and V injection wells are authorized under Section 1422 of the Safe Drinking Water Act (SDWA), while the Class II program related to oil and gas activities is authorized under SDWA Section 1425.

The LOC is revising the existing 1422 program to include program oversight for Class VI Carbon Dioxide Geologic Sequestration Wells. The USEPA promulgated federal requirements under the Safe Drinking Water Act for the underground injection of carbon dioxide in 2010 establishing a new class of injection wells (Class VI). This submittal will demonstrate that the Louisiana UIC program with Class VI oversight is at least as stringent as its federal counterpart. In accordance with the provisions of Louisiana’s Administrative Procedure Act, R.S. 49:950 et seq., and through the power delegated under the laws of the state of Louisiana, the Department of Natural Resources, Office of Conservation adopted the Statewide Order No. 29-N-6 (LAC 43:XVII Subpart 6, Chapter 6) to facilitate the permitting, siting, construction, operation, monitoring and site closure of Class VI injection wells used to inject carbon dioxide for the purposes of geologic sequestration.

Louisiana LOC is the sole implementation agency for our current primacy program; this will continue as Class VI wells are added to the program. This revised program description incorporates changes as required under federal regulations and is only an addendum to the current Louisiana 1422 UIC primacy authority. Nothing in this document in any way affects the current administration of the Class II program under Section 1425 of the SDWA or the Class I, Class III, and Class V programs under Section 1422 of the SDWA. This revision of the Louisiana 1422 UIC program is for the sole purpose of adding Class VI injection wells to the program.

2. Implementing Agency Organizational Structure

Staff in the Louisiana LOC have education, skills, and in-house experience with most of the technical and policy areas relevant to evaluating Class VI permit applications, including, but not limited to evaluating and issuing Class VI permits, onsite inspection, compliance monitoring and overseeing GS projects throughout their life span. The state plans to implement a “team” approach to permitting by dividing permit applications among staff with relevant areas of expertise. However, some third-party contractor experience will be needed for reviews

associated with site characterization, modeling, risk, and environmental justice analysis. It is anticipated that third-party modelers will be utilized during the permit review stages at the onset of primacy, but as LOC staff are trained and gain experience, reliance on third-party modelers may become minimal. Third-party risk analysts may need to be contracted out in perpetuity; Louisiana LOC does not currently have expertise in this area and it is uncertain whether they will obtain it in the future.

The table below identifies the sources of this expertise.

Expertise Area	In-House	Contractor
Site characterization , e.g., geologists, hydrogeologists, geochemists, and log analysts/experts to review site characterization data submitted during permitting and throughout the project duration.	✓	✓
Modeling , e.g., hydrogeologists and environmental/reservoir modelers to evaluate area of review (AoR) delineation computational models during permitting and AoR reevaluations.	✓	✓
Well construction and testing , e.g., well engineers, log analysts/experts, and geologists to review well construction information and operational reports on the performance of Class VI wells and review/evaluate testing and monitoring reports.	✓	✓
Finance experts to review financial responsibility information during permitting and annual evaluations of financial instruments.	✓	
Risk analysts to evaluate emergency and remedial response scenario probabilities and remediation cost estimates.		✓
Policy/regulatory experts on the UIC Program and the Class VI Rule to evaluate compliance with Class VI Rule requirements.	✓	
Enforcement/compliance , e.g., staff who can initiate and pursue appropriate enforcement actions when permit or rule requirements are violated.	✓	
Inspectors including well engineers or log analysts/experts to inspect wells or witness construction activities, workovers, and/or mechanical integrity tests.	✓	
Environmental justice experts to evaluate the Environmental Justice impact report, ensuring that the report is thorough, contextualized, and agrees with the demographic and environmental data from the EPA-developed EJSCREEN tool.	✓	✓

An organizational chart of the LOC – Injection and Mining Division is attached in Appendix I.

The state estimates that running the Class VI Program will cost approximately \$345,000 in the first year of primacy and \$1.135 million in the second year with annual adjustments thereafter. The majority of these costs are associated with hiring seven staff (green boxes in Appendix I) to support the Class VI program. Sources of funding include: the Louisiana Carbon Dioxide Geologic Storage Trust Fund (GSF), UIC grants from the USEPA, and the Louisiana General

Fund (state dollars).

The GSF is the primary sources for programmatic funding. Sources of monies to be deposited into this fund pursuant to La. R.S. 30:1110 include annual regulatory fees, application fees, grants awarded, and compliance fines.

Fees collected to administer the program are as follows: (1) application fees, (2) annual site regulatory fees, and (3) a tonnage fee charged per metric ton of injected carbon dioxide. In the 2021 Regular Session, the Louisiana Legislature passed HB 572, which allows LOC to charge the applicant a permit fee not to exceed the cost of permit review. The application fee is a one-time, nonrecurring fee. Secondly, the annual site regulatory fee is set at an amount not to exceed \$50,000, recurring annually. The final new fee assessed will be the tonnage fee. The calculation of this fee is statutorily set at no more than $(\$5,000,000/144)/\text{the total injection tonnage of carbon dioxide}$ in La. R.S. 30:1110, ensuring that this assessed fee is spread over twelve years of operation. Please note that this calculation was updated in Act 370 of the Louisiana 2020 Regular Session; previous versions called for the fee to be spread over 120 months rather than 144. This fee calculates to an average of approximately \$416,667 annually per site. Due to construction timelines, the first year that LOC anticipates receiving this injection tonnage fee is Louisiana Fiscal Year 2023 (FY23).

The program should become fiscally self-sufficient in FY24, largely because Class VI wells should be injecting by this stage and the tonnage fees collected in conjunction with the smaller fees should support an estimated \$1.135 million in projected expenses for FY24. From the time that LOC receives primacy from the EPA until FY24, additional funding in excess of the projected fee collections will be required. This will come from a combination of federal funds (the Underground Injection Control grant) and Louisiana State General Fund allocations.

The table below illustrates how the state anticipates these funds will be allocated to various program activities.

Activity	Percent of budget
Permit application reviews and permit issuance.	40%
Project oversight/review of operating data and testing and monitoring data and reports.	25%
Inspections/witnessing construction or tests.	5%
Data management.	5%
Enforcement/compliance-related activities.	10%
Program oversight/administration.	15%

3. Permitting, Administrative and Judicial Review Procedures

Permitting Procedures

The state's Class VI Program requires all owners or operators seeking to inject carbon dioxide for the purpose of geologic sequestration to obtain a Class VI permit to construct or convert a well and gain approval to operate prior to commencing injection activities.

Class VI permit applications will be reviewed by staff of the LOC and issued in accordance with LAC 43:XVII, Subpart 6 (Statewide Order 29-N-6).

Reviewing Class VI Permit Applications

When LOC receives a permit application, staff will review it to determine if it contains all of the information outlined in LAC 43:XVII.3605-3611. Any deficiencies will be noted and, if necessary, the agency will request additional information from the applicant.

After confirming that all of the required information was submitted with the permit application, agency staff or a qualified third party (QTP) reviewer will review the Class VI permit application using a multi-step process, as described below.

First, staff or a QTP reviewer will perform a technical review to determine that the submitted data is accurate and of high quality, has undergone appropriate quality assurance procedures, is representative of the project and the site, and is sufficiently complete to support a full technical evaluation.

Next, a full technical evaluation of the submitted information will be performed to support the decision on the suitability of the site per the requirements at LAC 43:XVII.3615. This includes an evaluation of the geologic system (LAC 43:XVII.3615), the well (LAC 43:XVII.3617), and the proposed operations (LAC 43:XVII.3619) to ensure that the project will be protective of USDWs as well as the health, safety, and welfare of the public. Technical review may incorporate information from sources such as: the most up-to-date science and findings available from peer reviewed public literature; data and information presented at symposiums or conferences; procedures or recommended practices from the US EPA, qualified national laboratories, or published standards; and the most up-to-date versions of EPA-published guidance documents.

Technical review of the permit application will determine if applicants will need to provide additional evaluation data or monitoring plans beyond that required in 29-N-6. Evaluation data that is not required in the regulations but may be required prior to permit approval could include evaluation methods such as magnetic drone surveys to quantify any mis-located or unpermitted wells, geophysical data to support geologic interpretation, groundwater information to support hydrogeological interpretation, or other methods deemed necessary by the Commissioner. Additional monitoring plans may also be required by the Commissioner to monitor microseismicity, groundwater, reservoir pressures or plume extent, or any other plans deemed necessary based on a site-specific technical evaluation.

The agency will require the owner or operator to conduct an environmental justice (EJ) review and submit a report as part of the application process. An EJ review will be encouraged in the pre-permitting process and required early in the formal permitting process. At a minimum, the

state will require the report to consider relevant data and identify any portions of the AoR that encompass EJ areas.

When the application is submitted, LOC staff will use the EPA-developed EJSCREEN tool to evaluate the location of the project as a pre-decisional tool. If this initial screening identifies the presence of an EJ community or other increased risk factors located within the AoR, the application will be sent to a QTP reviewer for evaluation. Evaluation results will be shared with the LOC, and the Commissioner of Conservation will use the results to determine if an enhanced public comment period will be required for the application. An enhanced public comment period may extend the public comment period for the application, may require a more inclusive public participation process, including targeted public outreach and creation of better visual tools and approachable language, or may be supplemented in other ways recommended by the reviewer.

In addition to the site location questions considered in the Environmental Justice review, a weighing of siting, environmental effects, and a cost benefit analysis is required in the application as a result of *Save Ourselves, Inc., et al vs. the Louisiana Environmental Control Commission, et al*¹. The five required question responses, colloquially known as the “Louisiana Constitutional Considerations,” the “IT Question Responses,” or the “Save Ourselves Questions,” are hereafter the “SOS Decision Questions”, and are presented in Appendix II. Answers to these questions must provide adequate detail with sufficient justification and supporting data to enable LOC to conduct a balanced review of environmental, social, economic and other factors as required by the Louisiana Constitution.

As needed throughout the permit application review process, agency staff will discuss the application with the owner or operator to ensure that needed information is provided as expeditiously as possible. Any permit revisions required as a result of a QTP review will be reviewed and communicated to the applicant through LOC staff.

Draft Permit Issuance and Public Participation

Upon completion of the permit application evaluation, Louisiana LOC will tentatively determine whether to prepare a draft permit or to deny the application. If the agency prepares a draft permit, the agency will prepare a fact sheet summarizing the project (LAC 43:XVII.3611.D) and issue a public notice of the comment period and a public hearing according to procedures listed in LAC 43:XVII.3611.E.

Public notice of the preparation of a draft permit shall allow at least thirty (30) days for public comment. During the public comment period, any interested person may submit written comments on the draft permit and may request (in writing) a public hearing. Public notice of a public hearing shall be given at least thirty (30) days before the hearing. All relevant comments will be considered in making the final decision and will be addressed when a permit is issued or denied.

The agency will also notify any states, tribes or territories within the area of review of the GS project and document the results of this consultation, pursuant to LAC 43:XVII.3611.E.3.iii. See Section 12 for additional information on procedures for this notification.

1. *Save Ourselves v. La. Env'tl. Control Comm'n*, 452 So. 2d 1152 (La. 1984)

After completion of the public hearing and review of public comments, a final permitting decision will be made and, if appropriate, a Class VI permit will be issued. The permit will authorize the applicant to construct the injection well or convert an existing well to Class VI. The agency will also issue a response to all relevant public comments received.

Approving Injection in a Class VI Well

Following well drilling/conversion and completion activities, the permit applicant will submit information that the agency will consider in determining whether to approve operation of the injection well. If the information provided pursuant to LAC 43:XVII.3619 warrants, the agency will authorize the applicant to inject carbon dioxide.

After the Permit-to-Inject is issued, the operator is required to submit monitoring data and reports according to LAC 43:XVII.3629, as described in Section 4 of this document. After injection ceases, the operator shall plug their well(s) in accordance with the Well Plugging Plan submitted per LAC 43:XVII.3631.A.3 and after proper notice in accordance with LAC 43:XVII.3631.A.4. Finally, a Well Closure Report will be submitted to LOC as required in LAC 43:XVII.3631.A.5.

After cessation of injection but prior to plugging and abandonment of site wells, the operator must either (1) demonstrate that their Post Injection Site Care and Closure plan(s) are applicable, or (2) update the plan(s) as required in LAC 43:XVII.3633.A.1.c in accordance with the requirements listed in LAC 43:XVII.3633.A.1.b. Prior to authorization of site closure, the operator must monitor the site for at least 50 years or for the duration of the alternative timeframe approved by the Commissioner pursuant to LAC 43:XVII.3633.A.3. Finally, the operator must publish a notice of intent for closure in accordance with LAC 43:XVII.3633.A.4, may plug all monitor wells after approval of site closure by the Commissioner in accordance with LAC 43:XVII.3633.A.5, and must finally submit a site closure report in accordance with LAC 43:XVII.3633.A.6.

Administrative and Judicial Review of Permits

Administrative reviews of Class VI permits will take place in accordance with La. R.S. 30:6 and 1105.

Judicial reviews of Class VI permits would be conducted in accordance with La. R.S. 30:12 and 15.

4. Permit, Permit Applications, Reporting and Manifest Forms

The permit application form will be Form UIC-60 CCS, a draft of which is included in Appendix III. This form will be used both for the initial permit submitted as well as the permit re-evaluation which shall occur at a frequency of five years or less as prescribed by LAC 43:XVII.3609.M.1.

Prior to the approval of injection, a testing and monitoring plan must be approved by the LOC, per LAC 43:XVII.3625.A. The requirements of this plan will be reported as follows:

1. The operator will report the analysis of the carbon dioxide stream required in LAC 43:XVII.3625.A.1 as a summary report with cover letter and appended analyses.
2. The operator will submit pressure, rate, and volume monitoring data required by LAC 43:XVII.3625.A.2 as an excel or comma-delineated sheet with a graphical presentation; including the raw data as required under LAC 43:XVII.3629.A.1.a.viii
3. The operator will submit corrosion monitoring data as required by LAC 43:XVII.3625.A.3 as a report with a cover letter.
4. The operator will submit groundwater data for any monitored zones per LAC 43:XVII.3625.A.4 as a summary report with cover letter and appended analyses.
5. Prior to conducting an external or internal mechanical integrity test, casing inspection log, or pressure fall-off test as stipulated in the approved monitoring and testing plan and required under LAC 43:XVII.3625.A.5 and 6, the operator must first apply for a work permit using Form UIC-17 (Appendix IV), described below.
6. Other monitoring required in the approved testing and monitoring plan and required under LAC 43:XVII.3625.A.7-9 will be submitted as a summary report with cover letter and appended analyses and data.

Monitoring reports in accordance with the approved plan must be submitted semi-annually as prescribed in LAC 43:XVII.3629.A.1; with certain reports including mechanical integrity test results submitted within 30 days of the test per LAC 43:XVII.3629.A.1.b; and with a report of any non-compliance submitted within 24 hours per LAC 43:XVII.3629.A.1.c.

Mechanical Integrity tests (MITs) are conducted frequently throughout the life of the well. When Form UIC-17 is submitted to the LOC, staff review the scope of work and may request scope revisions prior to issuing an approved work permit. Applicants are required to include a step which states that the MIT will be witnessed by a Conservation Enforcement Specialist (CES). Upon approval of the work permit by LOC, the operator is required to contact the appropriate CES and give 48 hours prior notice before beginning the MIT. When the MIT is scheduled such that the CES is available to witness, the operator may then conduct the proposed operation and upon completion must then submit a summary of the work conducted on Form UIC WH-1 (with appended data), included as Appendix V. This process for conducting an MIT is the standard procedure for Class I, II, III, and V wells currently.

5. Compliance Tracking and Enforcement Program

Compliance Monitoring

Compliance monitoring will, at a minimum, include on-site inspections conducted by authorized agents of the Louisiana LOC and a review of operating and monitoring reports submitted in compliance with LAC 43:XVII.3629 to verify that the construction, completion, operation, maintenance, and site closure (LAC 43:XVII.3633) of GS projects are performed according to approved plans and specifications and meet all permit and regulatory requirements.

The state's compliance monitoring program includes the following activities:

- Reviewing plans and reports (e.g., well completion reports, test results, workover reports) submitted by permit applicants or owners or operators.
- Conducting site inspections to verify or witness construction, operation and testing/maintenance procedures. Site inspections will be conducted by the agency's

authorized agents.

- Investigating complaints alleging improper construction, completion, operation or maintenance of a GS project.
- Performing compliance monitoring (e.g., reviewing monitoring, operating and maintenance data) to verify compliance with permit conditions, regulations and any other conditions or stipulations.
- Conducting annual inspections and compliance follow-up inspections of GS projects.

The LOC shall submit to the EPA quarterly non-compliance reports as specified in 40 CFR § 144.8(a). Quarterly reports will be submitted in accordance with the following schedule (or as otherwise specified in the LOC's FY UIC Workplan):

- October, November, December – due January 30
- January, February, March – due April 30
- April, May, June – due July 30
- July, August, September – due October 30

Enforcement Procedures

Any person violating LAC 43:XVII Subpart 6, Chapter 6 (Statewide Order 29-N-6), any condition of a Class VI permit, or any rule or order of the LOC is subject to enforcement action. The agency is responsible for initiating, pursuing and resolving enforcement actions.

Enforcement proceedings may result in modification, revocation or suspension of any permit issued under authority of the UIC Program.

The agency will attempt to handle all minor violations through informal means, such as correspondence between agency staff and the alleged violator. If initial correspondence does not result in the resolution of minor violations, a Notice of Violation (NOV) may be issued. If the violation(s) grows in size or scope, LOC may issue a Compliance Order without a civil penalty. The final enforcement stage, typically reserved for non-compliance that is egregious or may endanger the USDW, is the issuance of a Compliance Order in which a civil penalty is assessed. Issuance of NOVs, Compliance Orders, and Compliance Orders with civil penalties are entered and tracked through the database titled SONRIS, maintained by LOC staff.

If a Compliance Order with civil penalty is required, the state may seek civil penalties up to \$5,000 per day per violation under La. R.S. 30:1106.D(1).

6. Schedule for Issuing Class VI Permits

The agency anticipates that up to 14 well permit applications may be submitted during the first two years after approval of the state Class VI Program, including nine permit applications in year 1 and five permit applications in year 2. It should be noted that of the nine anticipated well applications in year 1, four are associated with a single operator in a limited geographical area, applications for which have already been submitted to EPA Region 6.

The agency expects that reviewing Class VI permit applications will require nine to twelve months per project following the date a complete permit application is submitted under proposed staffing levels and with full applicant cooperation.

7. State Priorities for Issuing Class VI Permits

It is anticipated that during the first two years after approval of the state Class VI program, at least six permits will be issued by LOC. Priority in the application queue will be based primarily on the relative date of submittal and then weighted by application completeness and size and nature of the project.

8. Mechanical Integrity Testing Requirements

To evaluate the absence of significant leaks, owners or operators of Class VI wells must, following an initial annulus pressure test, continuously monitor injection pressure, rate, injected volumes, pressure on the annulus between tubing and long-string casing, and annulus fluid volume, pursuant to LAC 43:XVII.3621.A.6. Additionally, annulus pressure tests must occur on an annual basis and after performing any well workovers that involve unseating the tubing or packer, pursuant to LAC 43:XVII.3627.A.2.

At least once every 12 months, owners or operators must use an approved tracer survey or a temperature or noise log to determine the absence of significant fluid movement pursuant to LAC 43:XVII.3627.A.3.

The agency may require additional or alternative tests if the results presented by the owner or operator are not satisfactory to demonstrate mechanical integrity pursuant to LAC 43:XVII.3627.A.5. Also, the agency may allow the use of a test to demonstrate mechanical integrity other than those described in LAC 43:XVII.3627.A, with the written approval of the US EPA Administrator. To obtain approval, the agency must submit a written request to the US EPA Administrator that must set forth the proposed test and all technical data supporting its use.

The agency expects to review the results of approximately 20 MITs from Class VI well owners or operators each year.

9. Procedures to Notify Operators of the Requirement to Apply for and Obtain a Permit

Class I and Class V Wells

Louisiana LOC does not currently have any known Class I or Class V wells that inject carbon dioxide as a primary injection stream.

Class II ER Wells

The agency will evaluate information about Class II enhanced oil recovery wells (e.g., carbon dioxide injection and production data or information related to the other factors at LAC 43:XVII.3603.G.2) and identify whether any projects are approaching risk thresholds within four years of receiving Class VI primacy in accordance with 40 CFR 145.23(f). Because LOC has primacy for both the 1422 and 1425 programs, no inter-agency cooperation will be required to convert a Class II well to a Class VI well.

10. Injection Well Inventory

LOC staff currently enter new well information into our agency database, SONRIS. As modifications occur to wells during the operational lifetime of each well, the information contained in SONRIS is updated accordingly. Data queries are executed to export well inventories for all well class types, and Class VI wells will be no exception.

11. Exempted Aquifers

Owners or operators of Class II ER wells may apply to expand the areal extent of Class II aquifer exemptions. Such requests must be submitted concurrently with Class VI permit applications, pursuant to LAC 43:XVII.3603.F.

If such requests are received, the agency will evaluate the application to determine that the area of the proposed expansion is sufficiently large to contain the carbon dioxide plume and pressure front and was determined in a manner that is consistent with the AoR modeling required under LAC 43:XVII.3615.B and whether the request meets the criteria at 40 CFR 146.4.

Following this evaluation and a determination that the proposed expansion of the areal extent of the aquifer exemption meets the requirements at 40 CFR 144.7(d) and 146.4, the agency will forward the request to the EPA Region 6. No designation of an expansion of the areal extent of a Class II ER aquifer exemption for GS injection will be final unless approved by the USEPA Administrator as a revision. Other than USEPA-approved expansions of the areal extent of existing Class II aquifer exemptions, no aquifer exemptions will be issued for Class VI injection-related activities.

12. Transboundary Notification and Documentation Procedures

Due to the potentially large AoRs associated with GS projects, interstate issues may need to be taken into account. Pursuant to La. R.S. 36:354.A.10 and B.6, the state will notify authorities in any states, tribes, and territories of Class VI permit applications where the AoR crosses jurisdictional boundaries.

Permit applicants must provide a list of contacts for those states and tribes identified to be within the AoR of the Class VI project pursuant to LAC 43:XVII.3607.C.2.s.

Based on this information and a review of the extent of the AoR, the state will notify appropriate staff in affected jurisdictions in writing to provide information about the proposed project and invite them to provide input during the permit application review process or participate in/monitor the public participation process associated with the permit application.

The state will document all input received and the responses provided. This documentation will be made a part of the administrative record for the permit application.

13. Injection Depth Waivers

Louisiana LOC will not approve nor issue injection depth waivers.

14. Financial Responsibility.

The state's regulation, at LAC 43:XVII.3609.C requires owners or operators of Class VI wells to demonstrate and maintain financial resources to perform all required corrective action, plug the injection well, conduct post injection site care and site closure, and perform any needed emergency and remedial response.

Agency staff with financial expertise will review the cost estimates provided by applicants to verify that they are sufficient to cover these activities and evaluate the financial instruments the applicant proposes to use to verify that they qualify and are appropriate.

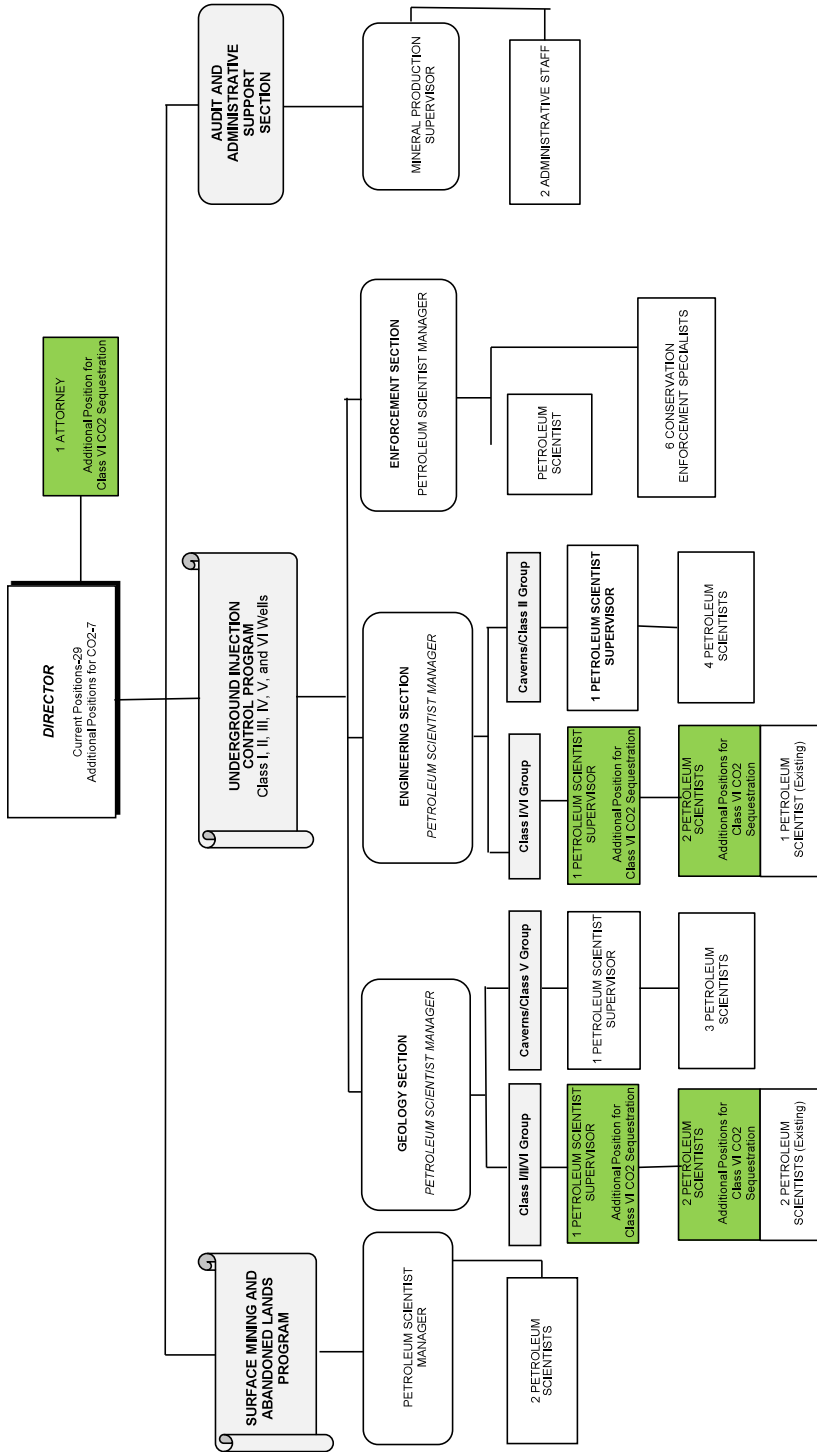
Even after the financial instruments have been approved, LOC staff will continue these on-going efforts to make sure the operator maintains financial responsibility: (1) update annual cost to account for inflation; (2) update cost following amendment of project plans; and (3) oversight of financial instruments to make sure they remain active, sufficient, and meet the criteria required pursuant to LAC 43:XVII.3609.C.

15. Reports.

The owner or operator is required to submit all required reports, submittals, and notifications under LAC 43:XVII.3629 to both the LOC and to EPA, in an electronic format acceptable to the EPA. In order to assure both the State, as the primacy authority, and EPA, as the oversight authority, have consistent data throughout program implementation, LOC agrees to submit to EPA or allow EPA viewing access to all Class VI reports, submittals, and notifications submitted to the State. LOC will assist EPA in owner or operator compliance with 40 CFR § 146.9 1(e) by submitting to EPA or allowing EPA viewing access to all required reports, submittals, and notifications under Subpart H of part 146 through the Department's database in an electronic format approved by EPA.

Reports submitted to the LOC shall be uploaded by the owner or operator to the Geologic Sequestration Data Tool (GSDT). The EPA has viewing authority of all reports submitted to the LOC through the GSDT.

APPENDIX I: Organizational Chart



APPENDIX II: SOS Decision Questions

1. Have the potential and real adverse environmental effects of the proposed project been avoided to the maximum extent possible?
2. Does a cost benefit analyses of the environmental impact costs versus the social and economic benefits of the proposed project demonstrate that the latter outweighs the former?
3. Are there alternative projects which would offer more protection to the environment than the proposed project without unduly curtailing non-environmental benefits?
4. Are there alternative sites which would offer more protection to the environment than the proposed site without unduly curtailing non-environmental benefits?
5. Are there mitigating measures which would offer more protection to the environment than the proposed project without unduly curtailing non-environmental benefits?

APPENDIX III: Form UIC-60 CCS

FORM UIC-60 CCS
PERMIT APPLICATION



OFFICE OF CONSERVATION
INJECTION AND MINING DIVISION
617 N. 3rd St.
BATON ROUGE, LA, 70802

APPLICATION TYPE:	<input type="checkbox"/> New Class VI Injection Well	<input type="checkbox"/> Class VI Conversion (SN _____)
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APPLICANT INFORMATION

1. OPERATOR NAME:	2. OPERATOR CODE:	3. OPERATOR PHONE:	
4. OPERATOR ADDRESS:	6. FACILITY ADDRESS:		
5. OPERATOR EMAIL:			
7. CONTACT NAME:	8. CONTACT NUMBER		

WELL INFORMATION

9. WELL NAME:		10. WELL NUMBER:	
11. PARISH:		12. FIELD:	
13. LOCATION COORDINATES:		14. STATE PLANE COORDINATES (Lambert, NAD 27):	
Latitude:		<input type="checkbox"/> North Zone	X:
Longitude:		<input type="checkbox"/> South Zone	Y:

15. WELL CONSTRUCTION INFORMATION

CASING SIZE (IN.)	HOLE SIZE (IN.)	CASING WEIGHT (lb/ft)	DEPTH SET		TOTAL CEMENT USED (sacks)	TYPE CEMENT
			TOP (FT.)	BOTTOM (FT.)		
16. ELEVATION OF DATUM (ft.):		17. DATUM:	<input type="checkbox"/> KB	<input type="checkbox"/> GL	<input type="checkbox"/> MSL	18. TOTAL DEPTH (ft.):

PROPOSED INJECTION INTERVAL INFORMATION

19. DEPTH OF PROPOSED INJECTION ZONE (ft.):		20. INJECTION FORMATION NAME:	
Top:	Bottom:	21. INJECTION THROUGH:	<input type="checkbox"/> Perforations <input type="checkbox"/> Open Hole <input type="checkbox"/> Screen
22. PROPOSED PERFORATED/OPEN HOLE INTERVAL(S) (ft.):			

PROPOSED INJECTION STREAM INFORMATION			
23. PROJECTED AVERAGE MONTHLY INJECTION VOLUME (tons):		24. PROJECTED TOTAL INJECTION VOLUME (tons):	
25. FACILITY SIC CODES:			

26. SITE PERMITS (§607.B.9)		
PERMIT TYPE	APPLICATION NUMBER	CURRENT STATUS
27. LIST RELEVANT LOUISIANA OFFICE OF CONSERVATION ORDERS:		

JURISDICTIONAL ACKNOWLEDGEMENTS	
28. IS THE PROPOSED WELL OR PLUME BOUNDARY (LOCATED ON INDIAN LANDS UNDER THE JURISDICTION OF PROTECTION OF THE FEDERAL GOVERNMENT?)	<input type="checkbox"/> YES <input type="checkbox"/> NO
29. IS THE PROPOSED WELL LOCATED ON STATE WATER BOTTOMS OR OTHER LANDS OWNED BY OR UNDER THE JURISDICTION OF THE STATES	<input type="checkbox"/> YES <input type="checkbox"/> NO

CERTIFICATION BY OPERATOR	
<i>The signature below must be obtained from a duly appointed employee of the operating company.</i>	
<i>I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment (LSA-RS 30:17).</i>	
1. NAME (PRINT)	2. TITLE (PRINT)
3. SIGNATURE	4. DATE



INJECTION WELL WORK PERMIT

Office of Conservation

UIC-17 Injection and Mining Division

Operator's Name and Address:		Work Permit No.		
		Serial No.		
		Operator Code:		
		Phone:		
Well Name and Number:		Fax:		
Field:	Parish:	Sec.	Twp.	Rng.
DESCRIPTION OF WORK				
Field Contact to Schedule Well Test :		Phone:		
Permit Requested By:		Date:		
Signature:		Email Address:		
Permit Authorized By: Stephen H. Lee, Director		Date:		Expiration Date:

INSTRUCTIONS

A single application will suffice for one or combinations of the operations below provided that if more than one operation is requested on one form, such work must be performed consecutively. Once signed by an IMD Representative, this form will be sent to the operator and serve as the approved permit.

1. Plug and Abandon (Provide Well Schematic)	7. Back Wash, Acidize or Other Well Stimulation (Class I and VI Wells Only)
2. Deepen	8. Pull Casing
3. Perforate	9. Replace Wellhead
4. Squeeze	10. Run a Liner
5. Plugback	11. Other (Any work requiring use of Workover Rig)
6. Pull Tubing/Packer	To Change Zone of Disposal/Completion submit Form UIC-32

Email all Injection Well Work Permit Applications to Injection-Mining@LA.gov, OR mail the application to the address provided in the upper right corner.

In accordance with RS 30:21, effective August 1, 2015, all Work Permit applications will be assessed a non-refundable \$125 fee, due upon submittal of this form.

To perform any of the above work types without first obtaining a work permit is a violation of the law (LAC43:XIX.105.), which carries with it possible civil and criminal penalties.

APPENDIX V: Form UIC WH-1



**FORM UIC-WH1
for INJECTION WELLS**

WELL HISTORY & WORK RESUME REPORT

MAILING ADDRESS
OFFICE OF CONSERVATION
INJECTION & MINING DIVISION
P.O. BOX 94275
BATON ROUGE, LA 70804-9275

PHYSICAL ADDRESS
OFFICE OF CONSERVATION- 9th FL
INJECTION & MINING DIVISION
617 N. THIRD ST.
BATON ROUGE, LA 70802

SERIAL NUMBER		APPLICATION/PERMIT NUMBER	
PERMITTED INJECTION ZONE (FT) (FOR CAVERNS: TOP IS TOP OF SALT & BOTTOM IS ORIGINAL TD)			
TOP:		BOTTOM:	
PERFORATED/OPEN HOLE INTERVAL (FT) (FOR CAVERNS: DEEPEST CMTD CSG & BOTTOM OF CAVERN)			
TOP:		BOTTOM:	
FIELD		FIELD CODE	
PARISH		PARISH CODE	
SEC	TWN	RNG	

GENERAL INFORMATION

WORK TYPE (CHECK THE APPROPRIATE BOX) <input type="checkbox"/> NEW DRILL WELL <input type="checkbox"/> SIDETRACK <input type="checkbox"/> WELL CONVERSION <input type="checkbox"/> CAVERN MIT/SONAR <input type="checkbox"/> REDRILL <input type="checkbox"/> TEMPORARILY ABANDON <input type="checkbox"/> CHANGE OF ZONE <input type="checkbox"/> OTHER WORK PERMIT		WELL TYPE (CHECK THE APPROPRIATE BOX) <input type="checkbox"/> CLASS II SWD-COMMERCIAL <input type="checkbox"/> CLASS I NONHAZARDOUS <input type="checkbox"/> CLASS II HYDROCARBON STORAGE <input type="checkbox"/> CLASS I HAZARDOUS <input type="checkbox"/> CLASS III SOLUTION MINING <input type="checkbox"/> CLASS II EOR <input type="checkbox"/> CLASS VI CARBON SEQUESTRATION <input type="checkbox"/> CLASS II SWD <input type="checkbox"/> OTHER:	
WELL NAME		WELL NUMBER	
OPERATOR		OPERATOR CODE	

ADDRESS		CITY		STATE		ZIP CODE	
SPUD DATE (MM/DD/YYYY)		TOTAL DEPTH (FT)		PBTD (FT) (FOR CAVERNS: TD OF MOST RECENT SONAR)			
GROUND ELEVATION (FT)		CASING HEAD FLANGE ELEVATION (FT)		DISTANCE FROM RKB TO CHF (FT)			

TUBING/HANGING STRINGS AND PACKER

Enter this information for each work permit regardless of whether or not it has changed. If this is left blank it means no tubing/hanging string(s) or packer is in the well.

TUBING/HANGING STRING SIZE (OD-INCHES)	TUBING/HANGING STRING DEPTH (FEET)	PACKER DEPTH (FEET)

WELL COMPLETION INFORMATION

ONLY COMPLETE THIS SECTION IF:
 1-THIS IS A NEW DRILL; 2-THE COMPLETION INFORMATION FOR THIS WELL HAS CHANGED; OR
 3-A CORRECTION IS BEING SUBMITTED WITH SUPPORTING DOCUMENTATION SUCH AS DRILLING REPORTS OR CEMENTING RECORDS.

CASING AND LINER RECORD

Complete this section with casing information and with any relevant information documented in the Description of Work Section. For New Drills, all depths must be reported relative to ground level. For all other situations, report Datum as appropriate KB, CHF, GL, etc.

CASING/LINER SIZE (OD-INCHES)	HOLE SIZE (INCHES)	CASING/LINER WEIGHT (LB/FT)	CASING/LINER SETTING DEPTHS			CASING TEST PRESSURE (PSI)	CASING TEST DURATION (HOURS)	CASING TEST DATE (MM/DD/YYYY)	NAME OF TEST WITNESS- STATE IF CONSERVATION AGENT OR OFFSET OPERATOR
			TOP (FEET)	BOTTOM (FEET)	DATUM				

CASING AND LINER CEMENT RECORD

Complete this section with the cement information and with any relevant information documented in the Description of Work Section. If the cement information for the casing or liner is unknown, enter UNK in the Total Cement Used column; if the casing or liner was not cemented, enter 0 (zero) in the column.

CASING/LINER SIZE (OD-INCHES)	HOLE SIZE (INCHES)	CASING/LINER SETTING DEPTHS (FEET)		TOTAL CEMENT USED (SACKS)	LEAD			TAIL		
		TOP	BOTTOM		AMOUNT (SACKS)	YIELD (CU FT/SACK)	TYPE (CLASS)	AMOUNT (SACKS)	YIELD (CU FT/SACK)	TYPE (CLASS)

PLUG BACK RECORD

Acceptable plug types are 100-foot cement plugs (CP), Cast Iron Bridge Plugs topped with at least 10 feet of cement (CIBP) or a Cement Retainer topped with at least 20 feet of cement (CR). Include the top of cement in the Upper Plug Depth. Convert Cubic Feet of Cement to Sacks of Cement. Use the shallowest Upper Plug depth in the PBTD field.

DATE WORK PERFORMED (MM/DD/YYYY)	PLUG TYPE (CP, CIBP, or CR)	UPPER PLUG DEPTH (FEET)	LOWER PLUG DEPTH (FEET)	TOTAL CEMENT USED (SACKS)	CEMENT YIELD (CU FT/SACK)	TEST PRESSURE (PSI)	TEST DURATION (HOURS)	TEST DATE (MM/DD/YYYY)

I, the undersigned, state: that I am employed by the company indicated below; that I am authorized to make this report; that this report was prepared under my supervision and direction; and that all facts stated herein are true, correct and complete to the best of my knowledge. I am aware there are significant penalties for submitting false information, including the possibility of a fine, imprisonment or both (LSA-R.S. 30:17).

PRINT NAME & TITLE	PRINT COMPANY NAME
SIGNATURE	DATE
EMAIL ADDRESS	TELEPHONE NUMBER

WELL LOGGING AND TESTING DATA				
Complete this section with the testing and logging information associated with THIS application.				
WAS A MIPT PERFORMED? <input type="checkbox"/> YES <input type="checkbox"/> NO	WITNESSED BY A CONSERVATION AGENT? <input type="checkbox"/> YES <input type="checkbox"/> NO	TEST PRESSURE (PSI)	TEST DURATION (HRS)	TEST DATE
MEASUREMENT OF THE BOTTOM HOLE PRESSURE OR THE STATIC FLUID LEVEL.	MEASURED BOTTOM HOLE PRESSURE AND DEPTH		DATE MEASURED	WITNESSED BY A CONSERVATION AGENT? <input type="checkbox"/> YES <input type="checkbox"/> NO
	PSI @	FT.		
	STATIC FLUID LEVEL (FT.)	DATE MEASURED	METHOD USED	WITNESSED BY A CONSERVATION AGENT? <input type="checkbox"/> YES <input type="checkbox"/> NO
WAS WELL DIRECTIONALLY DRILLED? <input type="checkbox"/> YES <input type="checkbox"/> NO	WAS A DIRECTIONAL SURVEY MADE? <input type="checkbox"/> YES <input type="checkbox"/> NO	WERE 3 COPIES FILED WITH THE OFFICE OF CONSERVATION? <input type="checkbox"/> YES <input type="checkbox"/> NO		IF YES, DATE SUBMITTED
TYPE OF ELECTRICAL OR OTHER LOGS RUN UNDER THIS APPLICATION ONLY (COPIES OF ALL LOGS MUST BE FILED WITH THE INJECTION & MINING DIVISION.)				DATE SUBMITTED
MIT AND SONAR DATA Salt Cavern Wells ONLY				
WAS A MIT PERFORMED? <input type="checkbox"/> YES <input type="checkbox"/> NO	TEST DATE	DATE SUBMITTED	WAS A CASING INSPECTION PERFORMED? <input type="checkbox"/> YES <input type="checkbox"/> NO	DATE OF LOG
WAS SONAR PERFORMED? <input type="checkbox"/> YES <input type="checkbox"/> NO	WAS THE ROOF SURVEYED? <input type="checkbox"/> YES <input type="checkbox"/> NO	DATE OF THE SONAR	DATE SUBMITTED	CAVERN VOLUME (BBLS)
TYPE OF ELECTRICAL OR OTHER LOGS RUN UNDER THIS APPLICATION ONLY (COPIES OF ALL LOGS MUST BE FILED WITH THE INJECTION & MINING DIVISION.)				PER LATEST SONAR DATED
WORK RÉSUMÉ				
List below all work performed (the drilling, completion, or any other work) under THIS Injection & Mining Division permit.				
DATE WORK PERFORMED (MM/DD/YYYY)	SERVICE COMPANY	DESCRIPTION OF WORK		
FORMATIONS				
List below all-important Paleofaunal or Geological Formation tops, Cap Rock and Salt Overhang bottoms.				
FORMATION	DEPTH (FT)	FORMATION	DEPTH (FT)	