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RAILROAD COMMISSION OF TEXAS

OIL AND GAS DIVISION

PERMIT TO GEOLOGIC STORAGE AND ASSOCIATED INJECTION OF ANTHROPOGENIC CARBON DIOXIDE (CO2)

ExxonMobil Low C Sol On Stor LLC (P5 # 101256)
Attn: Cody Todd
22777 Springwoods Village Pkwy
Spring, TX 77389

Class VI Permit Number: 57803
Project/Facility Name: Rose Carbon Capture and Storage
County: Jefferson, District 03

Effective Date: XXXXXX, 2025
Expiration Date: Life of the project, if injection begins within five (5) years from the effective date; otherwise, a renewal application must be filed with a fee within 21 days before XXXXXX, 2030.

Authority is granted to inject **anthropogenic CO2** into the wells identified herein in accordance with pursuant to the Texas Water Code, Chapter 27, the Texas Natural Resources Chapter 91, and Underground Injection Control (UIC) regulations of the Railroad Commission of Texas, codified at Title 16, Part 1, Chapter 5 of the Texas Administrative Code (16 TAC) Subchapters A and B, §§5.101, 5.102, 5.201, 5.202, 5.203, 5.204, 5.205, 5.206, 5.207, and 5.208, and based on information contained in the application dated May 2025, subject to the following terms and conditions:

TABLE 1: GENERAL INFORMATION

Source of CO2	Total CO2 Storage Mass (Million Metric Tons)	Duration of Injection (Years)	Top Confining Zone	Injection Zone Formation Name
Industrial Atmospheric Emission Points	53	13	Middle Miocene Amph 'B' and Anahuac Shale	Fleming and Upper Frio

TABLE 2: INJECTION WELL IDENTIFICATION AND PERMIT PARAMETERS

Project Well Name & No. (Regulatory Well Name & No.)	API No.	UIC No.	Top Inj. Interval, TVD (Feet)	Bottom Inj. Interval, TVD (Feet)	Max. Injection Mass Rate (Metric tons per day)	Max. Surface Injection Pressure (psi)	Max. Bottom Hole Injection Pressure (psi)
Rose CCS #01 (Labelle Properties Ltd #1)	42-245-32913		3,545	8,522	6,850	2,650	4,620
Rose CCS #02 (Bead Farm Co. #2)	42-245-32911		3,583	8,588	6,850	2,650	4,670
Rose CCS #03 (Bead Farm #3)	42-245-32912		3,469	8,406	6,850	2,650	4,553

TABLE 3: MONITOR WELL IDENTIFICATION

Well Name & No.	API No./Well ID	Purpose	Total Depth, TVD (Feet)	Date Drilled
Bead Farm Company #4	245-32914	In-Zone Monitoring	8,383	08/31/24
Bead Farm Co. #1	245-32908	Above-Zone Monitoring	8,664	10/15/23
USDW Monitoring #1	678487	Useable Groundwater Monitoring	330	08/20/24
USDW Monitoring #2R	683826	Useable Groundwater Monitoring	320	11/09/24
USDW Monitoring #3	688491	Useable Groundwater Monitoring	330	08/20/24
Shallow Groundwater #1	689934	Useable Groundwater Monitoring	25	09/19/24
Shallow Groundwater #2	689935	Useable Groundwater Monitoring	25	09/17/24
Shallow Groundwater #3	689936	Useable Groundwater Monitoring	25	09/17/24
Shallow Groundwater #4	689937	Useable Groundwater Monitoring	20	09/18/24

STANDARD CONDITIONS:

1. The operator must submit a proposed schedule at least **30 days** to District Office and notify at least **48 hours** prior to:

    a. beginning any well completion, workover or remedial operation
    b. conducting any required test, logging or surveys

    All information and test results must be filed with SIP unit using the email SIP@rrc.texas.gov. and a copy to the District Office, which shall be signed and certified.

2. Before surface casing is installed, the operator must run appropriate logs, such as resistivity, spontaneous potential, and caliper logs.

3. After each casing string is set and cemented, the operator must run logs, such as a cement bond log, variable density log, and a temperature log, to ensure proper cementing.

4. Before long string casing is installed, the operator must run logs appropriate to geology, such as resistivity, spontaneous potential, porosity, caliper, gamma ray, and fracture finder logs, to gather data necessary to verify the characterization of the geology and hydrology.

5. Injection must be through tubing set on a packer. The packer must be set no higher than 100 feet above the top of the permitted interval.

6. The well must be constructed using CO2 compatible materials.

7. The wellhead must be equipped with a pressure observation valve on the tubing and for annulus.

8. The well must use alarms and automatic shut-off systems designed to alert and shut-in the well when operating parameters such as annulus pressure, injection rate or other parameters diverge from permitted ranges.

9. The annulus between the tubing and the long string casing must be filled with a corrosion inhibiting fluid and must maintain on the annulus a pressure, that exceeds the operating injection pressure.

10. The total volume of CO_2 injected into the storage facility must be metered through a master meter. The volume and/or mass of CO_2 injected into each injection well must be metered through an individual well meter. If mass is determined using volume, the operator must provide calculations.

11. Prior to injection, whole cores or sidewall cores of the injection and confining zones; and formation fluid samples from the injection zone must be taken. Thereafter, a detailed report prepared by a log analyst that includes well log analyses, core analyses and formation fluid sample information such as temperature, pH, conductivity must be submitted.

12. Must provide the chemical composition and temperature of the CO_2 stream.

13. An annulus pressure test must be performed prior to injection and at least once **every five years** thereafter, or subsequently after any work over. The test pressure must equal the maximum authorized injection pressure or 500 psig, whichever is less, but must be at least 200 psig. The test results must be submitted in accordance with the instructions of **Form H-5** within **30 days** after the testing.

14. Prior to injection, the operator must perform an **initial** pressure fall-off or other test and submit a written report of the results of the test, including details of the methods used to perform the test and to interpret the results, all necessary graphs, and the testing log, to verify permeability, injectivity, and initial pressure using water or CO_2.

15. The injection pressure, rate, temperature, volume and/or mass, and the pressure on the annulus and annulus fluid volume added must be monitored **daily** and reported **semi-annually** on a monthly basis on Form H-10.

16. At least **once per year** until the injection well is plugged, the external mechanical integrity of the casing must be performed using a method approved by the director (e.g., diagnostic surveys such as oxygen-activation logging or temperature or noise logs). The results of the test, including details of the methods used to perform the test and to interpret the results, all necessary graphs, and the testing log must be submitted.

17. Within **30 days** after completion, a new Form W-2 and Log must be filed to show the current completion status of the well. The date of the injection well permit, and the permit number must be included on the new Form W-2.

18. Every **five years** or more frequently the AoR will be reevaluated, and the resultant information must be submitted in an electronic format.

19. The operator must submit an **annual report** detailing the re-calculated AOR unless the operator submits a statement signed by an appropriate company official confirming that monitoring and operational data supports the current delineation of the AOR on file with the Commission.

20. Injection fee. The operator must pay the Commission **an annual fee** of $0.025 per metric ton of CO_2 injected into the geologic storage facility.

21. Post-injection care fee. The operator must pay the Commission **an annual fee** of $50,000 for each year that the operator does not inject into the geologic storage facility until the director has authorized storage facility closure.

22. The operator may transfer the facility permit to another operator and must submit written notice of an intended permit transfer to the director at least **45 days** prior to the date the transfer of operations is proposed to take place.

23. The operator must identify each location in which geologic storage activities take place, including each injection well, with a sign that meets the requirements specified in 16 TAC §3.3(1), (2), and (5) of this title (relating to Identification of Properties, Wells, and Tanks). In addition, each sign must include a telephone number where the operator or a representative of the operator can be reached **24 hours a day**, **seven days a week** in the event of an emergency.

24. The operator of a geologic storage facility must comply with the requirements of Chapter 5, subchapter B as well as with all other applicable Commission rules and orders, including the requirements of Chapter 8 of this title (relating to Pipeline Safety Regulations) for pipelines and associated facilities.

25. Within **30 days** of receipt of this permit, the permittee shall certify to the Director in an electronic format, that the operator has read and is familiar with all terms and conditions of this permit. This certification shall be signed and made in accordance with requirements of Title 16 TAC §5.207(c) and (d).

26. The permittee may not commence injection until the Director has given a **written authorization** to commence injection.

SPECIAL CONDITIONS:

1. Following wells will require **corrective action prior to the commencement of CO2 injection** operations:

    - Broussard JE Jr Well No.1 (API 42-245-02193) and
    - Bead Farm Co. Well No. 1 (API 42-245-32908)

    Within **30 days** after plugging and/or recompletion, a complete well plugging record (Form W-3) and/or Form W-2 must be filed.

2. Injection cannot begin until a surety bond in an amount of **$23,631,000** has been filed. The bond must be renewed and continued in effect until the conditions of the bond or letter of credit have been met or its release is authorized. An **annual** update of the cost estimate to increase or decrease to account for any changes must be provided within **60 days** prior to the anniversary date of the establishment of the financial instruments used to comply. Whenever the current cost estimate increases or decreases, the face amount of the financial assurance instrument may be increased or reduced to the amount of the current cost estimate.

Provided further that, should it be determined that such injection fluid is not confined to the approved interval, then the permission given herein is suspended and the injection operation must be stopped until the fluid migration from such interval is eliminated. Failure to comply with all the conditions of this permit may result in the operator being referred to enforcement to consider assessment of administrative penalties and/or the cancellation of the permit.

APPROVED AND ISSUED ON **XXXXXX, 2025**

_____
Phillip Warren, PE, Manager
Special Injection Permits Unit

Class VI Permit Condition & Details

Table of Contents

A. EFFECT OF PERMIT 9
B. PERMIT ACTIONS 9
1. Modification, Revocation and Reissuance, and Termination 9
2. Minor Modifications 9
3. Transfer of Permit 9
C. SEVERABILITY 9
D. CONFIDENTIALITY 10
E. DEFINITIONS 10
F. DUTIES AND REQUIREMENTS 10
1. Prohibition of Movement of Fluid into a USDW 10
2. Duty to Comply 10
3. Duty to Reapply 10
4. Penalties for Violations of Permit Conditions 10
5. Need to Halt or Reduce Activity Not a Defense 11
6. Duty to Mitigate 11
7. Proper Operation and Maintenance 11
8. Duty to Provide Information 11
9. Inspection and Entry 11
10. Signatory and Certification Requirements 12
G. AREA OF REVIEW AND CORRECTIVE ACTION 12
H. FINANCIAL RESPONSIBILITY 13
1. Costs to be Covered 13
2. Cost Estimate Updates and Adjustments 13
3. Notification 14
I. WELL CONSTRUCTION 14
1. Injection Well Construction 14
2. Siting 15
3. Casing and Cementing 15
4. Tubing and Packer Specifications 15
5. Sampling and Monitoring Devices 15
6. Construction of Monitoring Well 16
J. PRE-INJECTION TESTING 16
K. INJECTION WELL OPERATING REQUIREMENTS 17
1. Outermost Casing Injection Prohibition 17

2. Injection Fluids/Carbon Dioxide Sources 17
3. Injection Pressure Limitation 17
4. Stimulation Program 18
5. Additional Injection Limitations 18
6. Annulus Fluid 18
7. Annulus/Tubing Pressure Differential 18
8. Automatic Alarms and Automatic Shut-off System 18
9. Precautions to Prevent Well Blowouts 18
10. Circumstances Under Which Injection Shall Cease 19
11. Approaches for Ceasing Injection 19
L. MECHANICAL INTEGRITY 20
1. Standards 20
2. Mechanical Integrity Testing 20
3. Prior Notice, MIT Procedures and Reporting 21
4. Gauge and Meter Calibration 22
5. Loss of Mechanical Integrity 22
6. Mechanical Integrity for Monitoring Wells 23
7. Mechanical Integrity Testing on Request from Director 23
M. SEISMIC EVENT RESPONSE 23
1. Seismic Monitoring 23
2. Seismic events not recorded or M less than 2.0 24
3. Seismic events with M equal to or greater than 2.0 but less than 3.5 24
4. Seismic Events with M equal to or greater than 3.5 24
N. TESTING AND MONITORING REQUIREMENTS 24
1. Testing and Monitoring Plan 24
2. Carbon Dioxide Stream Analysis 25
3. Continuous Monitoring 25
4. Groundwater (USDW) Monitoring Above the Confining Zone 25
5. Soil & Soil Gas Sampling 26
6. Carbon Dioxide Plume and Pressure Front Tracking 26
7. Corrosion Monitoring 26
8. External Mechanical Integrity Testing 26
9. Pressure Fall-Off Test 26
10. Additional Monitoring 26
O. REPORTING AND RECORDKEEPING 26

1. Electronic Reporting 27
2. Semi-Annual Reports 27
3. Twenty Four (24)-Hour Reporting 28
4. Reports on Well Tests and Workovers 29
5. Advance Notice Reporting 29
6. Additional Reports 29
7. Records and Record Retention 30
P. WELL PLUGGING, POST-INJECTION SITE CARE, AND SITE CLOSURE 31
1. Well Plugging Plan Revisions 31
2. Required Activities Prior to Plugging 31
3. Notice of Plugging and Abandonment 31
4. Plugging and Abandonment Approval and Report 31
5. Temporary Abandonment 32
6. Post-Injection Site Care and Site Closure Plan 32
Q. EMERGENCY AND REMEDIAL RESPONSE 33
R. COMMENCING INJECTION 34
S. PAYMENT OF FEES TO THE STATE OF TEXAS 35
1. Application Fee for Amendment 35
2. Injection Fee 35
3. Post-Injection Care Fee 35
ATTACHMENTS 36

PERMIT CONDITIONS

A. EFFECT OF PERMIT

The permittee is allowed to engage in underground injection in accordance with the conditions of this permit. Notwithstanding any other provisions of this permit, the permittee authorized by this permit shall not construct, operate, maintain, convert, plug, abandon, or conduct any other injection activity in a manner that allows the movement of injection, annulus, or formation fluids into underground sources of drinking water (USDW) or any unauthorized geologic zones. The objective of this permit is to prevent the movement of fluids into or between USDW or into any unauthorized geologic zones consistent with the requirements of **16 TAC §§5.203(d)(1)(C)**, **5.203(e)(1)(A)(i)** and **5.203(j)(2)(H)**. Any underground injection activity not specifically authorized in this permit is prohibited. For purposes of enforcement, compliance with this permit during its term constitutes compliance with Texas Water Code, Chapter 27, and the Texas Natural Resources Code, Chapter 91. Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local laws or regulations. Nothing in this permit shall be construed to relieve the permittee of any duties under applicable regulations.

B. PERMIT ACTIONS

1. **Modification, Revocation and Reissuance, and Termination –** The Director of the RRC Class VI UIC Program, hereinafter, the Director, may, for cause or upon request from any interested person, including the permittee, modify, revoke and reissue, or terminate this permit in accordance with **16 TAC §5.202(d)(2)(A)**. The filing of a request for a permit modification, revocation and reissuance, or termination, or notification of planned changes, or anticipated noncompliance on the part of the permittee does not stay the applicability or enforceability of any permit condition in accordance with **16 TAC §5.206(o)(2)(K)**.

2. **Minor Modifications –** Upon the consent of the permittee, the Director may modify a permit to make the corrections or allowances for minor changes in the permitted activity as listed in **16 TAC §5.202(d)(2)(A)(viii).** Any permit modification not processed as a minor modification under **16 TAC §5.202(d)(2)(A)(viii)** shall be made for cause, and with a draft permit and public notice as required in **16 TAC §5.204**.

3. **Transfer of Permit –** An operator may transfer its geologic storage facility permit to another operator if the requirements of **16 TAC §5.202(c)** are met. A new operator shall not assume operation of the geologic storage facility without a valid permit in accordance with **16 TAC §5.202(c)** and Section O(6)(b) of this permit.

C. SEVERABILITY

The provisions of this permit are severable under **16 TAC §5.208(b)**, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid,

the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

D. CONFIDENTIALITY

In accordance with the Texas Public Information Act, Texas Government Code, Chapter 552, any information submitted to the RRC pursuant to this permit may be claimed as confidential business information by the submitter. Any such claim shall be asserted at the time of submission by clearly identifying each page with the words "confidential business information" on every page containing such information. If no claim is made at the time of submission, the RRC may make the information available to the public without further notice. If a claim is asserted, the validity of the claim will be assessed in accordance with the procedures in the Texas Public Information Act, Texas Government Code, Chapter 552. Claims of confidentiality for the following information will be denied:

1. The name and address of the permittee; and

2. Information which deals with the existence, absence, or level of contaminants in drinking water.

E. DEFINITIONS

All terms used in this permit shall have the meaning set forth in the Texas Water Code, Chapter 27, or the Texas Natural Resources Code, Chapter 91, and the RRC's UIC regulations specified at **16 TAC §5.102**. Unless specifically stated otherwise, all references to "days" in this permit should be interpreted as calendar days.

F. DUTIES AND REQUIREMENTS

1. **Prohibition of Movement of Fluid into a USDW –** The permittee shall not construct, operate, maintain, convert, plug, abandon, or conduct any other injection activity in a manner that allows the movement of a fluid containing any contaminant into USDWs. If any water quality monitoring of a USDW indicates the movement of any contaminant into the USDW, the Director may take enforcement action or prescribe such additional requirements for construction, corrective action (including closure of the injection well), operation, monitoring, or reporting as are necessary to remediate and prevent such movement.

2. **Duty to Comply –** The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of **16 TAC §5.206(o)(2)(A)** and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application.

3. **Duty to Reapply –** If the permittee wishes to continue an activity regulated by this permit after its expiration, the permittee shall apply for and obtain a new permit.

4. **Penalties for Violations of Permit Conditions –** Any person who violates a permit requirement is subject to civil and/or criminal penalties and other enforcement action under the Texas Natural Resources Code, Title 3, Section 91.143 and Texas Water Code,

Chapter 27. Any person who willfully violates permit conditions may be subject to criminal prosecution under the Texas Natural Resources Code, Title 3, Section 91.143 and Texas Water Code, Chapter 27.

5. **Need to Halt or Reduce Activity Not a Defense –** It shall not be a defense for the permittee in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the conditions of this permit in accordance with **16 TAC §5.206(o)(2)(B)**.

6. **Duty to Mitigate –** The permittee shall take all timely and reasonable steps necessary to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit in accordance with **16 TAC §5.206(o)(2)(C)**.

7. **Proper Operation and Maintenance –** The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control and related appurtenances which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance include, among other things, effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit in accordance with **16 TAC §5.206(o)(2)(D)**.

8. **Duty to Provide Information –** The permittee shall furnish to the Director in electronic format, within the time specified by the type of submittal or as defined by the Director, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit or the UIC regulations. The permittee shall also furnish to the Director, upon request, within a time specified, electronic copies of records required to be kept in accordance with this permit by **16 TAC §5.206(o)(2)(H)**.

9. **Inspection and Entry –** The operator shall allow any member or employee of the Commission, on proper identification, to by **16 TAC §5.206(o)(2)(I):**

    (a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where electronic or non-electronic records are kept under the conditions of this permit.

    (b) Have access to and copy, at reasonable times, any electronic or non-electronic records that are kept under the conditions of this permit.

    (c) Inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit and

    (d) Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Texas Water Code, §27.071, or the Texas Natural Resources Code, §91.1012, any substances or parameters at any

location, including facilities, equipment or operations regulated or required under this permit.

10. **Signatory and Certification Requirements –** All reports, notifications, or any other information, required to be submitted by this permit or requested by the Director shall be signed and certified in accordance with **16 TAC §§5.206(o)(2)(L), 5.207(c)** and **5.207(d)**.

G. AREA OF REVIEW AND CORRECTIVE ACTION

1. The Area of Review (AoR) is the area surrounding the injection well where USDWs may be endangered by the injection activity. The area of review was delineated using computational modeling that accounts for the physical and chemical properties of all phases of the injected carbon dioxide stream and is based on available site characterization, monitoring, and operational data. The permittee shall maintain and comply with the approved AoR and Corrective Action Plan (CAP) included as Attachment A, which is an enforceable condition of this permit, and shall meet the requirements of **16 TAC §5.206(g)**.

2. As documented in Attachment A, two (2) wellbore penetrations within the AoR require plugging and recompletion because these wellbores penetrated the injection zone or confining layer within the Rose Carbon Capture and Storage Project prior to injection.

(a) Broussard JE Jr-1 (API: 42-245-02193) must be plugged by year end of 2025, following the re-entry and plugging procedures documented in the AoR and Corrective Action Plan (Attachment A) and

(b) Bead Farm Co. #1 (API: 42-245-32908) must be converted to Above Zone Monitor Well by year end of 2025, following the re-entry and recompletion procedures documented in the AoR and Corrective Action Plan (Attachment A).

3. At least sixty (60) days prior to commencing corrective action, the permittee shall notify the Director. As corrective action activities are completed, the permittee shall provide periodic updates, including plugging reports, to the Director.

4. Every five (5) years as specified in the AoR and CAP, or more frequently when monitoring and operational conditions warrant, the permittee shall reevaluate the AoR and perform corrective action in the manner specified in **16 TAC §5.206(g)** and update the AoR and CAP or demonstrate to the Director that no update is needed. Reevaluation of the AoR and CAP shall meet the requirements of **16 TAC §5.203(d)(1)(A) - (C)** and shall include a new survey of wells within the existing or modified AoR.

5. Following each AoR reevaluation or a demonstration that no evaluation is needed, the permittee shall submit a report of the resultant information in an electronic format to the Director for review and approval. Once approved by the Director, the revised AoR and CAP will become an enforceable condition of this permit.

H. FINANCIAL RESPONSIBILITY

The permittee shall maintain financial responsibility and resources to meet the requirements of **16 TAC §5.205** for the life of this permit and through all phases of the project. The permittee must maintain financial responsibility until site closure is authorized by the Director as described in Section P of this permit. The permittee shall use financial instruments as listed in **16 TAC §5.205(c)(2)(D)** to cover all costs associated with the requirements of this permit. The approved financial responsibility and estimated costs for this permit are found in Attachment J and in the administrative record of this permit.

1. **Costs to be Covered –** The financial instrument(s) shall be sufficient to cover the cost of:
   (a) Corrective action (that meets the requirements of **16 TAC §5.203(d)(2)**.

   (b) Injection well plugging (that meets the requirements of **16 TAC §5.203(k).**

   (c) Emergency and remedial response (that meets the requirements of **16 TAC §5.203(l).**

   (d) Post injection site care and site closure (that meets the requirements of **16 TAC §5.206(m)**.

2. **Cost Estimate Updates and Adjustments –** A detailed written estimate for each phase is included in Attachment J of this permit. The cost estimates must be performed for each phase separately and must be based on the costs to the Commission of hiring a third party to perform the required activities. A third party is a party who is not within the corporate structure of the owner or operator. and the dollar amount of the financial assurance shall be approved by the Director in accordance with **16 TAC §5.205(c)(2)(C)(i).**

   (a) A qualified professional engineer licensed by the State of Texas, as required under Occupations Code, Chapter 1001, relating to Texas Engineering Practice Act, must prepare or supervise the preparation of a written estimate of the highest likely amount necessary to close the geologic storage facility. The owner or operator must submit to the director the written estimate under seal of a qualified licensed professional engineer, as required under Occupations Code, Chapter 1001, relating to Texas Engineering Practice Act in accordance with **16 TAC §5.205(c)(2)(C)(ii).**

   (b) During the life of this permit, the permittee shall adjust the cost estimate for annual inflation and any amendments made to the Project Plans included as Attachments A-J of this permit, which address costs associated with items (a) through (d) in Section H(1) of this permit. The permittee shall adjust cost estimates annually at least 60 days prior to the anniversary date of the establishment of the financial instrument(s) and provide this adjustment to the Director in an electronic format in accordance with **16 TAC §5.205(c)(2)(E).** All cost and Project Plan adjustments are subject to the Director's approval.

3. **Notification –**

(a) Whenever a cost estimate increases to an amount greater than the face amount of a controlling financial instrument, the permittee, at least 60 days after the increase, shall either cause the face amount to be increased to an amount at least equal to the current cost estimate and submit evidence of such increase to the Director, or obtain other financial responsibility instruments to cover the increase. Whenever a current cost estimate decreases to an amount less than the face amount of a controlling financial instrument, the face amount of the financial assurance instrument may be reduced to the amount of the current cost estimate only after the permittee has received written approval from the Director in accordance with **16 TAC §5.205(c)(2)(G)**.

(b) The permittee shall notify the Director by certified mail and in an electronic format of adverse financial conditions that may affect the ability to carry out injection well plugging, post-injection site care and site closure, and any applicable ongoing actions under Corrective Action and/or Emergency and Remedial Response. The notice of bankruptcy shall be filed in accordance with **16 TAC §§3.1(f)** (relating to Organization Report; Retention of Records; Notice Requirements) and **5.205(d)(1)**. Such notice shall be provided to the RRC's Office of General Counsel and to the Director.

(i) The owner or operator filing a bond must ensure that the bond provides a mechanism for the bond or surety company to give prompt notice to the Commission and the owner or operator of any action filed alleging insolvency or bankruptcy of the surety company or the bank or alleging any violation that would result in suspension or revocation of the surety or bank's charter or license to do business in accordance with **16 TAC §5.205(d)(2)**.

(ii) Upon the incapacity of a bank or surety company by reason of bankruptcy, insolvency or suspension, or revocation of its charter or license, the Commission must deem the owner or operator to be without bond coverage in accordance with **16 TAC §5.205(d)(3).** The Commission must issue a notice to any owner or operator who is without bond coverage and must specify a reasonable period to replace bond coverage, not to exceed 60 days.

I. WELL CONSTRUCTION

The design and specifications for the injection well, injection zone monitoring wells, confining zone monitoring wells, and the USDW monitoring wells are included in Attachment B of this permit.

1. **Injection Well Construction –** The wells shall be constructed in accordance with **16 TAC §§3.13** and **5.203(e)(1)**. The design and construction shall allow continuous monitoring of the annulus between the long string casing and the injection tubing and accommodate testing devices and workover tools. During construction, the permittee may make changes to the design of the injection well consistent with the conditions of this permit. If changes are made to the design of the well, notification shall be made to the

Director, and the construction changes shall be provided for review and approval by the Director before installation. Once the construction of the well is completed, and prior to authorization to inject, the permittee shall submit the final, as-built construction specifications and diagrams within 30 days for review and approval by the Director. Any deviations from the proposed design and as-built construction of the well shall be noted. If the changes in well design are significant, the Director may require this permit to be modified.

2. **Siting –** The permittee has demonstrated to the satisfaction of the Director that the well is in an area with suitable geology in accordance with the requirements at **16 TAC §5.206(b)(6)**.

3. **Casing and Cementing –** The wells shall be cased and cemented in accordance with **16 TAC §§3.13 and 5.203(e)(1)(B)**. Casing, cement, or other materials used in the construction of the well shall have sufficient structural strength for the life of the geologic sequestration project. All well materials shall be compatible with all fluids with which the materials may be expected to come into contact and shall meet or exceed standards developed for such materials by the American Petroleum Institute, ASTM International, or comparable standards acceptable to the Director. The casing and cementing program shall prevent the movement of fluids into or between USDWs for the expected life of the well. The casing and cement used in the construction of this well are shown in Attachment B of this permit and in the administrative record for this permit. Any changes shall be submitted in an electronic format for approval by the Director before installation.

4. **Tubing and Packer Specifications –** The tubing and packer design shall meet the requirements of **16 TAC §§3.13** and **5.203(e)**. Tubing and packer materials used in the construction of the well shall be compatible with fluids with which the materials may be expected to come into contact and shall meet or exceed standards developed for such materials by the American Petroleum Institute, ASTM International, or comparable standards acceptable to the Director. Injection shall only take place through the tubing, with a packer set in the long string casing within or below the nearest cemented and impermeable confining system no more than 100 feet above the injection zone in accordance with **16 TAC §5.203(e)(1)(C)(i)**. The tubing and packer used in the well are represented in engineering drawings contained in Attachment B of this permit. Any change shall be submitted in an electronic format for review and approval by the Director before installation.

5. **Sampling and Monitoring Devices –** The permittee shall install and maintain in good condition all devices required to measure, monitor, and record the data required by Attachment F of this permit. The permittee shall ensure that the devices installed, and methods used are sufficient to represent the activity being measured, monitored, or recorded. Calculated flow data or periodic monitoring are not acceptable for required continuous monitoring except as a back-up system if the primary continuous monitoring devices become inoperable. The Director shall be notified of such occurrences, and continuous monitoring devices should be repaired or replaced as soon as practicable. If this period of time is extensive in the opinion of the Director, injection activities shall cease until such time that normal monitoring is restored. The permittee shall ensure the wells' construction and near-wellhead design is appropriate for the collecting of samples and

fulfilling of all monitoring requirements of this permit. The permittee shall ensure all gauges used for monitoring and testing are properly calibrated.

6. **Construction of Monitoring Well – 16 TAC §§5.203(j)(2)(D)(i), 5.203(j)(2)(D)(ii), 5.203(j)(2)(E),** and **5.203(j)(2)(G)** require monitoring of the carbon dioxide plume and pressure front of the confining and injection zones and monitoring of USDW located above the injection zone. These sections are incorporated by reference into this permit. USDW, confining zone, and injection zone monitoring wells shall be constructed in the manner depicted in Attachment B of this permit using materials that are compatible with the injected fluids. All monitoring wells shall be constructed in a manner to provide representative samples that can be analyzed for the monitoring parameters required by this permit. Once the construction of the monitoring wells has been completed, the as-built construction diagrams shall be included in the Pre-injection Testing Report to be submitted to the Director in accordance with Section J of this permit.

J. PRE-INJECTION TESTING

Testing is required during the construction of the well in accordance with **16 TAC §5.203(f)**. This testing is required to verify the geology of the well site to ensure compliance with the well construction requirements in accordance with **16 TAC §5.203(e)** and to test viability of the wells to meet the stipulated operational requirements. The pre-injection testing plan is included as Attachment D of this permit.

1. Prior to the Director authorizing injection, the permittee shall perform all pre-injection logging, sampling, and testing specified at **16 TAC §5.203(f)**. This testing shall include:

    (a) Logs, surveys and tests to determine or verify the depth, thickness, porosity, permeability, lithology, and formation fluid salinity in all relevant geologic formations. These tests shall include:

        (i) Deviation checks that meet the requirements of **16 TAC §5.203(f)(1)(A).**

        (ii) Logs and tests before and upon installation of the surface casing that meet the requirements of **16 TAC §5.203(f)(1)(B).**

        (iii) Logs and tests before and upon installation of the long-string casing that meet the requirements of **16 TAC §5.203(f)(1)(D).**

        (iv) Tests to demonstrate internal and external mechanical integrity that meet the requirements of **16 TAC §5.203(h)** and

        (v) Any alternative methods (MIT), provided that the type of test has the written approval of the Administrator pursuant to requirements at **16 TAC §5.203(h)(2)(E).**

    (b) Documentation of the measured fluid temperature, pH, conductivity, reservoir pressure, and static fluid level of the injection zone that meet the requirements of **16 TAC §5.203(f)(3)(A)**.

(c) Whole cores or sidewall cores of the injection zone and confining system and formation fluid samples from the injection zone that meet the requirements of **16 TAC §5.203(f)(3)(B)**.

(d) Tests to determine well-specific data regarding the injection and confining zones. These tests shall determine fracture pressure and the physical and chemical characteristics of the injection and confining zones and the formation fluids in the injection zone that meet the requirements of **16 TAC §§5.203(f)(2)(C)** and **5.203(f)(3)(B)**.

(e) Tests to verify hydrogeologic characteristics of the injection zone that meet the requirements of **16 TAC §5.203(f)(2),** including:

(i) A pressure fall-off test or

(ii) Other test and submit to the director a written report of the results of the test, including details of the methods used to perform the test and to interpret the results, all necessary graphs, and the testing log, to verify permeability, injectivity, and initial pressure using water or CO2.

2. The permittee shall submit to the Director for approval in an electronic format a schedule for pre-operational testing activities 30 days prior to conducting the first test and submit any changes to the schedule 30 days prior to the next scheduled test. The permittee shall provide the Director with the opportunity to witness all logging, sampling, and testing required under this permit and submit notice at least 48 hours in advance of any actual activity in accordance with **16 TAC §5.206(i)**.

K. INJECTION WELL OPERATING REQUIREMENTS

1. **Outermost Casing Injection Prohibition –** Injection between the outermost casing protecting USDWs and the well bore is prohibited.

2. **Injection Fluids/Carbon Dioxide Sources –** The carbon dioxide to be sequestered comes from high-concentration industrial sources including clean hydrogen, ammonia, direct reduced iron plants, and natural gas treatment facilities that feed into ExxonMobil's Gulf Coast CO2 pipeline network. The permittee may propose additional sources of carbon dioxide for injection, subject to review and approval by the Director.

3. **Injection Pressure Limitation –** Except during stimulation, the permittee shall ensure that injection pressure does not exceed 90 percent of the fracture pressure of the injection zone(s) to ensure that the injection does not initiate new fractures or propagate existing fractures in the injection zone(s). Under no circumstance shall injection pressure initiate fractures or propagate existing fractures in the confining zone or cause the movement of injection or formation fluids into a USDW. The maximum injection pressure limit is listed in Attachment E of this permit.

4. **Stimulation Program –** All stimulation activities shall be approved by the Director prior to conducting the stimulation. The permittee shall carry out the Stimulation Program in accordance with Attachment C of this permit.

5. **Additional Injection Limitations –** No injection fluid other than that identified on Page 1 of this permit may be injected except fluids used for stimulation, rework, and well tests as approved by the Director. Injection shall occur within the injection tubing.

6. **Annulus Fluid –** The permittee shall fill the annulus between the tubing and the long string casing with a non-corrosive fluid approved by the Director.

7. **Annulus/Tubing Pressure Differential –** Except during workovers or times of annulus maintenance, the permittee shall maintain pressure on the annulus that exceeds the operating injection pressure as specified in Attachment E of this permit, unless the Director determines that such requirement might harm the integrity of the well or endanger USDW.

8. **Automatic Alarms and Automatic Shut-off System –**

(a) The permittee shall:

i. Install, continuously operate, and maintain an automatic alarm and automatic shut-off system or, at the discretion of the Director, down-hole shut-off systems, or other mechanical devices that provide equivalent protection; and

ii. Successfully demonstrate the functionality of the alarm system and shut-off system prior to the Director authorizing injection, and at a minimum of once every twelfth month after the last approved demonstration.

iii. Establish well-specific thresholds for activating the shut-off system and submit revised Attachments E & H.

(b) Testing under this Section shall involve subjecting the system to simulated failure conditions and shall be witnessed by the Director or the Director's representative unless the Director authorizes an unwitnessed test in advance. The permittee shall provide notice in an electronic format at least 30 days prior to running the test and shall provide the Director or the Director's representative with the opportunity to witness the test. The test shall be documented using either a mechanical or digital device which records the value of the parameter of interest, or by a service company job record. A final report including any additional interpretation necessary for evaluation of the testing shall be submitted to the Director in an electronic format within the time period specified in Section O(4) of this permit.

9. **Precautions to Prevent Well Blowouts –** Except at specific times as approved by the Director, the permittee shall maintain on the well a pressure which will prevent the return of the injection fluid to the surface. The wellbore shall be filled with a fluid of sufficient specific gravity during workovers to maintain a positive (downward) pressure gradient and/or a plug shall be installed which can resist the pressure differential. A blowout

preventer shall be installed and kept in proper operational condition whenever the wellhead is removed to work on the well. The permittee shall follow procedures such as those below to ensure that a backflow or blowout does not occur:

(a) Limit the temperature and/or corrosivity of the injectate; and

(b) Develop procedures necessary to ensure that pressure imbalances do not occur.

10. Circumstances Under Which Injection Shall Cease – Injection shall cease when any of the following circumstances arises:

(a) Failure of the well to pass a mechanical integrity test;

(b) A loss of mechanical integrity during operation;

(c) The automatic alarm or automatic shut-off system is triggered;

(d) A significant unexpected change in the annulus or injection pressure;

(e) The Director determines that the well lacks mechanical integrity;

(f) Movement of injection or formation fluids into a USDW is detected;

(g) Conditions described in Section M(C)(3), Seismic Event Response, occur;

(h) The Director determines the site is no longer suitable for injection based on new information; and

(i) The Director determines that the permittee is unable to maintain compliance with any condition of this permit or regulatory requirement, and the Director determines that injection should cease.

11. Approaches for Ceasing Injection –

(a) In all instances where injection ceases, the permittee shall immediately cease injection and shut-in the well as outlined in the Emergency and Remedial Response Plan (Attachment H of this permit), and the Permittee must get approval from the Director to resume injection.

(b) If an automatic shutdown (i.e., down-hole or at the surface) is triggered, the Permittee must immediately investigate and identify the cause of the shutdown as expeditiously as possible. If, upon investigation, the well appears to lack mechanical integrity, or if the required monitoring of data from continuous recording devices or automatic shutoff systems indicates that the well may lack mechanical integrity, the Permittee must take the actions listed below in Section L of this Permit.

L. MECHANICAL INTEGRITY

The injection wells shall maintain internal (casing, tubing and packer) and external (fluid movement into geologic units other than the injection zone) mechanical integrity for the entirety of its operational life. No significant leaks in the casing, tubing, or packer can occur without corrective actions. The determination of whether the injection well has mechanical integrity is at the discretion of the Director. Mechanical integrity is determined through testing and test procedures approved by the Director. Approved mechanical integrity testing procedures are in the Testing and Monitoring Plan in Attachment F of this permit. Other tests and/or procedures not listed in this plan will be considered by the Director for approval.

1. **Standards –** Other than during periods of well workover (repair or maintenance) approved by the Director in which the sealed tubing-casing annulus is disassembled for maintenance or corrective procedures, the injection well shall have and maintain mechanical integrity consistent with **16 TAC §5.203(h).** To meet these requirements, mechanical integrity tests/demonstrations shall be witnessed by the Director or an authorized representative of the Director unless prior approval has been granted by the Director to run an un-witnessed test. In order to conduct testing without a RRC representative, the following procedures shall be followed:

    (a) The permittee shall submit prior notification in an electronic format at least 30 days prior to testing, including the information that no RRC representative is available, and receive permission from the Director to proceed.

    (b) The test shall be performed in accordance with the Testing and Monitoring Plan (Attachment F of this permit) and documented using either a mechanical or digital device that records the value of the parameter of interest; and

    (c) A final report including any additional interpretation necessary for evaluation of the testing shall be submitted in an electronic format within the time period specified in Section O(4) of this permit.

2. **Mechanical Integrity Testing –** The permittee shall conduct a casing inspection log and mechanical integrity testing (MIT) as follows:

    (a) After construction, and prior to receiving authorization to inject from the Director, the permittee shall demonstrate internal mechanical integrity of the well. This demonstration is achieved by the performance of the following testing pursuant to **16 TAC §5.203(h)(2):**

        (i) A pressure test with liquid or gas.

        (ii) A casing inspection log; or

        (iii) An alternative approved by the Director that has been approved by the Administrator pursuant to requirements at **16 TAC §5.203(h)(2)(E)**.

(b) Prior to receiving authorization to inject, the permittee shall perform the following testing to demonstrate external mechanical integrity pursuant to **16 TAC §5.203(h)(2)**:

(i) Tracer surveys such as an oxygen activation log.

(ii) Temperature or noise logs.

(iii) An alternative approved by the Director that has been approved by the Administrator pursuant to requirements at **16 TAC §5.203(h)(2)(E).**

(c) Other than during periods of well workover (repair or maintenance) approved by the Director, in which the sealed tubing-casing annulus is disassembled for maintenance or corrective procedures, the permittee shall continuously monitor injection pressure, injection rate, injection mass, pressure on the annulus between tubing and long string casing, and annulus fluid volume as specified in **16 TAC §§5.203(h)(1)(C)** and **5.206(e)(2)**.

(d) At least once per year, the permittee shall perform the testing to demonstrate external mechanical integrity pursuant to **16 TAC §5.203(h)(1)(D)** and as listed in Section L(2)(b) of this permit. All test data shall be sent to SIP@rrc.texas.gov and a copy to District Director.

(e) After any well repair or workover that may compromise the internal mechanical integrity of the well, the internal mechanical integrity of the well shall be demonstrated by conducting test(s) approved by the Director. In cases where a well has lost mechanical integrity, written approval by the Director is required before the injection can resume. All test data shall be sent to SIP@rrc.texas.gov and a copy to District Director.

(f) Prior to plugging the well, the permittee shall demonstrate external mechanical integrity as described in Attachment G and it meets the requirements of **16 TAC §5.203(k).** Written approval by the Director is required before plugging operations may commence. All test data shall be sent to SIP@rrc.texas.gov and a copy to District Director.

(g) The Director may require the use of other tests to demonstrate mechanical integrity other than those listed above, provided that the type of test has the written approval of the Administrator pursuant to requirements at **16 TAC §5.203(h)(2)(E).** All test data shall be sent to SIP@rrc.texas.gov and a copy to District Director.

3. Prior Notice, MIT Procedures and Reporting –

(a) The permittee shall notify the Director in an electronic format of intent to demonstrate mechanical integrity at least 30 days prior to such a demonstration. At the discretion of the Director a shorter time period may be allowed.

(b) The mechanical integrity tests and procedures are listed in Attachments D and F. Use of non-approved tests and procedures may result in disqualification of the tests.

(c) Reports of mechanical integrity demonstrations which include logs shall include an interpretation of results by a knowledgeable log analyst. The permittee shall report in an electronic format the results of a mechanical integrity demonstration within 30 days of the testing.

4. **Gauge and Meter Calibration –** Prior to testing, the permittee shall calibrate all gauges and meters used in monitoring and testing required by this permit. A copy of the calibration certificate shall be submitted to the Director in an electronic format with the report of the test per **16 TAC §5.206(e)(5)(B)(i)** and the operator and the director must apply methods and standards generally accepted in the industry in accordance with **16 TAC §5.207(a)(1)**.

5. **Loss of Mechanical Integrity –**

(a) If the permittee or the Director finds that a well fails to demonstrate mechanical integrity during a test, or fails to maintain mechanical integrity during operation, or that a loss of mechanical integrity as defined by **16 TAC §5.102(36)** is suspected during operation (such as a significant unexpected change in the annulus or injection pressure), the permittee shall:

(i) Cease injection in accordance with Section K(9), and Attachments E or H of this permit;

(ii) Take all steps that are reasonably necessary to determine whether there may have been a release of the injected carbon dioxide stream or formation fluids into any unauthorized zone. If there is evidence of potential USDW endangerment, the Emergency and Remedial Response Plan shall be implemented (Attachment H of this permit);

(iii) Follow the reporting requirements as directed in Section O of this permit;

(iv) Restore and demonstrate mechanical integrity to the satisfaction of the Director and receive written approval from the Director prior to resuming injection; and

(v) Notify the Director in an electronic format when injection can be expected to resume.

(b) If an automatic shutdown (i.e., downhole or at the surface) is triggered, the permittee shall immediately investigate and identify as expeditiously as possible the cause of the shutdown. If, upon investigation, the well appears to be lacking mechanical integrity, or if the required monitoring indicates that the well may be lacking mechanical integrity, the permittee shall take the actions listed above in Section L(5)(a)(i) through (v).

(c) If the well loses mechanical integrity prior to the next scheduled test date, then the well shall either be plugged or repaired and retested within 30 days of losing mechanical integrity. The permittee shall not resume injection until mechanical integrity is demonstrated and the Director gives written approval to resume injection in cases where the well has lost mechanical integrity.

6. **Mechanical Integrity for Monitoring Wells –** All monitoring wells shall maintain internal and external mechanical integrity for the entirety of their operational life**.** No significant leaks in the casing can occur and require corrective actions**.** The determination of whether the monitoring well has mechanical integrity is at the discretion of the Director**.** Mechanical integrity tests and procedure for the confining zone, injection zone and USDW monitoring wells are outlined in Attachment F of this permit**.** Testing and demonstration of monitoring wells shall be conducted on the same schedule as the injection well. Other tests and/or procedures not listed in this plan will be considered by the Director for approval.

7. **Mechanical Integrity Testing on Request from Director –** The permittee shall demonstrate mechanical integrity at any time upon written notification from the Director.

M. SEISMIC EVENT RESPONSE

1. Seismic Monitoring –

(a) Prior to commencing injection, the permittee must deploy and maintain a seismic monitoring system to determine the presence or absence, magnitude, and hypocenter location, of any induced seismic activity of magnitude 3.5 M or above, within a 5.6 mile radius of the injection wells. If, after injection start-up and a subsequent period of sustained injection by all planned injection wells at the maximum permitted rates, the permittee can demonstrate that permanent seismic monitoring is not needed for this project, the Commission may allow the local seismic monitoring to be discontinued and defer instead to state (TexNet) and/or national (USGS) arrays for long-term monitoring.

(b) The system should be designed with surface monitors and/or downhole monitors as required to meet minimum magnitude of completeness (Mc) of 1.8 M or an alternative site-appropriate minimum magnitude approved by the Director in consultation with the State Seismologist, and to appropriately calibrate event magnitudes and hypo central locations. The system shall be calibrated with check-shots, sonic logs, or other local velocity information, preferably in depth.

(c) The permittee shall analyze seismic and other relevant data to determine whether the risk of triggering an earthquake of magnitude 3.5 M or greater is significantly increased by injection. If, after analysis of seismic and other relevant data, the permittee determines that there is such an increase in risk, the permittee shall notify the Director immediately and submit to the Director a mitigation plan for the Director’s review within 15 days of that determination. The permittee shall implement the plan as approved by the Director. The appropriate response to seismic events depends on the Magnitude (M) of the seismic event according to the following protocol:

2. **Seismic events not recorded or M less than 2.0 –** Continue normal operations.

3. **Seismic events with M equal to or greater than 2.0 but less than 3.5 –** The permittee shall notify the Director (District Director or Technical Permitting Director) of any such event within 24 hours, providing information on the status of the injection site. If the annulus pressure of the well decreases below the set alarm, injection operations shall cease. In that situation, within 30 days the permittee shall evaluate the internal mechanical integrity of the well by performing tests in accordance with Section L(2)(a) of this permit. If the well fails the mechanical integrity test or the permittee identifies any problems with the injection system that might impact a USDW, the injection well shall remain shut-in and the permittee shall submit a report in electronic format as soon as possible but no later than five (5) days from the time the permittee becomes aware of the circumstances. The report shall contain a description of the circumstances and if the situation has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the circumstances. Upon completion of the steps to ensure mechanical integrity and the subsequent mechanical integrity demonstration, the permittee shall submit the results and any other required documentation to the Director in an electronic format. If after the testing the well demonstrates mechanical integrity and issues that might impact USDWs are not identified, the permittee shall provide a report of those findings to the Director for review and approval. Injection operations cannot resume until the Director grants approval to recommence injection.

4. **Seismic Events with M equal to or greater than 3.5 –** For seismic events equal to or greater than 3.5 M, injection operations shall immediately cease. The permittee shall notify the Director of any such event within 24 hours, providing information on the status of the injection well system. If the annulus pressure decreased below the well's set alarm before shutting in the well, then the permittee shall evaluate the internal mechanical integrity of the well by performing tests in accordance with Section L(2)(a) of this permit. The permittee shall also perform an evaluation of the external mechanical integrity of the well in accordance with Section L(2)(b) of this permit. If the well fails either the internal or external mechanical integrity test or the permittee identifies any problems with the system that might impact a USDW, the injection well shall remain shut-in and the permittee shall submit a report in electronic format as soon as possible but no later than 30 days from the time the permittee becomes aware of the circumstances. The report shall contain a description of the failure and if the failure has not been corrected, the anticipated time it is expected to continue, and steps taken or planned to reduce, eliminate, and prevent recurrence of the failure. Upon completion of the steps to ensure mechanical integrity and the subsequent mechanical integrity demonstration, the permittee shall submit the results and any other required documentation to the Director. Injection operations cannot resume until the Director grants approval to recommence injection.

N. TESTING AND MONITORING REQUIREMENTS

1. **Testing and Monitoring Plan –** The specific measurement and reporting frequencies are listed in Attachment F.

(a) The permittee shall maintain and comply with the approved Testing and Monitoring Plan included as Attachment F of this permit and with the requirements at **16 TAC §§5.206(e)**, and **5.206(o)(2)(I)**, and any modifications required by the Director after the effective date of this permit. The Testing and Monitoring Plan is an enforceable condition of this permit. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. Procedures for all testing and monitoring under this permit shall be submitted to the Director in an electronic format for approval at least 30 days prior to the test if they plan to deviate from the procedures outlined in Attachment F of this permit. When the test report is submitted, a full explanation shall be provided as to why any approved procedures were not followed. If the approved procedures were not followed, the Director may take appropriate action, including but not limited to, requiring the permittee to re-run the test.

(b) The permittee shall update the Testing and Monitoring Plan as required by **16 TAC §5.207(a)(2)(D)** to incorporate monitoring and operational data and in response to AoR reevaluations required under Section G(1) of this permit or demonstrate to the Director that no update is needed. The amended Testing and Monitoring Plan or demonstration shall be submitted to the Director in an electronic format within one year of an AoR reevaluation; following any significant changes to the facility such as the addition of monitoring wells or newly permitted injection wells within the AoR; or when required by the Director.

(c) Following each update of the Testing and Monitoring Plan or a demonstration that no update is needed, the permittee shall submit the resultant information in an electronic format to the Director for review and approval of the results. Once approved by the Director, the revised Testing and Monitoring Plan will become an enforceable condition of this permit.

2. **Carbon Dioxide Stream Analysis –** The permittee shall analyze the carbon dioxide stream prior to injection and with sufficient frequency to yield data representative of its chemical and physical characteristics, as described in the Testing and Monitoring Plan and to meet the requirements of **16 TAC §5.203(j)(2)(A)**.

3. **Continuous Monitoring –** The permittee shall install and use continuous recording devices to monitor the injection pressure (at surface and at injection interval), injection flow rate, injection mass, pressure on the annulus between the tubing and the long string of casing, annulus fluid level, and temperature (at surface and at injection interval). This monitoring shall be performed as described in the Testing and Monitoring Plan to meet the requirements of **16 TAC §5.203(j)(2)**. The permittee shall maintain for inspection at the facility an appropriately scaled, continuous record of these monitoring results as well as original files of any digitally recorded information pertaining to these operations.

4. **Groundwater (USDW) Monitoring Above the Confining Zone –** The permittee shall monitor groundwater (USDW) quality and geochemical changes above the confining zone that may be a result of carbon dioxide movement through the confining zone and additional identified geologic units. All monitoring conducted shall be performed for the parameters identified in the approved Testing and Monitoring Plan at the locations and

depths, and at frequencies described in the Testing and Monitoring Plan to meet the requirements of **16 TAC §5.203(j)(2)(D)**.

5. **Soil & Soil Gas Sampling –** Soil and soil gas sampling will be contingent upon and triggered by detection of any USDW contamination in the monitor wells. In such an instance, the permittee shall monitor near-surface unsaturated zone soil and soil gas to meet the requirements of **16 TAC §5.203(j)(2)(H).**

6. **Carbon Dioxide Plume and Pressure Front Tracking –** The permittee shall track the extent of the carbon dioxide plume and pressure front using direct and indirect monitoring methods as described in the approved Testing and Monitoring Plan and in accordance with **16 TAC §5.203(j)(2)(E).** The permittee is required to conduct this monitoring in order to detect and locate the carbon dioxide pressure front and the dissolved carbon dioxide plume and use the data to calibrate the AoR model to determine whether modifications to the AoR is necessary. The data collected will be used to monitor the location of the plume and pressure front, evaluate its movement through time, and compare to the plume and pressure front predictions of the AoR model. Tracking the extent of the CO_2 plume and the position of the pressure front by using indirect, geophysical techniques, which may include seismic, electrical, gravity, or electromagnetic surveys and/or down-hole CO_2 detection tools.

7. **Corrosion Monitoring –** The permittee shall perform corrosion monitoring of the well construction materials for loss of mass, thickness, cracking, pitting, and other signs of corrosion on a quarterly basis using the procedures described in the Testing and Monitoring Plan and in accordance with **16 TAC §5.203(j)(2)(C).** This ensures that the well components meet the minimum standards for material strength and performance set forth in **16 TAC §5.203(e)(1)(B)**.

8. **External Mechanical Integrity Testing –** The permittee shall demonstrate external mechanical integrity annually as described in the approved Testing and Monitoring Plan and shall comply with Section L of this permit in order to meet the requirements of **16 TAC §§5.203(h)(1)(D)** and **5.206(e)(1)**.

9. **Pressure Fall-Off Test –** The permittee shall conduct a pressure fall-off test at least once every five (5) years unless more frequent testing is required by the Director based on site-specific information. The test shall be performed as described in the Testing and Monitoring Plan to meet the requirements of **16 TAC §5.203(j)(2)(G)**.

10. **Additional Monitoring –** If required by the Director as provided in **16 TAC §5.203(j)(2)(H)** the permittee shall perform any additional monitoring determined to be necessary to support, upgrade, and improve computational modeling of the AoR evaluation.). An update shall be made to the Testing and Monitoring Plan, and the subsequent monitoring shall be performed as described in the update.

O. REPORTING AND RECORDKEEPING

The permittee shall submit reports at frequencies described in the approved Testing and Monitoring Plan, and as required by this permit. Reports shall contain all the data and

information required to be monitored, gathered, and reported by this permit and meet the requirements of **16 TAC §§5.206(c), 5.206(d), 5.206(e),** and **5.207**.

1. **Electronic Reporting –** All reports, submittals, notifications, correspondence to the Director, and records made and maintained by the permittee under this permit shall be in an electronic format. The permittee shall electronically submit all required reports to an address or location as determined by the Director.

2. **Semi-Annual Reports –** The permittee shall submit reports on a semi-annual basis in accordance with **16 TAC §5.207(a)(2)(C).** The reporting period for semi-annual reports will be from January 1 through June 30 and from July 1 through December 31. Reports shall be submitted within 30 days of the end of each reporting period. Semi-annual reports shall include all data collected on a continuous, daily, monthly, quarterly and semi-annual basis as described in the approved Testing and Monitoring Plan. The second semi-annual report for each year shall include all data collected on an annual basis as described in the approved Testing and Monitoring Plan. Reports shall contain the following information and data, as well as all other information and data collected not listed below, but as described in the approved Testing and Monitoring Plan:

    (a) Any changes to the physical, chemical, and other relevant characteristics of the carbon dioxide stream from the proposed operating data.

    (b) Monthly average, maximum, and minimum values for injection pressure, flow rate and daily volume, temperature, and annular pressure.

    (c) A description of any event that exceeds operating parameters for annulus pressure or injection pressure specified in this permit.

    (d) A description of any event which triggers the shut-off systems required in Section (K)(6) of this permit pursuant to **16 TAC §5.206(d)(2)(F)** and the response taken.

    (e) The monthly volume and mass of the carbon dioxide stream injected over the reporting period and the volume and mass injected cumulatively as of the end of the reporting period.

    (f) Monthly annulus fluid volume added or removed; and

    (g) Results of the continuous monitoring required in Section N(3) including:

        (i) A tabulation of: (1) daily maximum injection pressure, (2) daily minimum annulus pressure, (3) daily minimum value of the difference between simultaneous measurements of annulus and injection pressure, (4) daily volume and mass, (5) daily maximum flow rate, and (6) average annulus tank fluid level; and

        (ii) Graph(s) of the continuous monitoring as required in Section N(3) of this permit, or of daily average values of these parameters. The injection pressure, injection volume and mass and flow rate, annulus fluid level, annulus pressure, and temperature shall be submitted on one or more

graphs, using contrasting symbols or colors, or in another manner approved by the Director.

(h) Results of any additional monitoring identified in the Testing and Monitoring Plan and described in Section N of this permit.

3. Twenty-Four (24)-Hour Reporting –

(a) The permittee shall report to the Director any permit noncompliance which may endanger human health or the environment and any events that require implementation of actions in the Emergency and Remedial Response Plan (Attachment H of this permit). Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. Such oral reports should include, but need not be limited to the following information:

(i) Any evidence that the injected carbon dioxide stream or associated pressure front may cause endangerment to a USDW, or any monitoring or other information which indicates that any contaminant may cause endangerment to a USDW;

(ii) Any noncompliance with a permit condition, or malfunction of the injection system, which may cause fluid migration into or between USDWs;

(iii) Any triggering of the shut-off system required in Section (K)(7) of this permit (i.e., downhole or at the surface);

(iv) Any failure to maintain mechanical integrity;

(v) Pursuant to compliance with the requirement for surface air/soil gas monitoring or other monitoring technologies, if required by the Director in accordance with **16 TAC §5.203(j)(2)(H)** due to any release of carbon dioxide to the atmosphere or biosphere; and

(vi) Actions taken to implement appropriate protocols outlined in the Emergency and Remedial Response Plan (Attachment H of this permit).

(c) A written submission shall be provided to the Director in an electronic format within five (5) days of the time the permittee becomes aware of the circumstances described in Section O(3)(a) of this permit. The submission shall contain a description of the noncompliance or emergency, or remedial response and its cause; the period of noncompliance, emergency, or remedial response, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue as well as actions taken to implement appropriate protocols outlined in the Emergency and Remedial Response Plan (Attachment H of this permit); and steps taken or planned to reduce, eliminate and prevent recurrence of the noncompliance or emergency or condition requiring remedial response.

4. Reports on Well Tests and Workovers – Report within 30 days, the results of:

(a) Periodic tests of mechanical integrity;

(b) Any well workover, including stimulation;

(c) Any other test of the injection well conducted by the permittee if required by the Director; and

(d) Any test of any monitoring well required by this permit

5. Advance Notice Reporting –

(a) **Well Tests –** The permittee shall give at least 30 days advance written notice to the Director in an electronic format of any planned workover, stimulation, or other well test and submit notice at least 48 hours in advance of any actual activity.

(b) **Planned Changes –** The permittee shall give written notice to the Director in an electronic format, as soon as possible, of any planned physical alterations or additions to the permitted facility. An analysis of any new injection fluid shall be submitted to the Director for review and written approval at least 30 days prior to injection; this approval may result in a permit modification.

(c) **Anticipated Noncompliance –** The permittee shall give at least 14 days advance written notice to the Director in an electronic format of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

6. Additional Reports –

(a) **Compliance Schedules –** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted in an electronic format by the permittee no later than 45 days following each schedule date.

(b) **Transfer of Permits –** This permit is not transferable to any person except after notice is sent to the Director in an electronic format at least 45 days prior to transfer and the requirements of **16 TAC §5.202(c)** have been met. Pursuant to requirements at **16 TAC §5.202(d)(2)(A)(v)(VIII),** the Director will require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the SDWA. All financial responsibility cost estimates, documentation, and instruments as required by **16 TAC §5.203(n)** and by Section H of this permit shall be updated and provided to the Director by any new owner or operator of the well.

(c) **Other Noncompliance –** The permittee shall report in an electronic format all other instances of noncompliance not otherwise reported with the next monitoring report. The reports shall contain the information listed in Section O(3)(a) of this permit.

(d) **Other Information –** When the permittee becomes aware of failure to submit any relevant facts in the permit application or that incorrect information was submitted in a permit application or in any report to the Director, the permittee shall submit such facts or corrected information in an electronic format within 10 days of discovery in accordance with **16 TAC §5.203(p)**.

7. Records and Record Retention –

(a) The permittee shall retain records and all monitoring information, including all calibration and maintenance records and all original chart recordings for continuous monitoring instrumentation and copies of all reports required by this permit (including records from pre-injection, active injection, and post-injection phases) for a period of at least 10 years from collection.

(b) The permittee shall maintain records of all data required to complete the permit application form for this permit and any supplemental information (e.g., modeling inputs for AoR delineations and reevaluations, plan modifications) submitted under **16 TAC §§5.206(l), 5.206(m),** and **5.207(e)** until at least 10 years after site closure.

(c) The permittee shall retain records concerning the nature and composition of all injected fluids until at least 10 years after site closure.

(d) The retention periods specified in Section O(7)(a) through (c) of this permit may be extended by the Director at any time. The permittee shall continue to retain records after the retention period specified in Section O(7)(a) through (c) of this permit or any extension thereof expires unless the permittee delivers the records to the Director or obtains written approval from the Director to discard the records.

(e) Records of monitoring information shall include:

(i) The date, exact place, and time of sampling or measurements.

(ii) The name(s) of the individual(s) who performed the sampling or measurements.

(iii) A precise description of both sampling methodology and the handling of samples.

(iv) The date(s) analyses were performed.

(v) The name(s) of the individual(s) who performed the analyses.

(vi) The analytical techniques or methods used and

(vii) The results of such analyses.

P. WELL PLUGGING, POST-INJECTION SITE CARE, AND SITE CLOSURE

The permittee shall maintain and comply with the approved Well Plugging Plan (Attachment G) and the approved Post Injection Site Care and Site Closure Plan (Attachment I) and shall comply with the requirements of **16 TAC §§3.14, 5.203(k), 5.205(b), 5.205(c), 5.205(d), and 5.206(k)(6)(A).** The Well Plugging Plan and the Post-Injection Site Care and Site Closure Plan are enforceable conditions of this permit.

1. **Well Plugging Plan Revisions –** If data indicates and the permittee deems it necessary, or if the Director requires the approved plans in Attachments G and I of this permit to be modified, revised plan(s) shall be submitted in an electronic format to the Director for review and written approval. Any amendments to the Well Plugging Plan and/or the Post-Injection Site Care and Site Closure plan shall be approved by the Director and shall be incorporated into the permit and are subject to the permit modification requirements at **16 TAC §5.203(k)(3)(A)**.

2. **Required Activities Prior to Plugging –** The permittee shall flush the wells with an inert buffer fluid, determine the post-injection bottomhole pressure, and perform final internal and external mechanical integrity tests prior to injection well plugging. The internal and external mechanical integrity tests shall be performed as required by Section L of this permit.

3. **Notice of Plugging and Abandonment –** The permittee shall notify the Director in writing in an electronic format pursuant to **16 TAC §5.206(k)(6)(A)** least 60 days before plugging, conversion or abandonment of the well. A shorter notice period may be allowed at the discretion of the Director.

4. **Plugging and Abandonment Approval and Report –**

   (a) The permittee shall receive written approval from the Director before plugging the well and shall plug and abandon the well as required by **16 TAC §§3.14** and **5.203(k),** as described in the approved Well Plugging Plan (Attachment G of this permit).

   (b) Within 30 days after plugging, the permittee shall submit in an electronic format a plugging report to the Director. The report shall be signed and certified by the permittee in accordance with **16 TAC §5.203(k)(4),** and by the person who performed the plugging operation (if other than the permittee.) The permittee shall retain the well plugging report in an electronic format for ten (10) years following site closure. The report shall include:

      (i) A statement that the well was plugged in accordance with the approved Well Plugging Plan (Attachment G of this permit); or
      (ii) If the actual plugging differed from the approved plan, a statement describing the actual plugging and an updated plan specifying the differences from the plan previously submitted and explaining why the Director should approve

such deviation. If the Director determines that a deviation from the plan incorporated in this permit may endanger USDWs, the permittee shall replug the well as required by the Director.

5. **Temporary Abandonment –** If the permittee ceases injection for more than 24 consecutive months, the well is considered to be in a temporarily abandoned status, and the permittee shall plug and abandon the well in accordance with the approved Well Plugging Plan, **16 TAC §5.203(k)**, or make a demonstration of non-endangerment of this well that is satisfactory to the Director while it is in temporary abandonment status. During any periods of temporary abandonment or disuse, the well shall be tested to ensure that it maintains mechanical integrity, in compliance with the requirements and frequency specified in Section L(2) of this permit. The permittee shall continue to comply with the conditions of this permit, including all monitoring and reporting requirements in compliance with all requirements of this permit and all applicable regulations.

6. **Post-Injection Site Care and Site Closure Plan –** The permittee shall maintain and comply with the Post-Injection Site Care and Site Closure Plan in Attachment I of this permit and comply with the requirements of **16 TAC §§5.203(m)**, and **5.206(k).** The Post-Injection Site Care period is the length of time anticipated to demonstrate that the carbon dioxide injection poses no threat to USDWs and is an enforceable condition of this permit.

   (a) Upon cessation of injection, the permittee shall either submit in electronic format for the Director's approval an amended Post-Injection Site Care and Site Closure Plan or demonstrate through monitoring data and modeling results that no amendment to the plan is needed.

   (b) At any time during the life of the project, the permittee may modify and resubmit in an electronic format the Post-Injection Site Care and Site Closure Plan for the Director's approval in accordance with **16 TAC §5.206(k)(1)(B).** The permittee may, as part of such modifications to the Plan, request a modification to the post-injection site care timeframe that includes documentation of the information in **16 TAC §5.203(m)(7)**.

   (c) The monitoring as outlined in the approved Post-Injection Site Care and Site Closure Plan shall define the position of the carbon dioxide plume and pressure front, provide a comparison of data collected to the predictions made by the AoR model, and demonstrate that USDWs are not being endangered in accordance with **16 TAC §§5.206(e)(3)** and **5.206(k)(3)(A)**.

   (d) Prior to authorization for site closure, the permittee shall submit to the Director for review and approval, in an electronic format, a demonstration, based on information collected pursuant to Section P(6)(b) of this permit, that the carbon dioxide plume and the associated pressure front do not pose an endangerment to USDWs and that no additional monitoring is needed to ensure that the project does not pose an endangerment to USDWs, as required in **16 TAC §5.206(k)(3)**. The Director reserves the right to amend the post-injection site monitoring requirements (including an extension of the monitoring period) if there is a concern that USDWs are at risk of endangerment.

(e) The permittee shall notify the Director in an electronic format at least 120 days before site closure. At this time, if any changes to the approved Post-Injection Site Care and Site Closure Plan in Attachment I of this permit are proposed, the permittee shall submit a revised plan.

(f) After the Director has authorized site closure, the permittee shall plug all monitoring wells as specified in Attachments G and I of this permit in a manner which will not allow movement of injection or formation fluids that endangers a USDW. The permittee shall also restore the surface site to its pre-injection condition.

(g) The permittee shall submit a site closure report in an electronic format to the Director within 90 days of site closure. The report shall include the information specified at **16 TAC §5.206(k)(6)**.

(h) The permittee shall record a notation on the deed to the facility property or any other document that is normally examined during a title search that will in perpetuity provide any potential purchaser of the property the information listed at **16 TAC §5.206(l)**.

(i) The permittee shall retain for 10 years following site closure an electronic copy of the site closure report, records collected during the post-injection site care period, and any other records required under **16 TAC §§5.203(k), 5.206(j)** and **5.206(k)(6).** The permittee shall deliver the records in an electronic format to the Director at the conclusion of the retention period.

Q. EMERGENCY AND REMEDIAL RESPONSE

The Emergency and Remedial Response Plan describes actions the permittee shall take to address movement of the injection or formation fluids that may cause endangerment to a USDW during construction, operation, and post-injection site care periods. The permittee shall maintain and comply with the approved Emergency and Remedial Response Plan (Attachment H of this permit), which is an enforceable condition of this permit, and comply with the requirements of **16 TAC §5.203(l)**.

1. If the data collected indicates evidence that the carbon dioxide plume and or pressure front may cause endangerment to a USDW, the permittee shall:

(a) Cease injection in accordance with Sections K(9) and Attachments E or H of this permit;

(b) Take all reasonable steps necessary to identify and characterize any release from the underground injection system;

(c) Notify the Director within 24 hours.

2. Annual update is required in accordance with **16 TAC §5.207(a)(2)(E).** Operators must submit an annual statement, signed by an appropriate company official, confirming that the operator has:

(a) Reviewed the monitoring and operational data that are relevant to a decision on whether to reevaluate the AoR and the monitoring and operational data that are relevant to a decision on whether to update an approved plan required by **16 TAC §§5.203 or 5.206** of this title;

(b) Determined whether any updates were warranted by material change in the monitoring and operational data or in the evaluation of the monitoring and operational data by the operator; and

(c) Operators must submit either the updated plan or a summary of the modifications for each plan for which an update the operator determined to be warranted pursuant to subclause (I) of this clause. The director may require submission of copies of any updated plans and/or additional information regarding whether or not updates of any particular plans are warranted.

At least every five years, or more frequently if the monitoring and operational data warrant, the permittee shall review and update the Emergency and Remedial Response Plan or demonstrate to the Director that no update is needed. The permittee shall also incorporate monitoring and operational data and in response to AoR reevaluations required under Section G(4) of this permit or demonstrate to the Director that no update is needed. The amended Emergency and Remedial Response Plan or demonstration shall be submitted to the Director in an electronic format within thirty (30) days of an AoR reevaluation in accordance with **16 TAC §5.207(a)(3),** following any significant changes to the facility such as the addition of injection wells, or when required by the Director. If the amendments to the Emergency and Remedial Response Plan cause the cost estimates to change, then a new Financial Responsibility Demonstration shall be submitted for review and approval by the Director in accordance with Section H of this permit.

3. Following each update of the Emergency and Remedial Response Plan or a demonstration that no update is needed, the permittee shall submit the resultant information in an electronic format to the Director for review and confirmation of the results. Once approved by the Director, the revised Emergency and Remedial Response Plan will become an enforceable condition of this permit.

R. COMMENCING INJECTION

The permittee may not commence injection until:

1. Results of the formation testing and logging program as specified in Section J of this permit and in **16 TAC §5.203(f)** are submitted to the Director in an electronic format and subsequently reviewed and approved by the Director;

2. Mechanical integrity of the wells has been demonstrated in accordance with **16 TAC §§5.102(36)**, **5.203(h)(1)(B)** and **5.203(h)(1)(D)**, and in accordance with Section L(1) through (3) of this permit;

3. The completion of corrective action required by the Area of Review and Corrective Action Plan found in Attachment A of this permit in accordance with **16 TAC §5.203(d)(1)(C)**;

4. All requirements at **16 TAC §5.203** have been met, including but not limited to reviewing and updating of the Area of Review and Corrective Action, Testing and Monitoring, Well Plugging, Post-Injection Site Care and Site Closure, and Emergency and Remedial Response plans to incorporate final site characterization information, final delineation of the AoR, and the results of pre-injection testing, and information has been submitted in an electronic format, reviewed and approved by the Director;

5. Construction is complete and the permittee has submitted to the Director in an electronic format a notice that completed construction is in compliance with **16 TAC §5.203(e)(1)** and Section I of this permit;

6. The Director has inspected or otherwise reviewed the injection well and all submitted information and finds it is in compliance with the conditions of the permit;

7. The Director has approved demonstration of the alarm system and shut-off system under Section K(7) of this permit; and

8. The Director has given written authorization to commence injection.

S. PAYMENT OF FEES TO THE STATE OF TEXAS

In accordance with **16 TAC §5.205**, the permittee shall pay the following fees:

1. **Application Fee for Amendment –** The applicant must pay to the Commission an application fee of $25,000 for each application to amend a permit for a geologic storage facility in accordance with **16 TAC §5.205(a)(1)(B)**.

2. **Injection Fee –** The operator must pay to the Commission an annual fee of $0.025 per metric ton of CO_2 injected into the geologic storage facility in accordance with **16 TAC §5.205(a)(2)**.

3. **Post-Injection Care Fee –** The operator must pay to the Commission an annual fee of $50,000 each year the operator does not inject into the geologic storage facility until the director has authorized storage facility closure in accordance with **16 TAC §5.205(a)(3)**.

ATTACHMENTS

These attachments include, but are not limited to, permit conditions and plans concerning operating procedures, monitoring and reporting, as required by **16 TAC §§5.203, 5.205, 5.206, and 5.207.** The permittee shall comply with these conditions and adhere to these plans as they are approved by the Director by their incorporation into this permit.

A. AREA OF REVIEW AND CORRECTIVE ACTION PLAN

B. WELL CONSTRUCTION PLAN

C. STIMULATION PLAN

D. PRE-INJECTION/PRE-OPERATIONAL TESTING PLAN

E. INJECTION WELL OPERATING CONDITIONS

F. TESTING AND MONITORING PLAN

G. WELL(S) PLUGGING PLAN

H. EMERGENCY AND REMEDIAL RESPONSE PLAN

I. POST-INJECTION SITE CARE AND SITE CLOSURE PLAN

J. FINANCIAL ASSURANCE DEMONSTRATION

Railroad Commission of Texas Attachment A

Area of Review and Corrective Action Plan

Underground Injection Control – Class VI Permit Application for Rose CCS Project Injection Wells No. 01, No. 02, and No. 03

SECTION 3 – AREA OF REVIEW AND CORRECTIVE ACTION PLAN

Rose Carbon Capture and Storage Project

Jefferson County, Texas

ExxonMobil Low Carbon Solutions Onshore Storage LLC

May 2025

SECTION 3 – AREA OF REVIEW AND CORRECTIVE ACTION PLAN

TABLE OF CONTENTS

3.0 Area of Review and Corrective Action Plan 7
3.1 Objectives 7
3.2 Facility Information 8
3.3 Derivation of Input Parameter Values for Geologic Properties 9
3.3.1 Porosity and Permeability 9
3.3.2 Rock Compressibility 10
3.3.3 Relative Permeability 11
3.3.4 Capillary Pressure 13
3.3.5 Fluid Pressure 14
3.3.6 Temperature 15
3.3.7 Formation Compressibility 16
3.3.8 Initial Saturation 16
3.4 Derivation of Input Parameter Values for Fluid Properties 17
3.4.1 Fluid Composition 17
3.4.2 Fluid Density and Viscosity 17
3.4.3 Fluid Compressibility 20
3.5 Derivation of Input Parameter Values for Chemical Properties 21
3.5.1 Aqueous Solubility 21
3.5.2 Solubility in Carbon Dioxide 22
3.6 Model Design and Input Parameters 22
3.6.1 Model Background 23
3.6.2 System Orientation and Simulation Controls for Model 25
3.6.3 Fluid Injection Rates 27
3.6.4 Fracture Pressure and Fracture Gradient 32
3.6.5 Boundary Conditions 35
3.7 AoR Delineation Based on Model Results 35
3.7.1 Extent of CO2 Plume 35
3.7.2 Delineation of the Critical-Pressure Front 43
3.8 Stages of Model Development 53
3.9 Corrective Action Plan and Schedule 53

3.9.1 Data Acquisition and Evaluation of Artificial Penetration Information....54
3.9.2 Corrective Action Plan for Artificial Penetrations....65
3.9.3 Corrective Action Sequence Plan....70
3.9.4 Site-Specific Review of Corrective Actions....72
3.9.5 Stratigraphic Well P&A and Conversion....73
3.9.6 Plan for Site Access....73
3.10 AoR Reevaluation Plan and Schedule....74
3.10.1 Frequency of AoR Reevaluation....74
3.10.2 Content of the AoR Reevaluation....75
3.10.3 Conditions Warranting AoR Reevaluation....75

List of Tables

Table 3-1: Relative-Permeability Bins and Associated Parameters....12
Table 3-2: Bead Farm No.1 Fluid Sampling Results....17
Table 3-3: Pure Phase and Saturated Phase CO2 and Brine Viscosity and Density....18
Table 3-4: Summary of Input Parameter Values for Model....26
Table 3-5: Summary of Input Parameter Values for Injection Wells....27
Table 3-6: Summary of Completion Stages and Intervals for Rose CCS Project Injection Well No. 1....29
Table 3-7: Summary of Completion Stages and Intervals for Rose CCS Project Injection Well No. 2....29
Table 3-8: Summary of Completion Stages and Intervals for Rose Injection Well No. 3....29
Table 3-9: Modeled Injection Rates and Pressures for Rose CCS Project Injection Well No. 01....30
Table 3-10: Modeled Injection Rates and Pressures for Rose CCS Project Injection Well No. 02....30
Table 3-11: Modeled Injection Rates and Pressures for Rose CCS Project Injection Well No. 03....30
Table 3-12: Calculated Fracture Gradients for the Proposed Injection Zones....32
Table 3-13: Maximum Modeled Bottomhole Injection Pressures....33
Table 3-14: Input Parameter Values for Critical-Pressure Calculation at Rose CCS Project Injection Well No. 01, Fleming Sand 1....44
Table 3-15: Calculated Critical-Pressure Rise for Rose CCS Project Injection Intervals....45
Table 3-16: Summary of Artificial Penetrations within AoR....55
Table 3-17: List of Artificial Penetrations and Schedule for Corrective Action....69

Table 3-18: Summary of P&A Deficiency for Wells Penetrating UCCZ....69
Table 3-19: Summary of Corrective Actions for Wells Penetrating the UCCZ....72
Table 3-20: Summary of Access Milestones for Corrective Action....74
Table 3-21: Triggers for AoR Reevaluation....76

List of Figures

Figure 3-1: Pore Volume Compressibility as a Function of Initial Porosity....10
Figure 3-2: Sand Compressibility Unload/Reload Above Initial Reservoir Pressure from Bead Farm Co. #1....11
Figure 3-3: Drainage and Imbibition Relative-Permeability Function....12
Figure 3-4: Capillary Pressure Functions....14
Figure 3-5: Stratigraphic Well (Bead Farm Co. #1) Pressure Gradient....15
Figure 3-6: Stratigraphic Well (Bead Farm Co. #1) Temperature Gradient....16
Figure 3-7(a): Pure Phase and Saturated Phase CO2 Density vs Depth....19
Figure 3-7(b): Pure Phase and Saturated Phase Brine Density vs Depth for Salinity = 81,000 ppm Case....20
Figure 3-8: Brine compressibility at Different Pressure and Temperature....21
Figure 3-9: CO2 Solubility in Brine at Different Temperature....22
Figure 3-10(a): CO_2 Storage Mechanisms....24
Figure 3-10(b): Modeled Trapping Mechanisms....25
Figure 3-11: Extent of Simulation Boundary, AoR, and Geologic Features in the Model Domain....26
Figure 3-12: Summary of Injection Intervals and Durations for Each Injection Well....28
Figure 3-13: Injection Rates and Pressures – Rose CCS Project Injection Well No. 01....31
Figure 3-14: Injection Rates and Pressures – Rose CCS Project Injection Well No. 02....31
Figure 3-15: Injection Rates and Pressures – Rose CCS Project Injection Well No. 03....32
Figure 3-16: Time-Lapse Migration of CO2 Plume....37
Figure 3-16(a): CO2 Plume Year 5....38
Figure 3-16(b): CO2 Plume Year 10....39
Figure 3-16(c): CO2 Plume Year 13....40
Figure 3-16(d): CO2 Plume Year 15....41
Figure 3-16(e): CO2 Plume Year 20....42
Figure 3-17: Modeled Areal Plume Size, Growth Rate, and Stabilization....43
Figure 3-18: Time- Lapse Migration of Critical-Pressure Front....47

Figure 3-18(a): Pressure Front Year 1 48
Figure 3-18(b): Pressure Front Year 5 49
Figure 3-18(c): Pressure Front Year 10.....50
Figure 3-18(d): Pressure Front Year 13 51
Figure 3-19: Delineated Area of Review.....52
Figure 3-20: 1952 Historical Aerial Photograph of Broussard Trust-1 (API: 4224500111) 57
Figure 3-21: 1959 Historical Aerial Photograph of Broussard JE Jr-1 (API: 4224502193) 58
Figure 3-22: 1952 Historical Aerial Photograph of Broussard J. E. Etal-1 (API: 4224502194) ...59
Figure 3-23: Aeromagnetic Survey Grid and Magnetic Anomalies within AoR.....61
Figure 3-24: Aeromagnetic Survey Analysis of Anomalies 62
Figure 3-25: GPRS Geophysical Survey Image of Broussard Trust-1 (API: 4224500111).....64
Figure 3-26: Artificial Penetrations for Corrective Action 67

Appendix C – AoR Maps and Corrective Action Well Schematics

Appendix C-1: Bead Farm Co. #1, Rose Stratigraphic Well Corrective Action Schematic

Appendix C-2: Broussard JE Jr-1 Well Corrective Action Schematic

Appendix C-3: Broussard J.E. Etal Well Schematic

Appendix C-4: Drone Aeromagnetic Survey of the Cheek Property: Beaumont, Texas for ExxonMobil by Sander Geophysics Limited (September 2023)

Appendix C-5: Artificial Penetration Records

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3.0 Area of Review and Corrective Action Plan

ExxonMobil Low Carbon Solutions Onshore Storage LLC (ExxonMobil) is submitting this Underground Injection Control (UIC) Class VI Permit Application (Application) to the United States Environmental Protection Agency (EPA) for the Rose Carbon Capture and Storage (CCS) Project (Project). ExxonMobil is undertaking the Project in Jefferson County, Texas to sequester a maximum of five million metric tonnes per annum (MMta) of carbon dioxide (CO2) using three injection wells over an injection period of up to 13 years. The predicted total CO2 storage is 53 million metric tonnes. The Area of Review (AoR) and Corrective Action Plan was prepared to meet the requirements of Code of Federal Regulations, Title 40, Section 146.84(b) [40 CFR 146.84(b)] and Texas Administrative Code, Part 1 Title 16 Chapter 5.

No significant risk to underground sources of drinking water (USDW) was identified because the confining zone characteristics are consistent with the requirements of 40 CFR 146.82(a)(3)(iii) for confining the CO2 plume. Two artificial penetrations are located within the refined AoR that require corrective action. The two artificial penetrations, which cross the upper composite confining zone (UCCZ), have been addressed in advance of CO2 injection. One of the artificial penetrations (Bead Farm Co. #1) has been plugged across the UCCZ and subsequently converted to an above-zone monitor for collection of fluid samples above the UCCZ.

ExxonMobil is pursuing individual Class VI permits to convert for three injection wells. Given the close proximity of the injection wells for the Project, ExxonMobil plans to obtain approval from the UIC Program Director to delineate the AoR and prepare the Corrective Action Plan to represent the collective effects of the three injection wells within Project AoR. Although the effects were evaluated in the collective, the required maps showing the delineated AoR and the Corrective Action Plan for artificial penetrations are submitted separately for each well so that they may be incorporated into each injection well's Class VI permit.

3.1 Objectives

A comprehensive modeling and evaluation effort was undertaken to accomplish the following objectives, consistent with the requirements of 40 CFR 146.84(b):

- Predict the extent of the CO2 plume and pressure front, which form the basis for the AoR using computational modeling and identify all wells that require corrective action [40 CFR 146.84(c)];
- Provide a plan to perform the required corrective action on artificial penetrations in the AoR [40 CFR 146.84(d)] that could threaten USDW;
- Support the development of effective monitoring strategies for the Testing and Monitoring Plan by identifying the locations where groundwater quality or pressure monitoring should be performed;
- Help direct emergency response planning by identifying potential vulnerable areas within or near the AoR that could require consideration when implementing an emergency response;
- Ensure that the Emergency and Remedial Response Plan and financial responsibility demonstration account for the most recently approved AoR [40 CFR 146.84(f)];
- Provide a guide for periodic AoR reevaluations to informed site management and monitoring over the lifecycle of the injection Project [40 CFR 146.84(e)]; and

- Retain modeling inputs and data used to support AoR reevaluations for 10 years [40 CFR 146.84(g)].

3.2 Facility Information

The following facility information is provided to specify the names and locations of the three injection wells.

Geologic Sequestration Project name:	ExxonMobil Low Carbon Solutions Onshore Storage LLC – Rose Carbon Capture and Storage Project

Injection Well Information:

Well Name and Number	Labelle Properties Ltd #1 (**Rose CCS Project Injection Well No. 01)**
County	Jefferson
Location (RR D, S, A)	Railroad District 3, Section 42, Abstract 874
Latitude / Longitude (NAD83)	29.999678 / -94.285108
American Petroleum Institute	4224532913

Well Name and Number	Bead Farm Co. #2 (**Rose CCS Project Injection Well No. 02)**
County	Jefferson
Location (RR D, S, A)	Railroad District 3, Section 41, Abstract 266
Latitude / Longitude (NAD83)	29.991017 / -94.298036
American Petroleum Institute	4224532911

Well Name and Number	Bead Farm #3 (**Rose CCS Project Injection Well No. 03)**
County	Jefferson
Location (RR D, S, A)	Railroad District 3, Section 8, Abstract 658
Latitude / Longitude (NAD83)	30.011778 / -94.297858
American Petroleum Institute	4224532912

3.3 Derivation of Input Parameter Values for Geologic Properties

ExxonMobil recognizes that parameter values for the prediction of the AoR are to be based on site-specific data to the extent possible. A stratigraphic well (Bead Farm Co. #1; American Petroleum Institute [API] 4224532908) was completed and core samples were collected from the well to obtain the necessary site geologic characterization data for the CO2 plume model. Additionally, where appropriate, the parameter values were estimated from standard values published for similar rock types and relationships in the scientific literature. As outlined below, ExxonMobil derived initial estimates of formation intrinsic permeability, porosity, relative permeability, compressibility, fluid viscosity, and fluid density from the available information, with emphasis on the available stratigraphic well data and test results, as appropriate.

The site-specific characteristics that make the Project site ideal for carbon sequestration are described in Section 2.12 of Section 2 – Site Characterization. In summary, the sands of the Fleming and Frio Formations exhibit high porosity and permeability that are ideal for CO2 storage and are “of sufficient areal extent, thickness porosity and permeability to receive the total anticipated volume of the carbon dioxide stream” [40 CFR 146.83(a)(1)]. Both the UCCZ and Anahuac Shale are thick, continuous sealing intervals across the AoR and are sufficient to “contain the injected carbon dioxide stream and displaced formation fluids and allow injection at proposed maximum pressure and volumes without initiating or propagating fractures in the confining zone” [40 CFR 146.83(a)(2)].

3.3.1 Porosity and Permeability

Porosity information was obtained from 16 well logs within the geologic model of the area of interest, which includes the AoR and a significant area surrounding the AoR. This information was utilized to generate a three-dimensional geologic model for the Project area. Most of the porosity data were provided based on compressional sonic data. Some bulk density data were also used to inform the estimates of porosity for the formations. Porosity and permeability data were gathered from the stratigraphic well (Bead Farm Co. #1) and incorporated into the geologic model for the Project area.

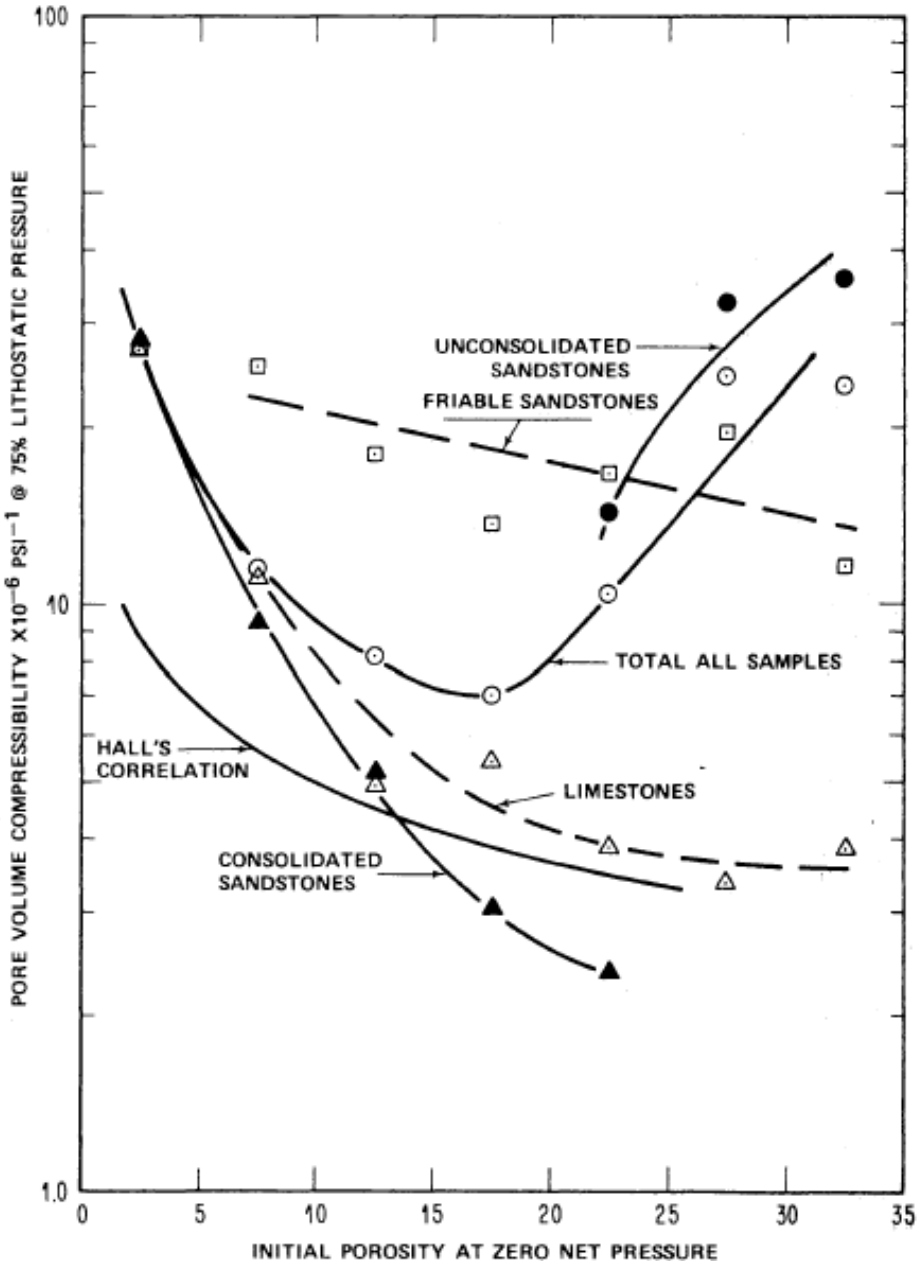
Permeability was modeled based on the results of the total porosity estimate calculations. Separate porosity-permeability transforms were developed for the Fleming and Frio. The nuclear magnetic resonance log was calibrated against core from the stratigraphic well and used to define porosity-permeability relationships across the range of net reservoir facies to address limitations in the core analyses. This relationship was then upscaled using Swanson’s mean to account for differences between core, log, and model scales (Delfiner, 2007).

The results presented below reflect a site-specific set of properties that extend beyond the predicted extent of the CO2 plume and the AoR boundary. The results of the model continue to demonstrate, as did the initial model effort, how the sequestration of CO2 is protective of USDWs.

3.3.2 Rock Compressibility

Based on the rock compressibility measurements for the sandstone samples collect at the stratigraphic well, an average value of Claimed as PBI [redacted]. These values are reasonably consistent with the available literature values. Figure 3-1 provides a literature-based relationship between pore volume compressibility and initial porosity. The average rock compressibility values derived from various cored intervals of the stratigraphic well are demonstrated in Figure 3-2. These values are consistent with the literature-based ranges described in Figure 3-1.

Figure 3-1: Pore Volume Compressibility as a Function of Initial Porosity



Source: Newman, 1973

Figure 3-2: Sand Compressibility Unload/Reload Above Initial Reservoir Pressure from Bead Farm Co. #1



3.3.3 Relative Permeability

Relative-permeability curves were generated based on research of analogous depositional environments. Traditional core testing has difficulty accurately measuring the endpoints of the curves, resulting in high irreducible water saturations and low CO2 endpoints (Benson et al., 2013). In drainage CO2-brine relative-permeability experiments, as water saturation decreases, capillary forces become larger [i.e., capillary pressure (P_c)] and increase rapidly in the approach to the irreducible water saturation. During the experiment, the increase in capillary forces limits further reduction in water saturation (i.e., the viscous force is too small relative to the capillary force). This causes the experimental relative-permeability measurements to end at water saturations higher than the actual irreducible water saturation. For this reason, it is recommended to fit a Corey-Brooks expression to the experimental data and to extrapolate the curve to a representative value of irreducible water saturation.



Table 3-1: Relative-Permeability Bins and Associated Parameters

Claimed as PBI

The irreducible water saturation was assumed to be in the range of 6 percent (%) to 42% based on published values for various sand qualities in the available Gulf Coast regional data. Fitting the endpoints to the experimental data resulted in brine and CO2 exponents of 5 and 2, respectively. The geologic model permeability property is based on absolute gas permeability shown on Figure 3-3.

Figure 3-3: Drainage and Imbibition Relative-Permeability Function

Claimed as PBI

The Corey function for gas and water relative permeability is defined as follows, where the Corey exponents are listed in Table 3-1 to be 2 and 5 for gas and water phases, respectively.

(Eq. 1) $$k_{rg} = k_{rg,max} \times \left(\frac{S_g - S_{gc}}{1 - S_{gc} - S_{wirr}}\right)^{n_g}$$

$$k_{rw} = k_{rw,max} \times \left(\frac{1 - S_g - S_{wirr}}{1 - S_{wirr}}\right)^{n_w}$$

$$S_{g,max} = 1 - S_{wirr}$$

The gas hysteresis behavior was incorporated into the displacement curve to account for trapped gas as a CO2 storage mechanism. The approach represents CO2 replacing water as gas saturation, and the amount of CO2 increases until it reaches maximum gas saturation. Afterwards, during the imbibition process, water drives CO2 out of the pore space and gas saturation decreases until it reaches trapped gas saturation (S_{gt}). This value can be measured through laboratory testing. The initial estimate of S_{gt} was based on available literature and the following correlation (Land, 1971):

(Eq. 2) $$C = \frac{1}{S_{gt}} - \frac{1}{S_{g,max}}$$

For the Project, a value of C = 2.2 was chosen based on published clastic rock measurements (Land, 1971). This results in an initial estimated trap gas saturation value of 0.3.

3.3.4 Capillary Pressure

Initial estimates of capillary pressure were estimated using capillary pressure functions by the Brooks-Corey capillary pressure model:

(Eq. 3) $$P_c = P_{c,th} \times {S_{wn}}^B$$

$$S_{wn} = \frac{S_w - S_{wirr}}{1 - S_{wirr}}$$

where $P_{c,th}$ is threshold (entry) capillary pressure.

A range of $0 < P_{c,th} < 3$ psi was assumed to be a reasonable quality clastic rock at reservoir conditions. The values chosen for each S_{wirr} bin are listed in Table 3-1. Exponent B is related to pore size distribution index l and estimated based on Burdine's theory:

(Eq. 4) $$B = \frac{1}{l} = -\frac{nw-3}{2}$$

In a gas-water system, the Brooks-Corey capillary pressure model (Eq. 3) indicates that the capillary pressure curves steepen as they approach the irreducible water saturation point. The five sets of capillary curves are plotted in Figure 3-4.

Figure 3-4: Capillary Pressure Functions



3.3.5 Fluid Pressure

The average formation fluid pressure gradient was derived from [redacted] formation pressure data points acquired from the stratigraphic well. The pressure gradient value is Claimed as PBI Claimed as PBI represented in Figure 3-5. This original reservoir pressure gradient was based data points collected from Claimed as PBI and was considered representative of sand intervals to be used for injection. The measured site-specific values are consistent with expected values obtained from available literature, which reported an average value of approximately 0.45 psi/ft (Kreitler, 1988).

Figure 3-5: Stratigraphic Well (Bead Farm Co. #1) Pressure Gradient



3.3.6 Temperature

Based on data collected from the stratigraphic well, the temperature gradient is Claimed as PBI Claimed as PBI Mean surface temperature was assigned as 68 °F, yielding an original temperature of Claimed as PBI in the reservoir model at a reference depth of Claimed as PBI Claimed as PBI he original temperature was assigned to be consistent with this temperature and the temperature gradient throughout the model domain. The temperature gradient is represented in Figure 3-6.

Figure 3-6: Stratigraphic Well (Bead Farm Co. #1) Temperature Gradient



3.3.7 Formation Compressibility

Total formation compressibility includes rock compressibility (Section 3.3.2) and fluid compressibility (Section 3.4.3). Both are accounted for during simulation of CO2 injection.

3.3.8 Initial Saturation

A review of the available literature (Kreitler, 1988) indicates the target Fleming and Frio injection intervals in this area of the Gulf Coast are expected to be saline aquifers of 100% water saturation. Claimed as PBI

3.4 Derivation of Input Parameter Values for Fluid Properties

3.4.1 Fluid Composition

Fluid samples were collected from the stratigraphic well and analyzed for fluid composition. The results of laboratory analyses for total salinity are summarized in Table 3-2. The simulation model utilized average salinity of Claimed as PBI at reference depth of Claimed as PBI Claimed as PBI and salinity of Claimed as PBI at reference depth of Claimed as PBI. A detailed fluid analysis is presented in Section 2.9 of Section 2 – Site Characterization.

Table 3-2: Bead Farm No.1 Fluid Sampling Results

Formation	Depth (ft)	Salinity (ppm)
Claimed as PBI		

Claimed as PBI

3.4.2 Fluid Density and Viscosity

Brine and CO2 properties (including density, viscosity, and compressibility) are functions of pressure, temperature, and salinity. Industry standard methods can be employed to determine the pure phase properties and their interaction.

For this study, a specific CO2 sequestration compositional modeling method was used that was developed by Schlumberger for the Eclipse™ numerical reservoir simulator (version 2020.4). This specific model, called CO2STORE, can accurately evaluate fluid density and viscosity based on following method in Eclipse™:

- The gas density is obtained by an accurately tuned cubic equation of state;
- The brine density is first approximated by the pure water density and then corrected for salt and CO2 effects by Ezrokhi's method (Zakirov et al., 1996); and
- The CO2 gas viscosity is calculated using methods provided by Vesovic et al. (1990) and Fenghour et al. (1998).

The dissolution of CO2 into brine and vice versa resulted in saturated CO2 and brine solutions that have slightly altered density and viscosity. A sample table for pure phase and saturated phase CO2 and brine viscosity and density are illustrated below in Table 3-3. The site-specific data were used along with the correlations and functions available in the Eclipse™ model to generate values of density and viscosity at original conditions and the projected conditions that are predicted to be generated in-situ during the course of the simulations.

Table 3-3: Pure Phase and Saturated Phase CO2 and Brine Viscosity and Density

Depth (ft)	Pressure (psi)	Temperature (°F)	Pure Phase Properties				Saturated Phase Properties			
			CO2		Brine		CO2		Brine	
			density (g/cm3)	viscosity (cp)	density (g/cm3)	viscosity (cp)	density (g/cm3)	viscosity (cp)	density (g/cm3)	viscosity (cp)
3,400	1,530	126.7	0.428	0.033	1.040	0.604	0.438	0.034	1.046	0.601
4,000	1,800	136.4	0.498	0.038	1.038	0.558	0.506	0.039	1.044	0.555
5,000	2,250	152.5	0.547	0.043	1.035	0.493	0.555	0.044	1.041	0.491
6,000	2,700	168.6	0.574	0.045	1.031	0.441	0.581	0.046	1.037	0.439
7,000	3,150	184.7	0.591	0.047	1.027	0.399	0.598	0.048	1.033	0.397
8,000	3,600	200.8	0.604	0.049	1.023	0.364	0.611	0.050	1.028	0.362
cp = centipoise; g/cm^3 = grams per cubic centimeter										

Figures 3-7(a) and 3-7(b) illustrate density variation for CO2 and brine vs. depth. CO2 and brine density vary with pressure, temperature and to a lesser extent saturation of the opposite phase (CO2 in brine or brine in CO2). CO2 density increases with pressure at deeper intervals; this density increase is partially offset by higher temperature, but the dominant control on CO2 density in this depth range is pressure. Saturation of CO2 with brine slightly increases CO2 density at all depths as shown in Figure 3-7(a). Brine density exhibits the opposite trend. At deeper intervals, brine becomes less dense with higher temperature, which is partially offset by pressure increase. Similarly, brine density increases slightly when saturated with CO2, as compared to pure phase brine. Figures 3-7(a) and (b) are illustrative; CO2 and brine density are calculated in the simulation based on local conditions (temperature, pressure, and saturation) using built-in correlations in Eclipse.

Figure 3-7(a): Pure Phase and Saturated Phase CO2 Density vs Depth

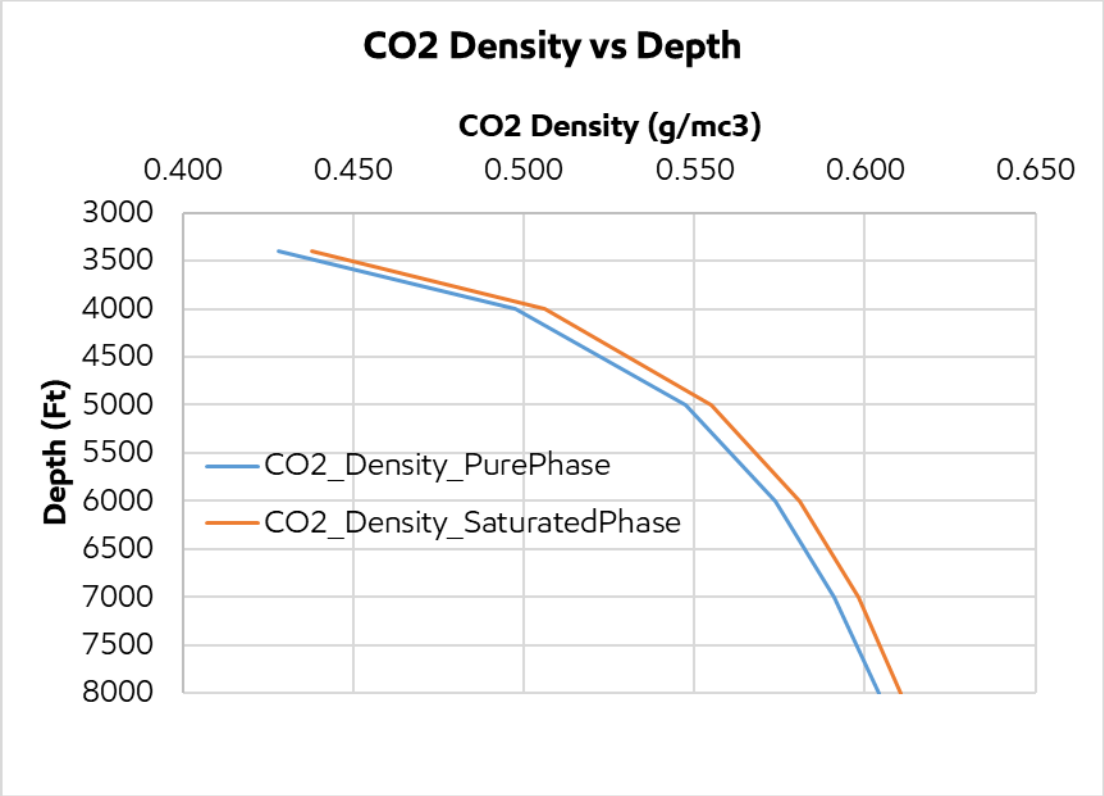
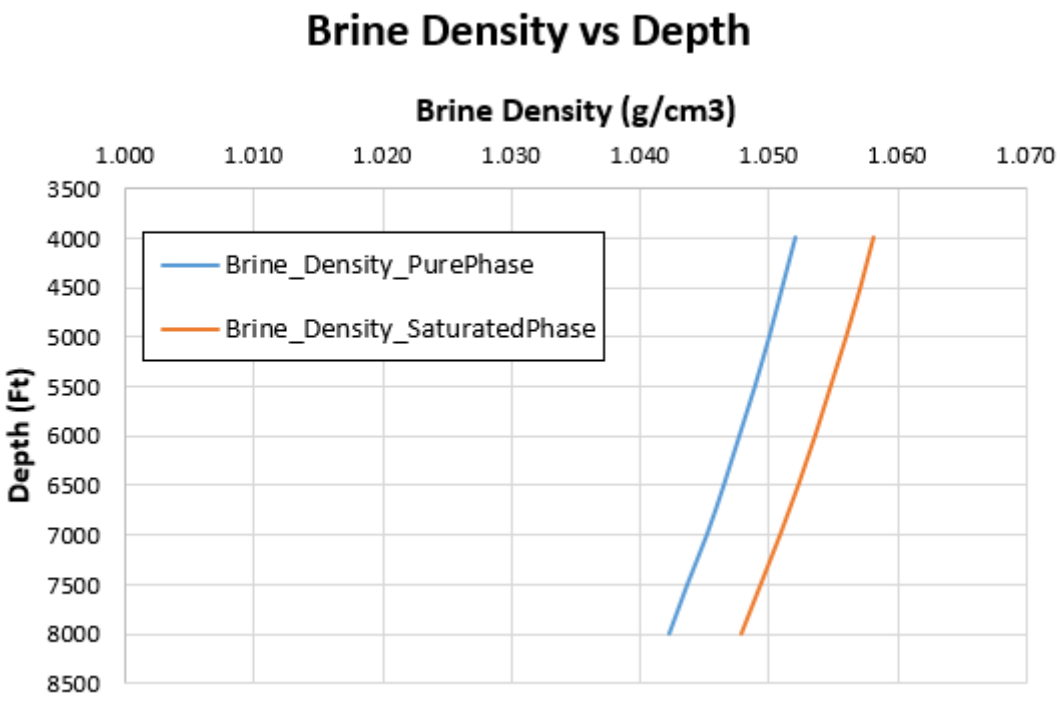


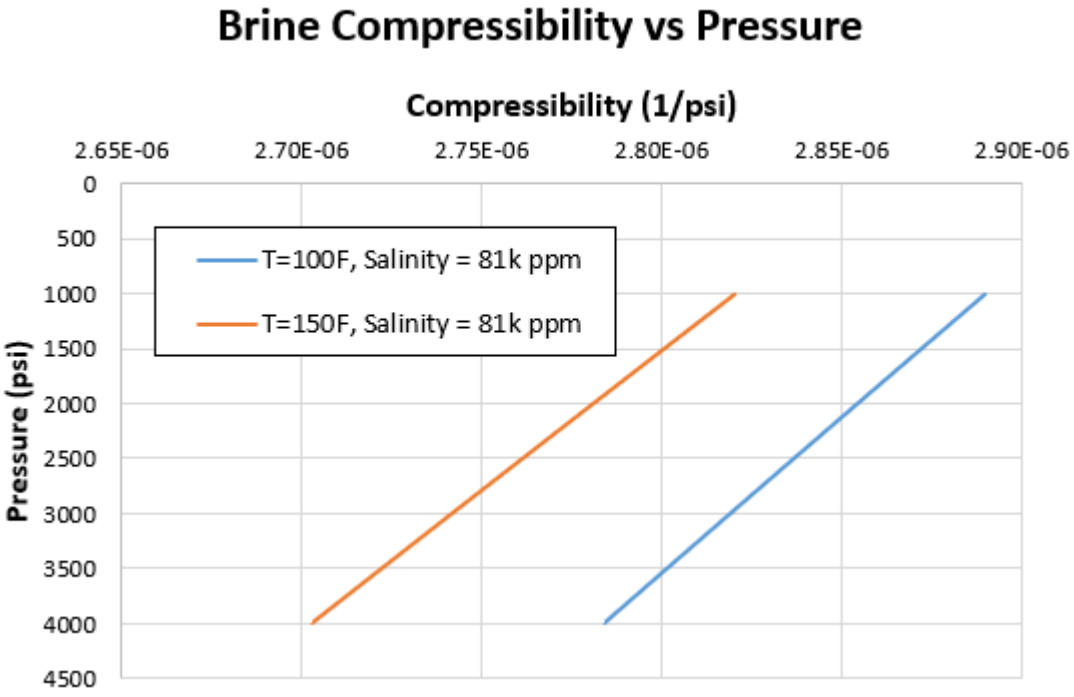
Figure 3-7(b): Pure Phase and Saturated Phase Brine Density vs Depth for Salinity = 81,000 ppm Case



3.4.3 Fluid Compressibility

Brine is often considered as an incompressible fluid but has a small compressibility in the range of 2.5 to 3.5 µsips depending on pressure and temperature. Brine compressibility is handled by the simulator based on original conditions extrapolated from the stratigraphic well measurements and predicted conditions that develop during simulation runs. The range of pressure and compressibility is illustrated on Figure 3-8. While the injected CO2 for this Project will remain in dense phase from wellhead to the reservoir, its density can vary with pressure and temperature. Compressibility of CO2 is typically higher compared to formation and brine, as illustrated in an earlier study that showed a range of 50 to 80 µsips (Law and Bachu, 1996). In this simulation study, CO2 compressibility is automatically handled by the simulator based on an equation-of-state calculation.

Figure 3-8: Brine compressibility at Different Pressure and Temperature



3.5 Derivation of Input Parameter Values for Chemical Properties

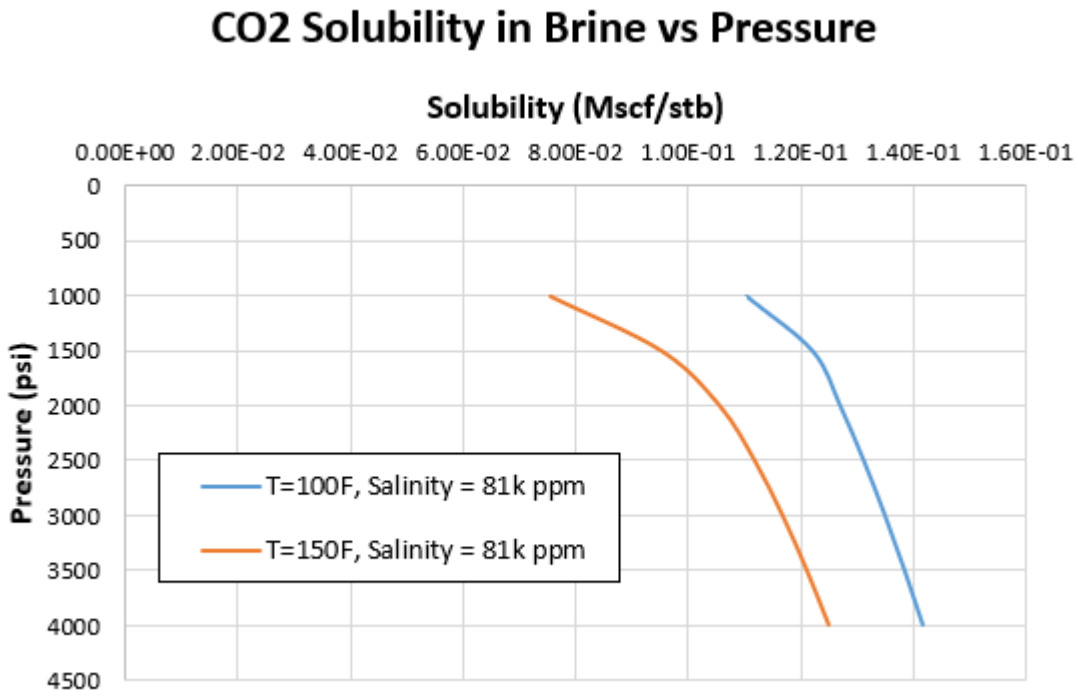
3.5.1 Aqueous Solubility

CO2 can dissolve in water and dissolved CO2 is considered permanently sequestrated in the saline aquifer. Therefore, dissolution is an important sequestration mechanism.

The compositional model leverages the CO2STORE option in the Eclipse™ simulator, which models mutual solubilities of CO2 and water based on matching experimental data for typical CO2 storage conditions: typically, 54 to 480 °F and up to 8,700 psi, which includes the pressure and temperature range for the AoR. The mutual solubilities are calculated following the procedure given by Spycher and Pruess (2009), based on fugacity equilibration between water and a CO2 phase. Water fugacity is obtained by Henry's law, while CO2 fugacity is calculated using a modified Redlich-Kwong equation of state.

A sample-calculated CO2 solubility is presented on Figure 3-9. The CO2 solubility is dependent on temperature, pressure, and salinity. As shown, CO2 has a range of solubility between 0.05 to 0.15 thousand standard cubic feet per stock tank barrel.

Figure 3-9: CO2 Solubility in Brine at Different Temperature



3.5.2 Solubility in Carbon Dioxide

The solubility of brine in CO2 at reservoir conditions is limited, which is explained in Section 3.4.2. This behavior is captured by the CO2STORE option and is incorporated into simulation forecasts. However, it has negligible impact on storage potential.

3.6 Model Design and Input Parameters

The model design is based on the use of computer simulation tools with a proven record of modeling multiphase flow. The input parameter values include a combination of uniform values throughout the domain and values that vary in space and time. The derivation of input parameter values for the hydrogeologic system were based on several data sources and relationships that were outlined above.

In addition to the set of model parameters described below, parameter sensitivity analyses were performed during the pre-operational phase and their impacts were assessed. The most impactful uncertainty parameters for CO2 plume include reservoir permeability architecture and reservoir temperature. The most impactful parameters for pressure AoR include reservoir permeability architecture, aquifer strength, vertical to horizontal permeability (k_v/k_h) ratio, fault transmissibility, and rock compressibility. Other parameters assessed include relative permeability function parameters (e.g., Corey coefficients, trapped gas saturation, capillary entry pressure) and skin, which show less impact. The following parameters were calibrated during the Rose project appraisal program: reservoir temperature, rock permeability, compressibility, and relative permeability parameters. Based on these analyses and data acquisition, the

following basis represents a best estimate for expected performance. Monitoring data collected during the life of the project will be used to calibrate the model and improve forward predictions.

3.6.1 Model Background

Schlumberger's Petrel™ Software was chosen to create a detailed geologic model for the Project. This software is used worldwide and combines information from logs and seismic data to build a sophisticated representation of the underground reservoir. The Petrel™-developed geologic model incorporates the geologic layers of the site described in the Section 2 – Site Characterization, including three targeted injection zones within the Fleming Formation (referred to as Fleming Sand 1, Fleming Sand 2, and Fleming Sand 3) and one targeted injection interval within the Frio Formation (referred to as the Upper Frio, which is a combination of Frio Sand 1 and Frio Sand 2). Using Petrel™, the properties of the injection intervals were modeled in three dimensions, a detailed description of which is given in Section 2.

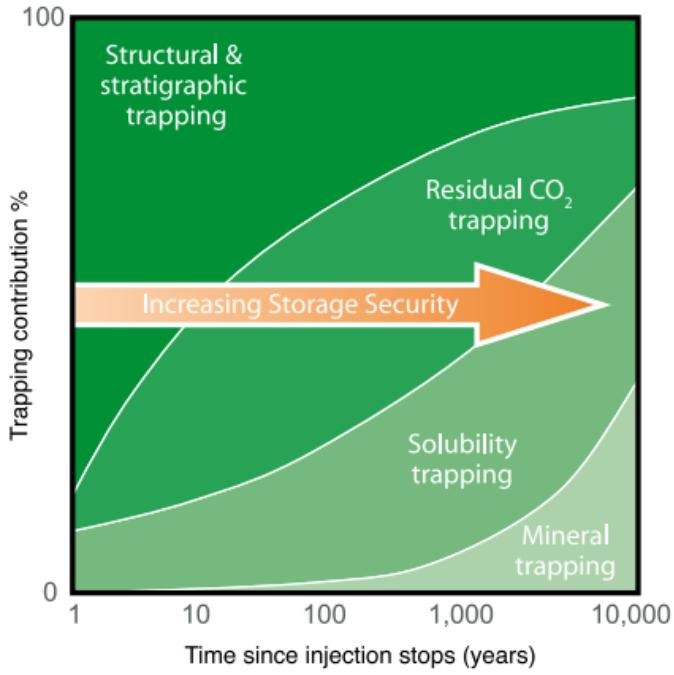
The geologic model developed in Petrel™ was used as an input into the Schlumberger Eclipse™ numerical reservoir simulator. Eclipse™ is a widely recognized tool used for modeling both compositional and unconventional reservoirs. The simulator uses advanced computational methods and equation-of-state algorithms to evaluate compositional, chemical, and geochemical processes to produce a reliable simulation for CCS. The software has modules and options specifically intended to allow the study of CCS injection activities, can handle large data sets and multiple grids, and offers various tools for data management, visualization, and uncertainty analysis.

In a CO2 storage project, four primary trapping mechanisms sequester the supercritical CO_2, schematically represented in Figure 3-10(a):

1. Structural and stratigraphic trapping
2. Residual trapping
3. Solubility trapping
4. Mineral trapping

The mineral trapping mechanism is not explicitly included in the current CCS modeling process. The results of reaction-path geochemical modeling described in Section 2.9 – Assessment of Injection Interval and Confining Zone Geochemical Reactions support that the influence of mineral precipitation/dissolution and geochemical reactions on reservoir parameters such as porosity and permeability are predicted to be negligible over the lifetime of the project. Based on these modeling results, it was not deemed necessary to conduct reactive transport modeling that considers both hydrodynamic flow and geochemical reactions. Instead, the only chemical parameters considered in the AoR model are the solubility of CO2 in the brine and the total dissolved solids of the brine, as both parameters have a larger influence on delineating the extent of the CO2 and pressure plumes. Adding geochemical reactions to the model is not expected to influence the results of the model.

Figure 3-10(a): CO_2 Storage Mechanisms



Source: Metz et al., 2005

Figure 3-10(b) shows the breakdown of the trapping mechanisms for this project. Once injection stops (Year 13), the mobile CO2 quickly decreases as CO2 migrates through pore space and is trapped. Over the life of the Rose Project, residual trapping is the most dominant trapping mechanism. Approximately 59% of the injected fluid is safely sequestered by residual trapping within the pore space. The solubility of CO2 into the connate brine will safely store approximately 35% of the CO2. The remaining 6% of the injectate will be structurally and hydrodynamically trapped.

Figure 3-10(b): Modeled Trapping Mechanisms



3.6.2 System Orientation and Simulation Controls for Model

Claimed as PBI

Figure 3-11 presents the orientation and approximate dimensions of the geologic model domain, which is greater than the simulation model grid. The domain extends significantly beyond the predicted plume boundaries to reduce the potential for the model domain boundaries to significantly influence the CO2 plume extent or pressure front migration. This grid was used consistently for the prediction of the AoR. Local grid refinement around wellbore region is also tested, which leads to substantially similar CO2 plume area and critical pressure AoR within 2 to 3% of difference.

A geologic model was used as an input to help build the dynamic plume and pressure prediction model. The initial input parameter values in Table 3-4 were used to initialize the model. The estimated average total porosity and horizontal permeability of the net reservoirs within the Fleming and Frio injection intervals are presented in Table 2-21. Claimed as PBI ertical permeability is typically lower than horizontal permeability due to the alignment of grains and bedding planes formed at time of deposition. The amount by which vertical permeability is lower can vary by stratigraphic setting and environment of deposition. For high-quality sand intervals, vertical permeability can sometimes approach the same magnitude of horizontal permeability; for lower quality sand intervals with an increased amount of silt and shale facies in the rock, the vertical permeability can be significantly lower than

horizontal permeability. In the simulation model, vertical to horizontal permeability ratio k_v/k_h is assigned based on sand quality using three permeability bins, defined in Table 3-4. The k_v/k_h ratio was assigned based on concept models of the environment of deposition supported by core analyses. High quality sand cells with Claimed as PBI generally occur in fluvial channels or delta lobes represented by blocky coarse sand (channel axis, proximal delta); cells with K_h in the range of Claimed as PBI contain sand with thin interbedded silt and shale (crevasse splay, medial delta); cells with K_h in the range of Claimed as PBI contain interbedded sand with higher content of silt and shale facies (flood plain, distal delta).

The initial pore pressure and fracture pressure gradients were calculated to be Claimed as PBI and Claimed as PBI respectively. The estimated temperature gradient is Claimed as PBI, which was calculated from measurements made at the stratigraphic well. Salinity was estimated to range from Claimed as PBI based on measurements from the stratigraphic well.

Figure 3-11: Extent of Simulation Boundary, AoR, and Geologic Features in the Model Domain

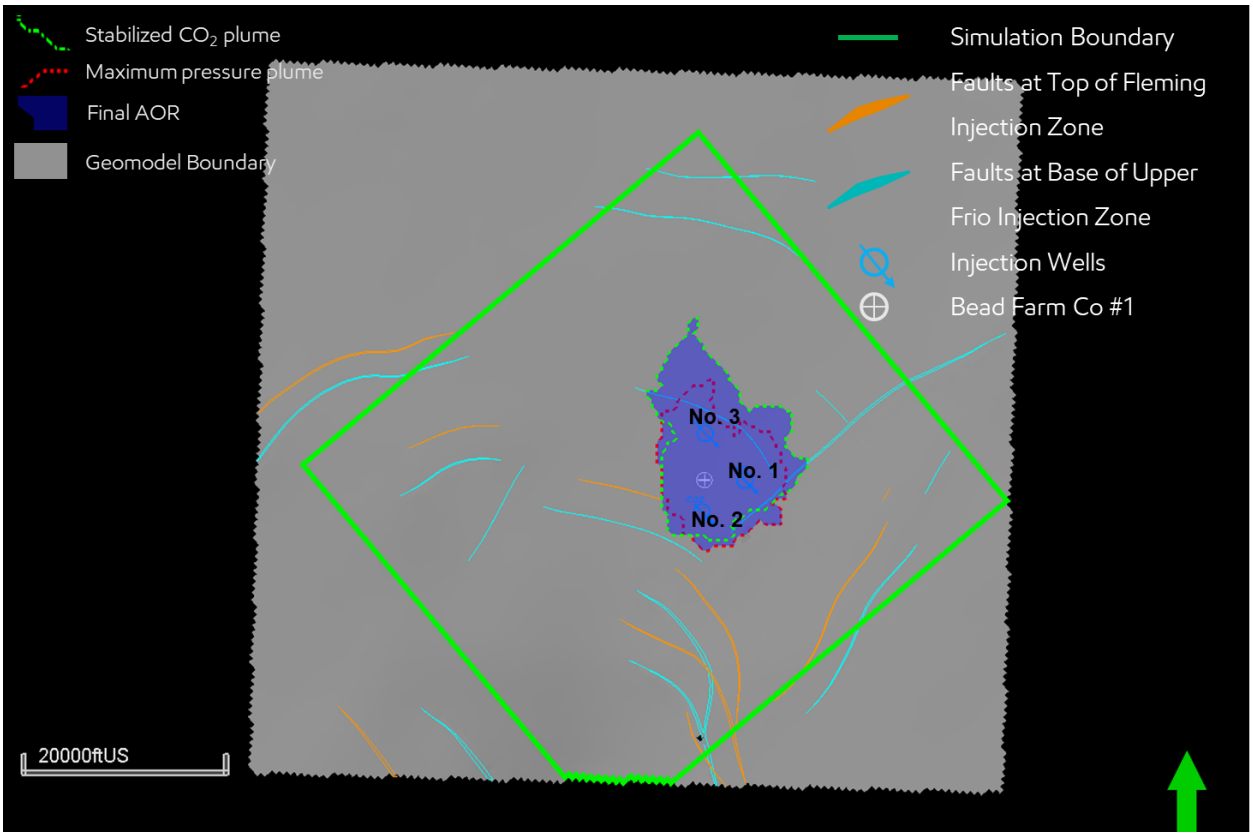


Table 3-4: Summary of Input Parameter Values for Model

Input Parameters	Value
Claimed as PBI	

Input Parameters	Value
[redacted]	Claimed as PBI [redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
Claimed as PBI [redacted]	[redacted]

3.6.3 Fluid Injection Rates

The injection wells were simulated using the wellbore design schematics and target rate schedule along with the input parameters provided in Table 3-5. The model utilized seven injection stages. Results of the core sample testing from the stratigraphic wells informed the levels of horizontal and vertical permeability. Fluid injection rates are described in Table 3-5 and the total storage volume was estimated at 46 to 53 million metric tonnes.

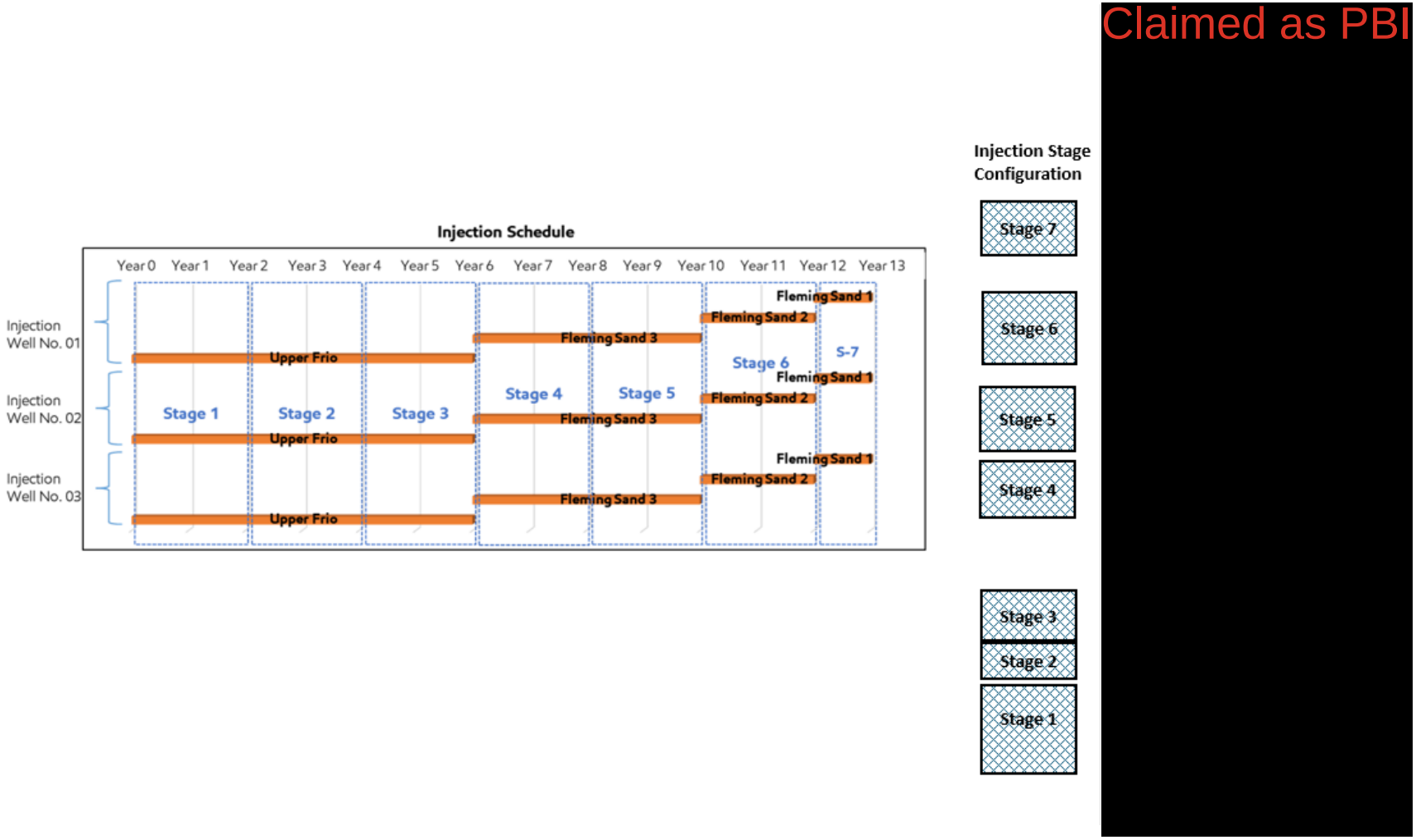
Three primary constraints were imposed to limit plume movement: (1) the maximum injection rate is 1.67 MMta; (2) a maximum bottomhole pressure (BHP) gradient of Claimed as PBI Claimed as PBI and (3) an injection period of 13 years for all three injection wells. A skin factor of 10 was applied to the wellbore to simulate potential formation damage that may occur over time. This assumption was considered when calculating the wellhead pressure. Injection Wells No. 1, 2, and 3 were simulated at a maximum injection rate of 1.67 MMta. Pressure was not a limiting factor defining the model AoR boundary projections.

Table 3-5: Summary of Input Parameter Values for Injection Wells

Input Parameter Value	Rose CCS Project Injection Wells		
	No. 1	No. 2	No. 3
Max Injection Rate (MMta)	1.67	1.67	1.67
Claimed as PBI [redacted]	[redacted]	[redacted]	[redacted]
Injection Duration (years)	13	13	13
Roughness Factor	0.0021	0.0021	0.0021
Compressor Outlet Temperature (°F)	80	80	80

The injection wells are divided into multiple completion intervals to optimize the usage of available pore space. Each completion stage represents a portion of the reservoir that will be injected into at a given time. Figure 3-12 shows the planned completion strategy for each injection well.

Figure 3-12: Summary of Injection Intervals and Durations for Each Injection Well



A total of seven injection stages within the four formation intervals are planned for each well. Perforation depths and injection durations are summarized in Tables 3-6 through 3-8. The perforation depths are based on the current geologic model and will be adjusted based on injection well results.

Table 3-6: Summary of Completion Stages and Intervals for Rose CCS Project Injection Well No. 1

Stage	Interval	Estimated Completion Date (years post startup)	Top Depth TVDSS (ft)	Bottom Depth TVDSS (ft)	Gross Thickness (ft)	Net Reservoir (ft)	Duration (years)
1	Upper Frio Sand	0.00	7,382	8,025	643	353	2.00
2	Upper Frio Sand	2.00	7,163	7,348	185	185	2.00
3	Upper Frio Sand	4.00	6,938	7,122	185	164	2.00
4	Fleming Sand 3	6.00	5,561	5,922	361	120	2.00
5	Fleming Sand 3	8.00	5,131	5,492	361	223	2.00
6	Fleming Sand 2	10.00	4,187	4,766	579	186	2.00
7	Fleming Sand 1	12.00	3,472	3,932	460	293	1.00
TVDSS = true vertical depth subsea							

Table 3-7: Summary of Completion Stages and Intervals for Rose CCS Project Injection Well No. 2

Stage	Interval	Completion Date (years post startup)	Top Depth TVDSS (ft)	Bottom Depth TVDSS (ft)	Gross Thickness (ft)	Net Reservoir (ft)	Duration (years)
1	Upper Frio Sand	0.00	7,481	8,101	620	327	2.00
2	Upper Frio Sand	2.00	7,163	7,435	272	251	2.00
3	Upper Frio Sand	4.00	6,933	7,142	210	125	2.00
4	Fleming Sand 3	6.00	5,670	6,094	424	289	2.00
5	Fleming Sand 3	8.00	5,030	5,503	473	165	2.00
6	Fleming Sand 2	10.00	4,337	4,916	578	255	2.00
7	Fleming Sand 1	12.00	3,481	4,014	532	335	1.00
TVDSS = true vertical depth subsea							

Table 3-8: Summary of Completion Stages and Intervals for Rose Injection Well No. 3

Stage	Interval	Completion Date (years post startup)	Top Depth TVDSS (ft)	Bottom Depth TVDSS (ft)	Gross Thickness (ft)	Net Reservoir (ft)	Duration (years)
1	Upper Frio Sand	0.00	7,272	7,926	654	382	2.00
2	Upper Frio Sand	2.00	7,011	7,265	254	212	2.00
3	Upper Frio Sand	4.00	6,778	6,985	207	143	2.00
4	Fleming Sand 3	6.00	5,509	5,896	387	185	2.00
5	Fleming Sand 3	8.00	5,055	5,458	404	219	2.00
6	Fleming Sand 2	10.00	4,146	4,665	518	163	2.00

Stage	Interval	Completion Date (years post startup)	Top Depth TVDSS (ft)	Bottom Depth TVDSS (ft)	Gross Thickness (ft)	Net Reservoir (ft)	Duration (years)
7	Fleming Sand 1	12.00	3,382	3,893	511	229	1.00
TVDSS = true vertical depth subsea							

At each new completion, the modeled pressure constraint was updated in the model based on the upper perforation depth. Target injection rates were updated accordingly to meet the limitation that the BHP remained below the calculated fracture gradient. Tables 3-9 through 3-11 summarize injection rate and pressure parameters corresponding to all completions in each well.

Table 3-9: Modeled Injection Rates and Pressures for Rose CCS Project Injection Well No. 01

Stage	Year	Max. Rate (MMta)	Avg. Rate (MMta)	Max. BHP (psi)	Avg. BHP (psi)
1	0	1.67	1.67	3,720	3,600
2	2	1.67	1.67	3,543	3,462
3	4	1.67	1.67	3,544	3,465
4	6	1.43	1.43	2,825	2,667
5	8	1.43	1.43	2,627	2,563
6	10	1.26	1.26	2,140	2,100
7	12	1.1	1.1	1,777	1,731

Table 3-10: Modeled Injection Rates and Pressures for Rose CCS Project Injection Well No. 02

Stage	Year	Max. Rate (MMta)	Avg. Rate (MMta)	Max. BHP (psi)	Avg. BHP (psi)
1	0	1.67	1.67	3,828	3,666
2	2	1.67	1.67	3,588	3,460
3	4	1.67	1.67	3,482	3,439
4	6	0.94	0.94	2,705	2,648
5	8	0.94	0.94	2,623	2,553
6	10	1.26	1.26	2,152	2,111
7	12	1.32	1.32	1,868	1,791

Table 3-11: Modeled Injection Rates and Pressures for Rose CCS Project Injection Well No. 03

Stage	Year	Max. Rate (MMta)	Avg. Rate (MMta)	Max. BHP (psi)	Avg. BHP (psi)
1	0	1.67	1.67	3,796	3,602
2	2	1.67	1.67	3,518	3,419
3	4	1.67	1.67	3,473	3,408
4	6	0.94	0.94	2,617	2,581
5	8	0.94	0.94	2,568	2,518
6	10	0.73	0.73	2,165	2,102
7	12	0.88	0.88	1,811	1,725

Continuous injection rates, injection pressures, and associated pressure constraints for each well are illustrated on Figures 3-13 through 3-15.

Figure 3-13: Injection Rates and Pressures – Rose CCS Project Injection Well No. 01

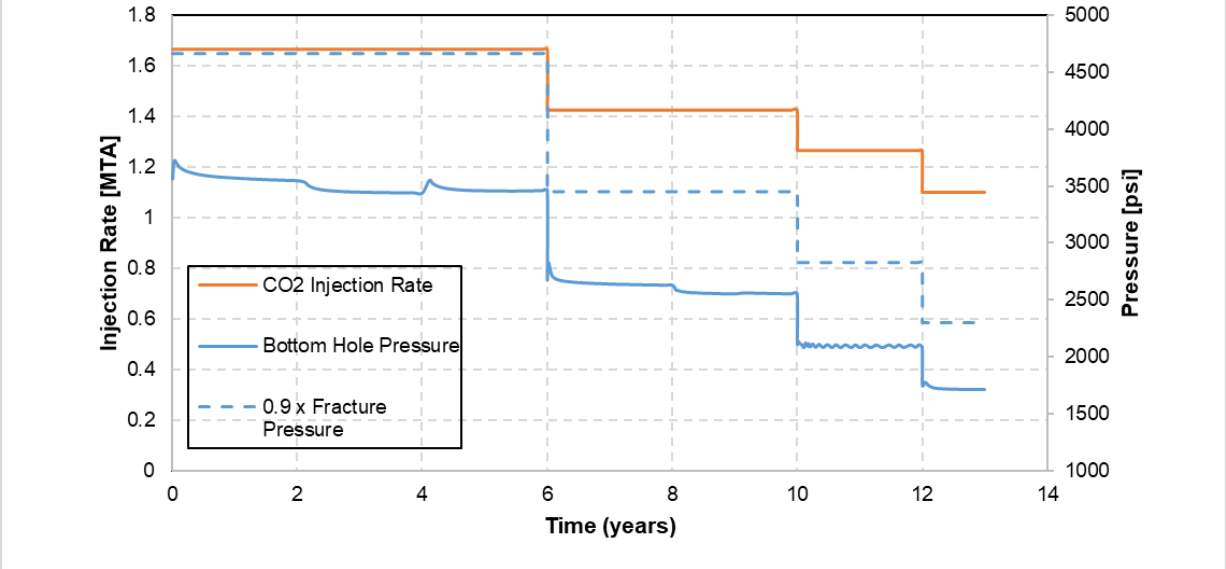


Figure 3-14: Injection Rates and Pressures – Rose CCS Project Injection Well No. 02

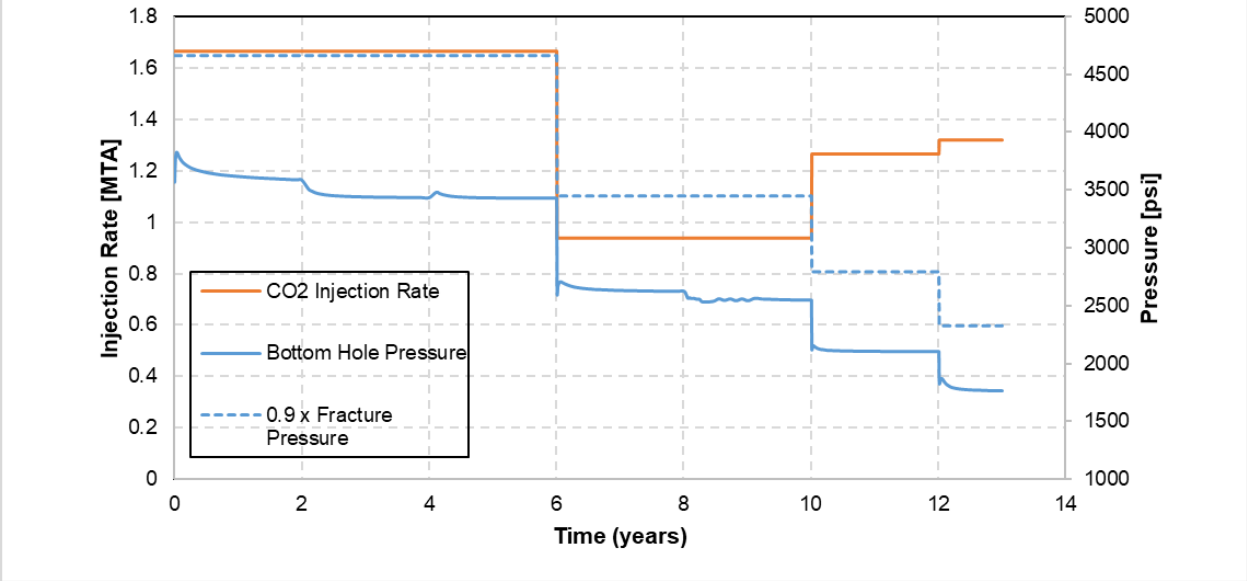
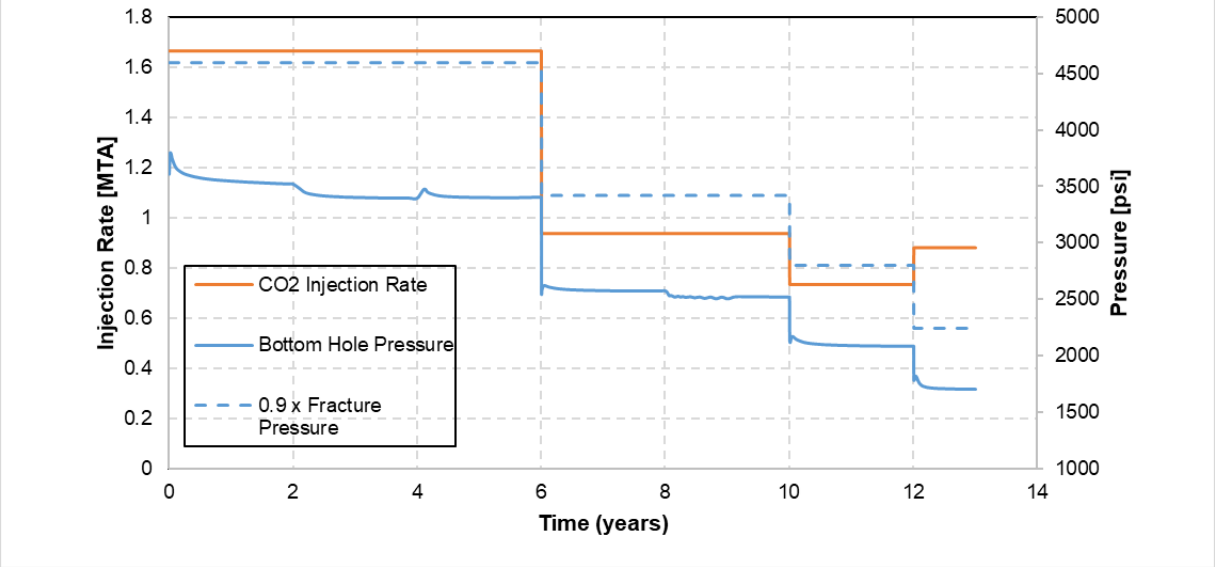


Figure 3-15: Injection Rates and Pressures – Rose CCS Project Injection Well No. 03



3.6.4 Fracture Pressure and Fracture Gradient

As discussed in Section 2.6 of Section 2 – Site Characterization, a log-based approach was utilized to evaluate undisturbed stress state at the field. The approach incorporated density and dipole sonic logs collected at Bead Farm Co. #1 well and was calibrated with formation integrity data from nearby offset wells. The fracture gradients shown in Table 3-12 have been calculated for the proposed injection zones based on site-specific data.

Table 3-12: Calculated Fracture Gradients for the Proposed Injection Zones

Claimed as PBI	[redacted]
[redacted]	

Using the estimated formation tops presented in Table 2-4 in Section 2 – Site Characterization, the estimated maximum bottomhole injection pressures for the top of the Fleming Sand 1 Injection Interval and the top of the Frio Sand 1 Injection Interval are shown in Table 3-13. The safety factor applied is 90% of estimated fracture pressure. Note that these values may be revised based on site data to be collected from injection wells and well completion strategy.

Table 3-13: Maximum Modeled Bottomhole Injection Pressures

Stage	Injection Interval	Parameter	Injection Well No. 01	Injection Well No. 02	Injection Well No. 03
1	Upper Frio Sand (1)	Top Depth (BGL)	7,440	7,520	7,331
		Claimed as PBI	[redacted]	[redacted]	[redacted]
		Maximum Allowed BHP (psi)	4,620	4,670	4,553
		Maximum Modeled BHP (psi)	3,720	3,828	3,796
2	Upper Frio Sand (2)	Top Depth (BGL)	7,186	7,186	7,034
		Claimed as PBI	[redacted]	[redacted]	[redacted]
		Maximum Allowed BHP (psi)	4,463	4,463	4,368
		Maximum Modeled BHP (psi)	3,543	3,588	3,518
3	Upper Frio Sand (3)	Top Depth (BGL)	6,961	6,956	6,801
		Claimed as PBI	[redacted]	[redacted]	[redacted]
		Maximum Allowed BHP (psi)	4,322	4,320	4,223
		Maximum Modeled BHP (psi)	3,544	3,482	3,473
4	Fleming Sand 3 (1)	Top Depth (BGL)	5,584	5,693	5,532
		Claimed as PBI	[redacted]	[redacted]	[redacted]
		Maximum Allowed BHP (psi)	3,417	3,484	3,386
		Maximum Modeled BHP (psi)	2,825	2,705	2,617
5	Fleming Sand 3 (2)	Top Depth (BGL)	5,154	5,053	5,078
		Claimed as PBI	[redacted]	[redacted]	[redacted]
		Maximum Allowed BHP (psi)	3,154	3,092	3,108
		Maximum Modeled BHP (psi)	2,627	2,623	2,568
6	Fleming Sand 2	Top Depth (BGL)	4,210	4,360	4,169
		Claimed as PBI	[redacted]	[redacted]	[redacted]
		Maximum Allowed BHP (psi)	2,577	2,668	2,551

Stage	Injection Interval	Parameter	Injection Well No. 01	Injection Well No. 02	Injection Well No. 03
		Maximum Modeled BHP (psi)	2,140	2,152	2,165
7	Fleming Sand 1	Top Depth (BGL)	3,495	3,504	3,405
		Claimed as PBI	[redacted]	[redacted]	[redacted]
		Maximum Allowed BHP (psi)	2,107	2,113	2,053
		Maximum Modeled BHP (psi)	1,777	1,868	1,811

3.6.5 Boundary Conditions

ExxonMobil selected the boundary condition for the model domain that describes the fluid flow rates and/or pressures at the edges of the model domain and at the location of injection wells. The Fleming and Frio injection intervals are characterized as highly connected throughout the region. Thus, an infinite-acting reservoir boundary condition was selected for the four edges of the rectangular model domain to simulate the pressure response from CO2 injection. In the model, “volume modifiers” were used along the edges of the model domain to change the gross volume of a grid cell by adding a “multiplier” to the original volume. Claimed as PBI [redacted]

The “volume modifiers” provide additional pore space for pressure dissipation at the boundary, which reduces the pressure build-up at the edge of the model domain. This effectively simulates the Fleming and Frio injection interval characteristics as being highly connected throughout the region. Care was taken to extend the model boundaries sufficiently far from the injection wells so that the estimates of CO2 plume and pressure front migration were not influenced by the boundary. Additionally, the upper and lower confining zones were assigned as impermeable layers, based on the site characterization. Any nearby faults were assumed to be transmissive only where sand-to-sand contact was predicted in the Petrel™ output. The approach reduced the potential for the model to predict no CO2 migration, when a potential for migration was apparent at a fault location.

3.7 AoR Delineation Based on Model Results

3.7.1 Extent of CO2 Plume

The areal grid block size in the model was selected to optimize model runtimes, limit grid distortion effects, and allow for sufficiently accurate contouring of plume extent over a distance of multiple miles. The operational and geologic input parameters were used in the Eclipse™ model to generate projections of plume and pressure migration versus time. Each well was initially completed and then recompleted into incrementally shallower portions of the injection intervals per the schedule presented on Figure 3-12.

Claimed as PBI [redacted]

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Claimed as PBI

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Figure 3-17: Modeled Areal Plume Size, Growth Rate, and Stabilization



3.7.2 Delineation of the Critical-Pressure Front

In accordance with 40 CFR 146.84, the AoR was delineated by the critical-pressure front created by the injection of CO2 into the injection intervals. Critical pressure is the increase in reservoir pressure that has a potential to create crossflow of brine from the injection zone into the lowermost USDW, assuming the presence of a hypothetical bridging conduit such as an unplugged borehole. The first step to predict the pressure front of interest is to calculate the critical pressure for each completion stage. Once critical pressure is estimated, a numerical simulation is used to predict the size and shape of the critical-pressure front defined by this pressure contour.

3.7.2.1 Critical-Pressure Calculations

The methodology for defining the critical pressure was sourced from Nicot (Nicot, 2009), which is referenced in the EPA guidance for calculations based on displacing fluid initially present in a borehole. Nicot assumed that the injection reservoir is in hydrostatic equilibrium, neither under- nor over-pressured, and that a direct path between the injection zone and lowermost USDW exists. An example hypothetical vertical pathway includes an insufficiently plugged and abandoned wellbore.

Claimed as PBI



he critical pressure was calculated for each completion phase of each injection well, with the top of the effective injection

interval perforations ranging from depths of 3,382 ft to 7,497 ft TVDSS. Based on the site-specific fluid samples from the stratigraphic well, the total dissolved solids (TDS) of the brine was observed to range from Claimed as PBI Applying the minimum measured salinity Claimed as PBI results in a Claimed as PBI psi/ft reservoir pressure gradient if the reservoir was originally in hydrostatic equilibrium with a column of this brine from the depth of the reservoir to surface. The fluid within the USDW was assumed to be fresh water with a fluid pressure gradient of Claimed as PBI. Inputs for an example critical pressure calculation (Rose CCS Project Injection Well No. 01; Fleming Sand 1) are provided in Table 3-14.

Table 3-14: Input Parameter Values for Critical-Pressure Calculation at Rose CCS Project Injection Well No. 01, Fleming Sand 1

Input Parameter	Symbol	Value
Claimed as PBI		

The coefficient (λ) is first calculated in Equation 5 using the final, post-equilibrium pressure gradients and depths for the base of the USDW and top of injection zone:

(Eq. 5) $$\lambda = \frac{G_{if} - G_{uf}}{D_i - D_u}$$

Claimed as PBI

The coefficient (ξ) is then calculated in Equation 6 using the initial gradients and depths for the base of the USDW and top of injection zone:

(Eq. 6) $$\xi = \frac{G_{ii} - G_{ui}}{D_i - D_u}$$

Claimed as PBI

Finally, critical-pressure rise (ΔP_c) is calculated using Equation 7. The inputs include the coefficients (λ, ξ) calculated in Equations 5 and 6 and the depths for the base of USDW (D_u) and top of injection interval (D_i):

(Eq. 7) $$\Delta P_c = (D_i - D_u)\left[\frac{\lambda - \xi}{2}(D_i - D_u) + G_{uf} - G_{ui}\right]$$

Claimed as PBI

Claimed as PBI

The resulting critical-pressure rise for the uppermost stage of Rose CCS Project Injection Well No. 01 is positive, indicating that the reservoir pressure may be safely increased by approximately 41.2 psi, without risk of endangerment to the lowermost USDW. The calculated critical-pressure rise for each completion stage of each injection well is included in Table 3-15.

Table 3-15: Calculated Critical-Pressure Rise for Rose CCS Project Injection Intervals

Injection Stage	Interval	Salinity	Critical-Pressure Rise (psi)		
			Injection Well No. 01	Injection Well No. 02	Injection Well No. 03
1	Upper Frio Sand	Claimed as PBI	161.48	163.61	158.58
2	Upper Frio Sand		154.71	154.71	150.67
3	Upper Frio Sand		148.72	148.59	144.46
4	Fleming Sand 3		119.83	122.94	118.35
5	Fleming Sand 3		107.55	104.66	105.38
6	Fleming Sand 2		69.17	72.86	68.15
7	Fleming Sand 1		41.2	41.38	39.42

3.7.2.2 AoR Delineation

The maximum areal extents of both the CO2 plume and the critical-pressure front were used to delineate the AoR at any time interval or depth. The larger extent of either CO2 saturation or critical-pressure rise was used to define the AoR boundary. Figure 3-16 presents the maximum extent of the stabilized CO2 plume, approximately 26 years into the post-injection site care phase of the Project Claimed as PBI The critical-pressure front, illustrated in Figure 3-18, represents the maximum areal cone of influence and combines results from the seven completion intervals for each of the three injection wells. Figures 3-18 (a)-(d) represent critical pressure fronts assessed at years 1, 5, 10, and 13, respectively. Superimposing the maximum CO2 plume and critical-pressure boundaries, Figure 3-19 provides the AoR boundary for the Project.

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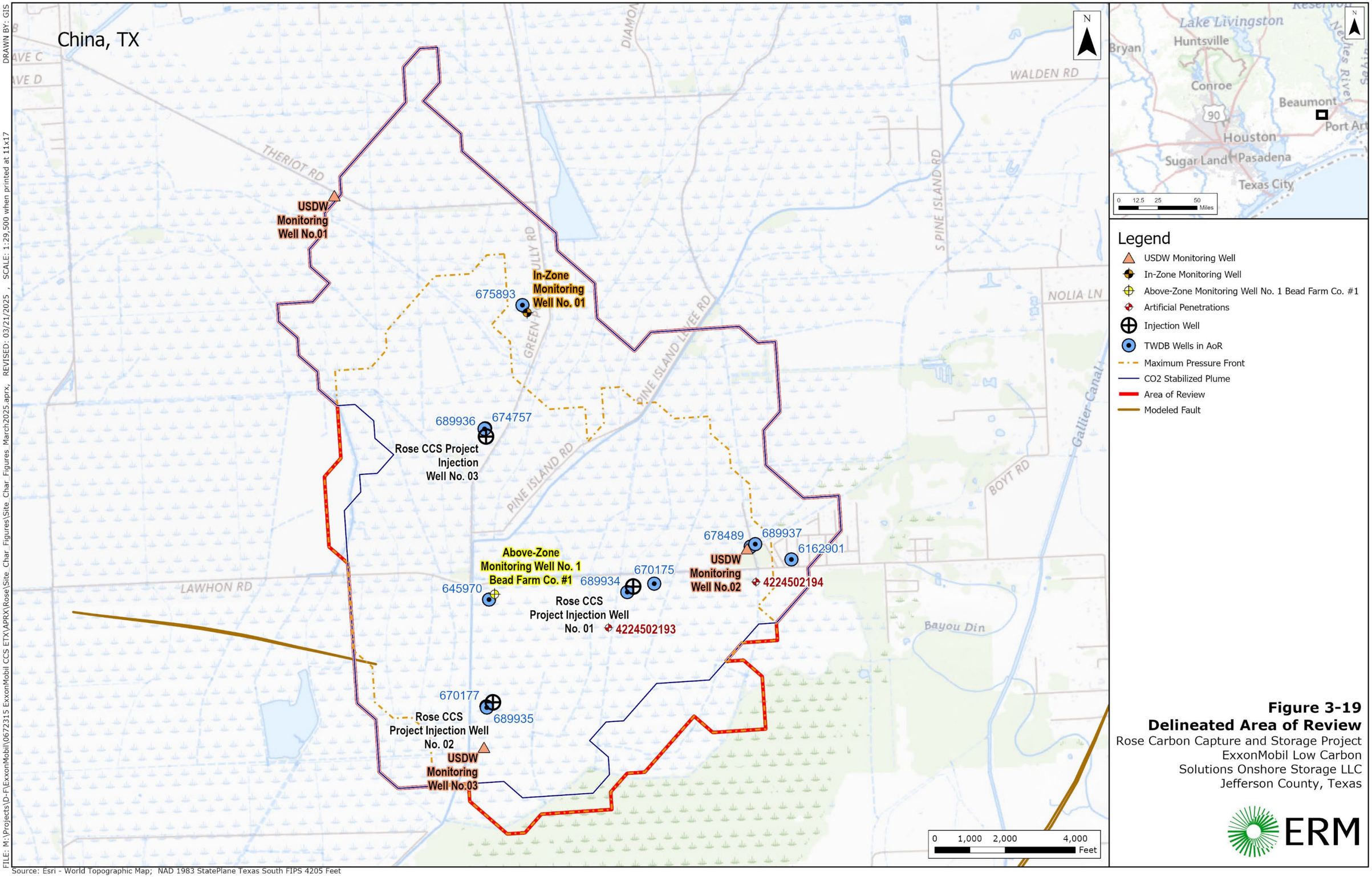


Figure 3-19
Delineated Area of Review
Rose Carbon Capture and Storage Project
ExxonMobil Low Carbon
Solutions Onshore Storage LLC
Jefferson County, Texas

ERM

Source: Esri - World Topographic Map; NAD 1983 StatePlane Texas South FIPS 4205 Feet

FILE: M:\Projects\D-F\ExxonMobil\0672315 ExxonMobil CCS ETX\APRX\Rose\Site_Char_Figures\Site_Char_Figures_March2025.aprx, REVISED: 03/21/2025 , SCALE: 1:29,500 when printed at 11x17 DRAWN BY: GIS

3.8 Stages of Model Development

The stages of development for the CO2 plume and pressure-front model started with pre-operational phase data and industry standards to predict the AoR boundary. The geomodel and reservoir model rely on these data and on industry standard correlations for the assignments of properties based on site-specific conditions. Physical rock property distributions assigned to the model based on geostatistics have been analyzed and are consistent with results from the stratigraphic and development wells and all other available data.

The following objectives were achieved for the pre-operational phase of the model:

1. Verify that the AoR was based on relevant existing and new information and identify where this information supports assumptions used in the model;
2. Align the conceptual/geologic model and model inputs with existing data, including pre-operational testing results at the stratigraphic and development wells;
3. Assess how the AoR model reasonably and accurately represents the geologic and operational systems, including sensitivity analyses, and yields information necessary to delineate the AoR; and
4. Confirm that conservative and reasonable methods were used to delineate the AoR and protection of USDW.

Looking forward to the operational phase of the project, updates will be made to the model for calibration purposes. The model calibration procedures will likely focus on the parameters that have been identified during the pre-operational modeling effort as the most sensitive parameters during sensitivity analyses. The calibration process is intended to be an iterative process, with updates to the geomodel and input parameters, to achieve an acceptable agreement between model predictions and the collected testing and monitoring data.

3.9 Corrective Action Plan and Schedule

Consistent with 40 CFR 146.84, the primary objective of this Corrective Action Plan is to identify the potential risk for loss of CO2 or brine containment through artificial penetrations of the UCCZ and to specify corrective actions that would be taken to restore the integrity of the UCCZ, if needed. ExxonMobil undertook a thorough investigation of artificial penetrations within and immediately adjacent to the AoR. Public and private databases were searched, historical aerial photographs were reviewed, an aeromagnetic survey was conducted across the AoR, and field reconnaissance with ground penetrating radar was conducted at certain locations to reduce uncertainty. When the results of these multiple lines of evidence were compiled, a total of five stratigraphic, legacy oil and gas (legacy wells), and water wells were identified within the AoR as shown on Figure 3-19.

Two artificial penetrations were found to penetrate the UCCZ based on an analysis of the available data. These two artificial penetrations warrant corrective action planning and scheduling based on conservative assumptions regarding the potential for impact by injection and assumptions with respect to well and plug characteristics. Following the requirements outlined in 40 CFR 146.84(c)(2), 146.84(c)(3), and 146.84(d), each artificial penetration within the AoR that may penetrate the UCCZ was evaluated for the quality of casing and cementing in the case of existing wells or for the quality of plugging and abandonment (P&A) in the case of abandoned wells. The planned corrective actions and schedule outlined in this section are

presented for each artificial penetration that could hypothetically serve as a conduit for fluid movement.

This section provides a rigorous corrective action process for each well that begins with additional well assessment activity and ends with establishing incremental barriers to remedy the potential for CO2 or brine crossflow between the injection zones and USDW. The USDW depth range is 1,415 to 1,489 ft KB. For conservative purposes, the USDW depth of 1,489 ft KB was used for setting the USDW cement plugs.

3.9.1 Data Acquisition and Evaluation of Artificial Penetration Information

In accordance with 40 CFR 146.82(a)(4) and 40 CFR 146.84(c)(2), a search was conducted to identify and assess the occurrence of artificial penetrations within and immediately beyond the AoR. Artificial penetrations included oil and gas wells; Class I, II, III, IV, and V UIC wells; water wells; mines; quarries; and potential subsurface cleanup sites. The following data sources were reviewed to identify potential artificial penetrations within the AoR:

- The Railroad Commission of Texas (RRC) GIS Database;
- The Texas Water Development Board;
- Texas Commission on Environmental Quality UIC Central File Room database;
- Brackish Resources Aquifer Characterization System;
- Database for underground mines and quarries (U.S. Geological Survey Mine Related Features and U.S. Geological Survey Mineral Resources);
- State- or EPA-approved subsurface cleanup sites; and
- Third-party Oil and Gas Record Databases including Enverus Drilling Info, IHS Energy Portal, Tobin Data, EMSDB, and HART.

No subsurface cleanup sites, mines, or quarries were identified within the AoR. Based on the well locations identified in the above databases, additional review was conducted utilizing historical records to assess their veracity of each implied well presence, geospatial location, and historical completion, along with plugging, casing, and cementing procedures for each artificial penetration. Duplicative well identifications were merged if appropriate based on the records. The following are additional analyses that were conducted for artificial penetrations:

- Historical aerial photograph reviews for the identified artificial penetration locations;
- A physical record request was made to the RRC, and the available documents were reviewed;
- An aeromagnetic survey of the AoR was completed in August 2023; and
- In-person reconnaissance surveys and use of ground penetrating radar were conducted on November 8, 2023, at selected locations with remaining uncertainty.

Using a combination of the data above, a tabulation of identified artificial penetrations within the AoR has been created and is summarized in Table 3-16. The identified artificial penetrations can be found on Figure 3-19. Available records for the identified artificial penetrations can be found in Appendix C.

Table 3-16: Summary of Artificial Penetrations within AoR

#	Well Name	State/ Federal Well ID (API Number)[1]	Well Type	Well Status	Date Drilled	Depth (ft KB)	Latitude, Longitude (NAD83)	Penetrates UCCZ?
1	Above-Zone Monitoring Well No. 01 Bead Farm Co. #1	4224532908	Project Monitoring Well	Active	10/15/2023 Recompleted 02/07/2025	8,664	29.999222, -94.297364	Yes
2	Broussard JE Jr-1[2]	4224502193	Dry Hole	P&A	2/10/1958	9,050	29.996539, -94.287435	Yes
3	Broussard J. E. Etal-1	4224502194	Dry Hole	P&A	Unknown	2,518**	29.999730, -94.274070	No
4	BFC-1 Rig Supply Water Well #1	645970	Water Rig Supply	In Use	8/11/2023	290*	29.999028, -94.298056	No
5	D. S. Wier	Not Available	Water Supply	P&A	1941	7*	30.001389, -94.270833	No
6	Labelle Properties Ltd #1	4224532913	Project Injection Well No. 01	Active	06/23/204	8,672	29.999678, -94.285108	Yes
7	Bead Farm Co. #2	4224532911	Project Injection Well No. 2	Active	07/15/2024	8,752	29.991017, -94.298036	Yes
8	Bead Farm #3	4224532912	Project Injection Well No. 3	Active	08/05/2024	8,565	30.011778, -94.297858	Yes
9	Bead Farm Company #4	4224532914	Project Monitoring Well	Active	08/31/2024	8,383	30.021558, -94.293978	Yes
10	Rose Rig Supply Water Well #1	670175	Water Rig Supply	Active	6/14/2024	300*	29.999857, -94.28321	No
11	Rose Rig Supply Water Well #2	670177	Water Rig Supply	Active	7/2/2024	300*	29.990716, -94.298632	No
12	Rose Rig Supply Water Well #3	674757	Water Rig Supply	Active	7/19/2024	300*	30.012428, -94.297908	No

[1] Readily available well identification numbers provided from public data sources up to March 19, 2025.

[2] API:42245E070100 and an associated dry hole (API: 245) were determined to be associated with Broussard JE Jr-1 and not separate wellbores.

13	Rose Rig Supply Water Well #4	675893	Water Rig Supply	Active	8/15/2024	300*	30.021947, -94.294199	No
14	USDW Monitoring Well No. 1	678487	USDW Monitoring Well	Active	8/20/2024	330*	30.030833, -94.310556	No
15	USDW Monitoring Well No. 2	678489	USDW Monitoring Well	P&A***	8/20/2024	440*	30.0025, -94.274444	No
16	USDW Monitoring Well No. 3	678491	USDW Monitoring Well	Active	8/20/2024	330*	29.9875, -94.298889	No
17	USDW Monitoring Well No. 2R	683826	USDW Monitoring Well	Active	11/9/2024	320*	30.0025, -94.274444	No
18	Shallow Groundwater Well #1	689934	Monitoring Well	Active	9/19/2024	25*	29.99927, -9428565	No
19	Shallow Groundwater Well #2	689935	Monitoring Well	Active	9/17/2024	25*	29.99062, -94.2986	No
20	Shallow Groundwater Well #3	689936	Monitoring Well	Active	9/17/2024	25*	30.01238, -94.29797	No
21	Shallow Groundwater Well #4	689937	Monitoring Well	Active	9/18/2024	20*	30.00268, -94.27403	No

Notes:

ID = identification
*Water well datum is BGL
**KB not available in historical records

***Casing collapsed above water table, couldn't collect sample, redrilled as 2R in same location

3.9.1.1 Review of Historical Aerial Photographs

ExxonMobil conducted a review of readily available historical aerial photographs for selected legacy wells to assess well location and completion dates. Two legacy wells within the AoR and one legacy well outside of the AoR were assessed using available historical aerial photographs from 1952 and 2020.

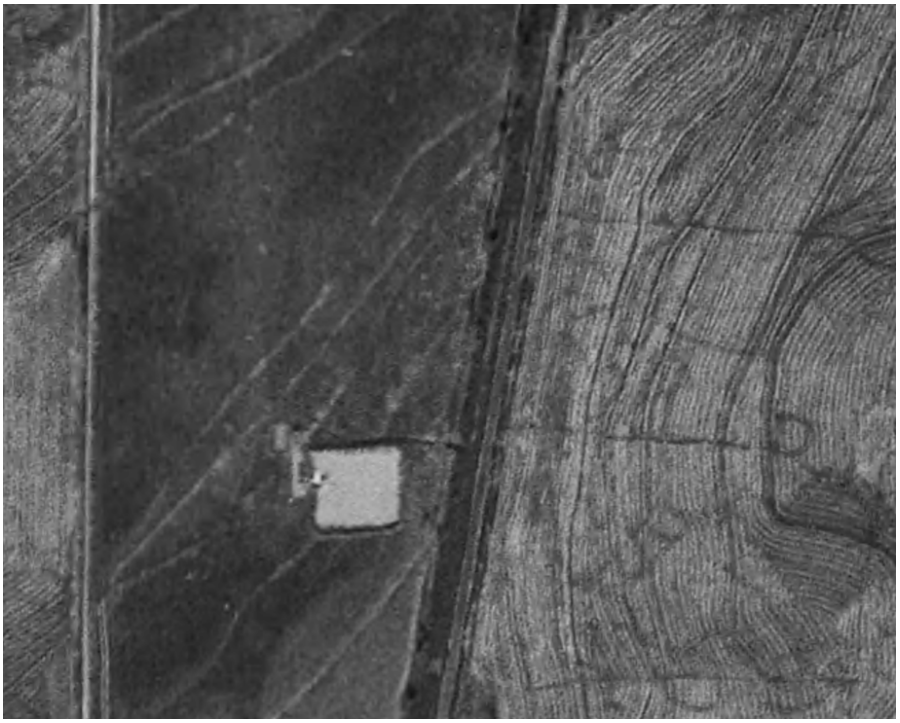
The Broussard Trust-1 (API: 4224500111) well location is located outside of the AoR and was completed below the UCCZ. Information on this well is provided for completeness purposes only to illustrate the standard of care taken to identify legacy wellbores for corrective action purposes. Based on the available imagery, a well pad and pit were observed in the 1952 historical aerial photograph (Figure 3-20), confirming the presence and location of this well. By the time that a 1976 aerial photograph was taken, the well pad appears to be revegetated and the pit remained visible showing that the well had been drilled but was probably not abandoned by that time. The pit was observed until at least the 1995 aerial photograph.

Figure 3-20: 1952 Historical Aerial Photograph of Broussard Trust-1 (API: 4224500111)



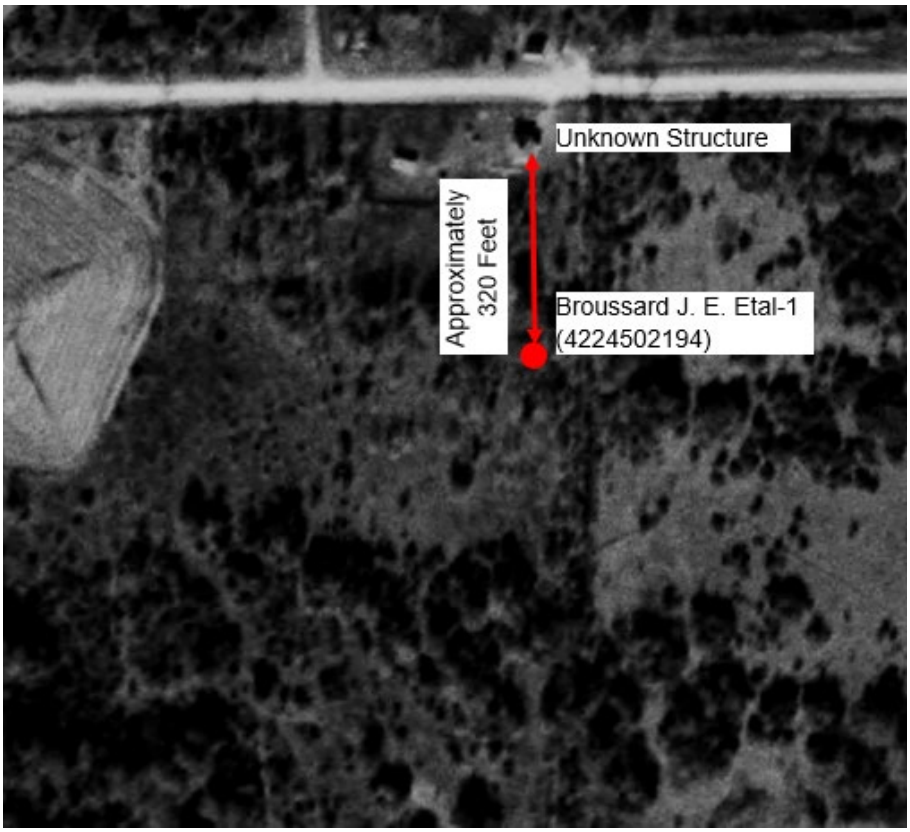
The Broussard JE Jr-1 (API: 4224502193) well location was identified in the 1959 historical photograph (Figure 3-21). In the 1960 aerial photograph, the pad appears to have been reclaimed with revegetation in progress.

Figure 3-21: 1959 Historical Aerial Photograph of Broussard JE Jr-1 (API: 4224502193)



The Broussard J. E. Etal-1 (API: 4224502194) location identified no well surface impacts and construction features within the historical aerial imagery. An unknown structure was identified to the north of the known coordinates along Lawhon Road in the 1952 historical photograph (Figure 3-22). In the 1957 aerial photograph, the structures appear to have been removed with revegetation of the area in progress. The relationship between the structure and the well location is uncertain. The well location was not confirmed as being a drilled well location.

Figure 3-22: 1952 Historical Aerial Photograph of Broussard J. E. Etal-1 (API: 4224502194)



3.9.1.2 Physical Records Review

For wells within the AoR, ExxonMobil obtained copies of physical records for Broussard JE Jr-1 (API: 4224502193). The remaining records were reviewed through digital copies on the RRC online databases, Enverus Drilling Info, and IHS Energy Portal. These records can be found in Appendix C-5.

3.9.1.3 Aeromagnetic Survey

Due to the age of well development in the area, additional data collection was conducted in selected portions of the AoR, wherein additional insight into well locations or details was required to improve accuracy. Magnetic survey methods were used in 2023 to scan portions of the AoR for magnetic anomalies that are caused by subsurface features, which could include abandoned wellbores with iron or steel casing. The survey was completed on a prior model of the AoR, which has since been updated. The survey was conducted by Sander Geophysics Ltd. A drone was flown across targeted portions of the AoR to identify the presence or absence of magnetic anomalies. Figure 3-23 shows the survey grid and the magnetic anomalies from the survey. The technical report from this survey can be found in Appendix C-4. As shown on Figure 3-24, well heads, pipelines, and farm equipment present during the survey are displayed according to the key. Well heads are generally high amplitude positive (red) anomalies with wavelengths ranging from 150 meters to 500 meters (in this region). Pipelines are a series of positive/negative anomalies (red and blue) based on flight line spacing for the survey. Negative anomalies are generally due to the base of a magnetic source indicating near surface nature with limited depth extent. Most of the lower amplitude and shorter wavelength positive anomalies were noted to be due to surface culture (e.g., culverts and bridges).

Figure 3-23 shows the aeromagnetic survey results superimposed with the artificial wells identified. Based on this review, no additional legacy well locations were identified.

Figure 3-23: Aeromagnetic Survey Grid and Magnetic Anomalies within AoR



Figure 3-24: Aeromagnetic Survey Analysis of Anomalies



ExxonMobil attempted to conduct an in-person reconnaissance survey for two legacy well locations identified in Table 3-16 for Broussard JE Jr-1 (API: 4224502193) and Broussard J. E. Etal-1 (API: 4224502194), and one well that was outside the AoR for Broussard Trust-1 (API: 4224500111). The intent of the survey was to address uncertainty regarding the existence of these reported legacy wells and verify their presence or absence. ExxonMobil worked with a geophysical surveyor, Ground Penetrating Radar Services, Inc. (GPRS), to conduct survey assessments. GPRS utilized a frequency domain electromagnetic induction meter for the geophysical surveys. Two of the three locations, Broussard JE Jr-1 (API: 4224502193) and Broussard J. E. Etal-1 (API: 4224502194), were flooded due to farm irrigation activities. The presence of standing water negates the electromagnetic induction signal; therefore, they could not be surveyed. A visual inspection of the location was recorded including looking for apparent features that may have indicated the presence of a legacy well pad or mud pit. None were apparent at the three flooded well locations.

The results of the in-person survey completed for the Broussard Trust-1 (API: 4224500111) well location are presented in Figure 3-25. The geophysical survey image indicates findings across four different frequencies. These are typical frequency formats utilized for detecting metallic objects. The orange feature on the figure running east to west indicates a very bright linear reaction that is produced by a pipeline running across the northern portion of the area. ExxonMobil confirmed the presence of multiple pipelines in this area via the RRC GIS Database. The pipelines were identified as active and operated by Energy Transfer Company and Mobil Pipe Line Company. These pipelines reportedly transfer crude oil and high volatile liquids. The yellow feature on Figure 3-25 shows a positive reaction in the southwest portion of the survey, which appears to be a linear feature (such as a flowline or pipeline) running generally from northwest to southeast. The blue area indicates a negative reaction near the center of the area, which indicates an area of less conductivity than the surrounding data. The blue negative reaction can indicate soil features such as compaction for dirt foundations or other soil disturbances such as the presence of a hole in the ground. The records for the Broussard Trust-1 (API: 4224500111) well indicated this location was a dry hole that was plugged and abandoned after it was drilled in 1937, so there would be no metal anomalies expected to exist within the wellbore if it was a dry hole where casing was not run or was pulled. It is likely that the historical location of the well is in the area identified by the negative reaction in blue in the center of the survey area.



3.9.1.4 Review of Abandoned Well Plugging Records

ExxonMobil conducted an evaluation of the information available for the artificial penetrations listed in Table 3-16. The list of topics reviewed included:

- Well depth and completion;
- Well drilling date;
- Well abandonment date;
- Open hole or cased hole identification;
- Location of reported plugs;
- Casing and cementing records;
- Records of mechanical integrity tests or logs performed; and
- Well deviations.

The wells listed on lines 3 through 5 and 10 through 22 in Table 3-16 were found to have completion depths shallower than the UCCZ; therefore, no further assessment for corrective action was warranted because the wells have not penetrated the UCCZ. Wells 1 and 2 were identified as penetrating the UCCZ and subject to an assessment of plugging records and potentially corrective action for deficiencies. Record availability for the two artificial penetrations requiring corrective actions were sufficient for determining the corrective action plans. As

expected, wells drilled in the 1940s and early 50s have limited well completion information; however, this did not impact the corrective action plan.

3.9.1.5 Summary of Artificial Penetrations Tabulation

ExxonMobil conducted a thorough assessment of the potential for artificial penetrations to be present within the AoR. Wells and boreholes completed above the UCCZ were determined to pose no hypothetical risk to function as a vertical conduit from the injection zone. For those artificial penetrations that were completed below the UCCZ, multiple sources of information were reviewed, and the relevant information was analyzed in detail [40 CFR 146.84(c)(2)]. Table 3-16 presents a summary of the artificial penetrations of interest for developing the Corrective Action Plan. The following summarizes the findings to date for the three legacy wells (excluding non-applicable water wells) identified in the AoR:

- Bead Farm Co. #1 (4224532908): This well is within the CO2 plume and within the pressure front. ExxonMobil drilled this well in October 2023 as a stratigraphic well for this Project. The stratigraphic well has since been converted to an above-zone monitoring well to conduct monitoring above the confining zone. The well is cased and cemented with top of cement above the UCCZ utilizing CO2-compatible cement. An additional balanced cement plug with CO2-compatible cement was placed at the UCCZ inside the casing.
- Broussard JE Jr-1 (4224502193): This well is within the CO2 plume and within the pressure front. The well was drilled in the 1950s and completed as an open hole. A CO2-compatible cement plug has been set at the UCCZ. An additional CO2-compatible cement plug has been set at the USDW, the Base of Usable Quality Water (BUQW), the shoe casing, and the Superior Quality Water (SQW).
- Broussard J.E. Etal – 1 (4224502194): The well is within the CO2 plume and within the pressure front. The well is an open hole well drilled to a reported 2,518 ft KB. The well does not penetrate the UCCZ and is not considered a risk for potential brine crossflow.

3.9.2 Corrective Action Plan for Artificial Penetrations

ExxonMobil developed a Corrective Action Plan for each artificial penetration that was identified to have the potential to act as a vertical conduit because it was not plugged, it was plugged and abandoned improperly, or not plugged in a manner that mitigates the movement of CO2 or other fluids that could potentially endanger USDWs as required by 40 CFR 146.84(c) and (d).

For the well identified with plugging deficiencies, the basis for the corrective action strategy is to re-enter each well that has insufficient proof that it has been sealed to reduce the potential for vertical flow through the UCCZ and to install cement barriers inside the casing to mitigate migration potential through the casing. The CO2-compatible cement material has been used where appropriate in accordance with 40 CFR 146.84(d).

3.9.2.1 Tabulation of Artificial Penetrations for Corrective Action

Figure 3-26 shows the location of the wells identified for corrective action in relation to the five-year pressure front and CO2 plume. Table 3-17 lists Bead Farm Co. #1 (API: 4224532908) and Broussard JE Jr-1 (API: 4224502193) as identified for corrective actions prior to injection based on the expected arrival times of the CO2 plume and pressure front.

As described in the Testing and Monitoring Plan of this Application, direct and indirect monitoring technologies will be used to track the CO2 plume and pressure front. A planned

reevaluation of the AoR will occur after five years of injection and throughout the lifecycle of the Project. If at any time the rate of the CO2 plume or pressure front expansion is predicted to impact additional artificial penetrations that may be found, the Corrective Action Plan will be amended to include the necessary corrective action to reduce the potential for USDW endangerment in accordance with 40 CFR 146.84(b)(2)(i)–(iv).

3.9.2.2 Analysis of Wells Identified for Corrective Action

Table 3-18 summarizes the available information concerning the borehole or well completion features and the P&A activities, as appropriate. ExxonMobil reviewed this information and determined the specific defects that require mitigation under 40 CFR 146.84(c) and (d).

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Table 3-17: List of Artificial Penetrations and Schedule for Corrective Action

Well Name	API Number	Latitude, Longitude (NAD83)	Pressure Plume	CO2 Plume	Casing	Schedule
Bead Farm Co. #1	4224532908	29.9992220, -94.2973637	Year 1 (Upper Frio)	Year 6 (Fleming 3)	Casing Present	Pre-operation
Broussard JE Jr-1	4224502193	29.996050, -94.286120	Year 13 (Upper Frio)	Year 1 (Upper Frio)	Open Hole	Pre-operation

Table 3-18: Summary of P&A Deficiency for Wells Penetrating UCCZ

Well Name	API Number	Apparent Deficiency or Uncertainty Based on Review of Available Information			Summary of Corrective Action
		Casing Records at UCCZ	USDW plug(s) installed	UCCZ + plug(s) installed	
Bead Farm Co. #1	4224532908	Cased	No	Yes	Pump inside casing with CO2-compatible cement plug(s) across the UCCZ, convert wellbore to Above-Zone Monitor Well
Broussard JE Jr-1	4224502193	Open borehole	Yes	Yes	Pumped open hole CO2-compatible cement plug(s) at UCCZ, USDW, BUQW, casing shoe, and SQW.

3.9.3 Corrective Action Sequence Plan

The following corrective action sequences were undertaken in accordance with 40 CFR 146.84(c)(3) for the two artificial penetrations listed in Table 3-17. The outlined actions are based on completed plugging activities for the stratigraphic well or to plug deficiencies potentially present in the legacy well based on the available records (Table 3-18). Each artificial penetration in the CO2 plume has been re-entered, and if sufficient barriers are not present, each well has had the appropriate barriers installed during the corrective action P&A field operations. The barriers have been established at the UCCZ, the surface casing shoe, the base of the lowermost USDW, and wellhead surface. The barrier at the UCCZ was constructed of CO2-compatible material consistent with 40 CFR 146.84(d).

A general approach for well re-entry and corrective actions is summarized in the sections below. A detailed summary of the corrective action sequence for each well and dates when actions were taken are presented in Table 3-19 and as specific well schematics for each well to be re-entered in Appendix C.

3.9.3.1 Field Verification of Well Status

For each well that was field verified via re-entry, the casing and cement plug features and potential for sufficient isolation were evaluated using standard industry tools. ExxonMobil completed a visual inspection of cement evidence at surface before well re-heading, conducted a casing pressure test, and if needed, completed a cement sheath evaluation log. In accordance with 40 CFR 146.84(d), the actual deficiencies of the casing or cement identified during tests would be the basis for the corrective action sequences pursued during field operations to seal at each artificial penetration.

3.9.3.2 Preparing the Surface Location

Prior to mobilizing at a well location, ExxonMobil conducted an initial site visit to identify current site access and wellhead conditions. If required, a subsurface survey was completed utilizing ground penetrating radar to identify the well location. If legacy equipment remained on the site, the equipment was removed prior to mobilization. Surface piping and electrical components were assessed and removed from the site locations. Additionally, access roads to the area surrounding the pad and wellhead access improvements were evaluated to facilitate safe entrance and egress along with rig operations.

If a sign or marker was present, the first step was to confirm that the API number on the plat corresponded to the well where mobilization was taking place to complete corrective action operations. After the P&A marker or exposed metal plate was removed, necessary equipment would be rigged up on the well. The cement surface plug of the well would be drilled out and the hole conditioned sufficiently for well logging tools to be utilized within the well on an as-needed basis.

ExxonMobil followed required notification requirements prior to commencing remedial field activities that may take the form of workover or drilling operations. At least five days prior to commencement of well plugging operations, ExxonMobil notified the RRC via a request for approval of the proposed procedure for plugging the well using Form W-3A. ExxonMobil also notified the RRC at least four hours prior to the start of plugging operations. Copies of the notifications and of field operational records provided to the state are provided to EPA Region 6.

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[redacted]

3.9.3.4 Reporting Completion of Corrective Action

After completing the corrective actions and re-plugging a well, a W-3 plugging report will be submitted to the RRC within 30 days of plugging, including the W-15 cementing report. Records of the corrective actions will be submitted to the UIC Program Director, with copies provided to EPA Region 6.

3.9.4 Site-Specific Review of Corrective Actions

Table 3-19 provides the corrective action sequences for the two wells. Appendices C-1 to C-2 provide the well schematics of each legacy well that have been re-entered for evaluation and re-plugging, which were developed based on the historical information and completion of the associated proposed corrective actions.

Table 3-19: Summary of Corrective Actions for Wells Penetrating the UCCZ

[redacted]

3.9.5 Stratigraphic Well P&A and Conversion

The following section outlines the plan for the P&A and conversion of the stratigraphic well referred to as Bead Farm Co. #1. The stratigraphic well was completed in the immediate vicinity of the injection wells for the purpose of gathering site-specific physical and chemical information on the confining and injection zones as well as to conduct conductivity testing. Once the data gathering activities were completed, the stratigraphic well was plugged across the UCCZ and converted to an above-zone monitoring well to obtain fluid samples from first permeable interval above the UCCZ.

3.9.5.1 Pre-Plugging Activities (Notifications, Permits, and Inspections)

ExxonMobil has complied with reporting and notification provisions for stratigraphic wells drilled in Texas in accordance with RRC. The following notifications and permits were submitted:

- Bead Farm Co. #1: Complete Cementing Report Form W-15 and Recomplete Report Form W-2 to be filed with the RRC District Office 3 within 150 days after recompletion.

Broussard JE Jr-1: Submit W3 plugging report with necessary attachments within 30 days after plugging operations are completed. ExxonMobil has also submitted these records to the UIC Program Director for completeness purposes.

Claimed as PBI [redacted]

3.9.6 Plan for Site Access

In accordance with 40 CFR 146.84(b)(2)(iv) and 40 CFR 146.84(d), ExxonMobil has negotiated land access for each of the artificial penetrations identified for corrective action. Research to identify the well owners via regulatory databases has been completed and necessary access rights secured. The limited number of legacy wells requiring corrective action prior to commencing operations is a significant factor in mitigating the risk for the Project.

As shown in Table 3-20, an access agreement is in place for the Bead Farm Co. #1 stratigraphic well and Broussard JE Jr-1. Corrective actions for these wells have been completed. If appropriate and necessary, ExxonMobil will seek plugging orders from the RRC in

accordance with Subchapter C of Chapter 89 of the Texas Natural Resource Code to obtain access for corrective actions.

If the AoR reevaluation conducted at the minimum schedule of once every five years identifies the potential for corrective action requirements at additional wells, ExxonMobil will promptly begin review of the additional wells in accordance with the process described this Corrective Action Plan. If future site access issues are identified for wells identified for corrective action, ExxonMobil will notify the UIC Program Director.

Table 3-20: Summary of Access Milestones for Corrective Action

Well Name	API Number	Proposed Actions for Access Rights	Anticipated Date of Final Access Agreement
Bead Farm Co. #1	4224532908	ExxonMobil is the operator of this well. Wellbore access is in place. Surface access agreements are in place with the surface owner this well is located on. These rights run with land ownership. If the land is conveyed to a third party, the surface access rights will remain in place.	Completed
Broussard JE Jr-1	4224502193	The last operator of this wellbore does not have an active Organization Report (P-5) status with the RRC. ExxonMobil conducted an open records request for the well and confirmed the owner of the well does not have an active P-5. ExxonMobil has acquired the required RRC permits for re-entering the well and completing corrective actions. ExxonMobil has confirmed site access with the landowner Labelle Properties, Ltd to complete the corrective actions.	Acquired on March 31, 2023

3.10 AoR Reevaluation Plan and Schedule

3.10.1 Frequency of AoR Reevaluation

ExxonMobil adopts the minimum frequency of five years for the AoR and Corrective Action Plan reevaluation. Information gathered from implementation of the Section 5 – Testing and Monitoring Plan will be used to evaluate whether a more frequent review period is warranted based on the observed conditions of CO2 plume and pressure front migration.

If an alteration of the AoR reevaluation frequency of a minimum of every five years is recommended, the change in frequency will be aligned with the data evaluation and findings relative to the degree of protectiveness of USDW and approved by the UIC Program Director. ExxonMobil acknowledges that any amendments to the AoR and Corrective Action Plan must be approved by the UIC Program Director, must be incorporated into the permit, and are subject to the permit modification requirements at 40 CFR 144.39 or 144.41, as appropriate. ExxonMobil also acknowledges the requirement in 40 CFR 146.84(b)(2)(i) of “The minimum fixed frequency, not to exceed five years, at which the owner or operator proposes to reevaluate the area of review.”

3.10.2 Content of the AoR Reevaluation

The requirements for AoR reevaluation are specified in 40 CFR 146.84(e) and include the following considerations:

- Reevaluate the AoR in the same manner specified in 40 CFR 146.84(c)(1);
- Identify all wells in the reevaluated AoR that require corrective action in the same manner specified in 40 CFR 146.84(c);
- Perform corrective action on wells requiring corrective action in the reevaluated AoR in the same manner specified in 40 CFR 146.84(d); and
- Submit an amended AoR and Corrective Action Plan or demonstrate to the UIC Program Director through monitoring data and modeling results that no amendment to the AoR and Corrective Action Plan is needed. Any amendments to the AoR and Corrective Action Plan must be approved by the UIC Program Director, must be incorporated into the permit, and are subject to the permit modification requirements at 40 CFR 144.39 or 144.41, as appropriate.

3.10.3 Conditions Warranting AoR Reevaluation

The monitoring and operational conditions that would warrant a reevaluation of the AoR prior to the next scheduled reevaluation [i.e., the minimum fixed frequency established in 40 CFR 146.84 (b)(2)(i)] are outlined below. These triggering events are based on a review of the hydrogeological site characteristics, the AoR and plume model results, and the pre-operational and operational plans for the Project. For each triggering event, Table 3-21 provides a summary of how the monitoring and operational data will be used to inform an AoR reevaluation and how corrective action will be conducted to reduce the potential for threats to USDW, if any arise. If an AoR reevaluation were to occur, corrective actions will be reevaluated.

Table 3-21 provides a list of the potential triggers for an AoR reevaluation consistent with the requirements of 40 CFR 146.84(b)(2)(ii).

Table 3-21: Triggers for AoR Reevaluation

No.	Events that may Trigger an Unscheduled AoR Reevaluation, with concurrence of the UIC Program Director	How Will Monitoring and Testing Data Inform the AoR Reevaluation?	How Corrective Action will be Conducted to Reduce the Potential for Threats to USDW
1	Compliance with minimum fixed frequency of at least once every five years [40 CFR 146.84(b)(2)(i)].	The AoR may need to be reevaluated more frequently than the minimum fixed frequency based on changes in operations or results from site monitoring that differ from model predictions. In these cases, the schedule for AoR reevaluation may be updated appropriately.	ExxonMobil will notify the UIC Permit Manager that a more frequent AoR reevaluation is warranted based on changed conditions. This notification will form the basis of a permit modification and updates to the relevant portions of the Application.
2	changes in operations that mandate AoR reevaluation under 40 CFR 146.84(c) as outlined below.	AoR reevaluation will be informed by both planned changes to operations and by testing and obtaining monitoring data that signal potential unexpected CO2 plume migration impacting the extent of the AoR. Examples may include installation of an additional injection well or identification of new offset well installation by third parties. Certain short-term operational changes, such as temporary well shut-ins, are not expected to warrant AoR reevaluation.	ExxonMobil will notify the UIC Program Director of the plan for changes in operations by pre-permitting engagement and the necessary modifications to the permit. The UIC Program Director may require an AoR reevaluation prior to approving such operational changes or changes may be allowed to occur prior to reevaluation of the AoR. The AoR reevaluation will be submitted to the UIC Program Director within an agreed-upon timeframe of instituting such changes, as described in the AoR and Corrective Action Plan.
2A	Plan to change injectate composition mixture.	Re-run the reservoir plume model with a new composition mixture. If plume extents increase, reevaluate the AoR.	Within one month of composition change, notify the UIC Program Director of change and potential need to reevaluate AoR.
2B	New offset operations are established.	Re-run the reservoir plume model with new data. If plume increases in shape or extents, reevaluate the AoR.	Within one month of commencement of new operations, notify the UIC Program Director of change and potential need to reevaluate AoR.
2C	Measured supercritical gas saturation is different than modeled gas saturation.	Re-run the reservoir plume model with new data. If plume increases in shape or extents, reevaluate the AoR.	ExxonMobil will notify the UIC Program Director of results from the AoR reevaluation based on model results.
2D	An injection well exhibits an anomalous change in surface	Incorporate new pressure information and re-run the reservoir plume model with new data. If plume increases in shape or extents, reevaluate the AoR.	ExxonMobil will notify the UIC Program Director of results from the AoR reevaluation based on model results.

No.	Events that may Trigger an Unscheduled AoR Reevaluation, with concurrence of the UIC Program Director	How Will Monitoring and Testing Data Inform the AoR Reevaluation?	How Corrective Action will be Conducted to Reduce the Potential for Threats to USDW
	pressure for a sustained period of time.		
2E	An injection well exhibits an anomalous change in bottomhole temperature for a sustained period of time.	Incorporate new temperature information and re-run the reservoir plume model with new data. If plume increases in shape or extents, reevaluate the AoR.	ExxonMobil will notify the UIC Program Director of results from the AoR reevaluation based on model results.
2F	Casing or tubing leak detected by casing integrity logging.	Investigate possible tubing leak and trigger contingency monitoring to reevaluate the AoR.	ExxonMobil will notify the UIC Program Director of results from the AoR reevaluation based on contingency monitoring results.
2G	Positive pressure loss in tubing annulus.	Investigate possible pressure loss and trigger contingency monitoring to reevaluate the AoR.	ExxonMobil will notify the UIC Program Director of results from the AoR reevaluation based on contingency monitoring results.
3	Results from site monitoring that differ from model predictions [40 CFR 146.84(b)(2)(ii)] as outlined below.	An evaluation of monitoring data [required under 40 CFR 146.90] indicates that CO2 and/or pressure front migration is different than that predicted by the current AoR delineation model and, therefore, warrants an AoR reevaluation. The following examples provide specific criteria for differences in monitoring data and model predictions that may trigger an AoR reevaluation [40 CFR 146.84(b)(2)(ii)].	Notification of difference to UIC Program Director within one month of confirmed findings.

No.	Events that may Trigger an Unscheduled AoR Reevaluation, with concurrence of the UIC Program Director	How Will Monitoring and Testing Data Inform the AoR Reevaluation?	How Corrective Action will be Conducted to Reduce the Potential for Threats to USDW
3A	Seismic event greater than M3.0 within 5.6-mile radius of injection well.	Evaluate pressure and temperature data relative to operating limits and pressures in the in-zone monitoring well. Evaluate the need to enhance monitoring program to confirm extent of CO2 plume.	If evidence of mechanical integrity issues may cause an endangerment to USDW cease injection, notify the UIC Program Director within 24 hours of the determination and implement the emergency and remedial response plan approved by the UIC Program Director. Operations will resume upon UIC Program Director concurrence that necessary remedial or corrective measures have been taken such that the risk to the USDW is as low as reasonably practicable.
3B	Annual plume migration survey identifies the plume migration direction that is different then the modeled direction of migration.	Re-run the reservoir plume model incorporating injection well pressure and temperature data for calibration and other available information on plume migration and reevaluate the AoR.	Within one month of detection, ExxonMobil will notify the UIC Program Director of results from the AoR reevaluation based on calibrated model results.
3C	The horizontal CO2 plume migration rate is different than predicted.	Re-run the reservoir plume model incorporating injectors data for calibration and new information on plume migration and reevaluate the AoR.	ExxonMobil will notify the UIC Program Director of results from the AoR reevaluation based on calibrated model results.
3D	Sustained acoustic anomaly, which is unrelated to oil and gas activity in the area, detected by seismic survey or noise log.	Investigate seismic survey data anomaly and decide if the change triggers contingency monitoring to reevaluate the AoR.	ExxonMobil will notify the UIC Program Director of results from the AoR reevaluation based on seismic survey data analysis and or results from contingency monitoring.
3E	Statistically significant increases of indicator parameter concentrations above baseline for USDW samples of TDS, major cations and anions, CO2 concentration, isotopic values, or pH.	Resample fluid sample that contained the elevated concentrations and compare resample results with numerical criteria for trends and/or exceedances of target concentrations.	ExxonMobil will notify the UIC Program Director of results from the AoR reevaluation based on resampling results and data evaluation.
3F	The presence of separate-phase CO2 in the sampled fluids above the confining zone,	Investigate possible migration pathways and trigger contingency monitoring to reevaluate the AoR.	ExxonMobil will notify the UIC Program Director of results from the AoR reevaluation based on contingency monitoring results.

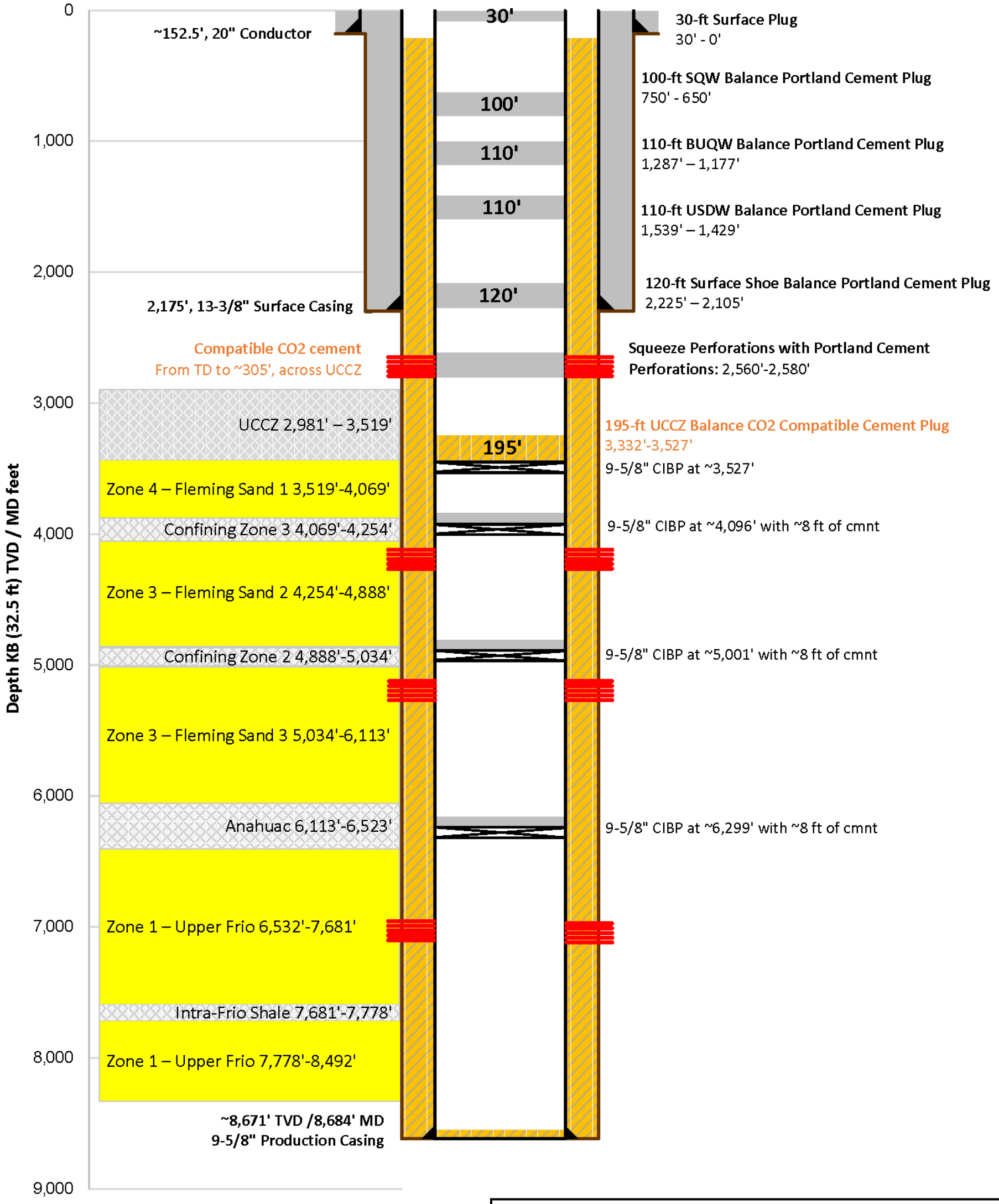
No.	Events that may Trigger an Unscheduled AoR Reevaluation, with concurrence of the UIC Program Director	How Will Monitoring and Testing Data Inform the AoR Reevaluation?	How Corrective Action will be Conducted to Reduce the Potential for Threats to USDW
	but below the lowermost USDW resulting from CO2/fluid migration out of the injection zone.		

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Appendix C Area of Review Maps and Corrective Action Well Schematics

Rose CCS Project Bead Farm 1

P&A Post Recomplete

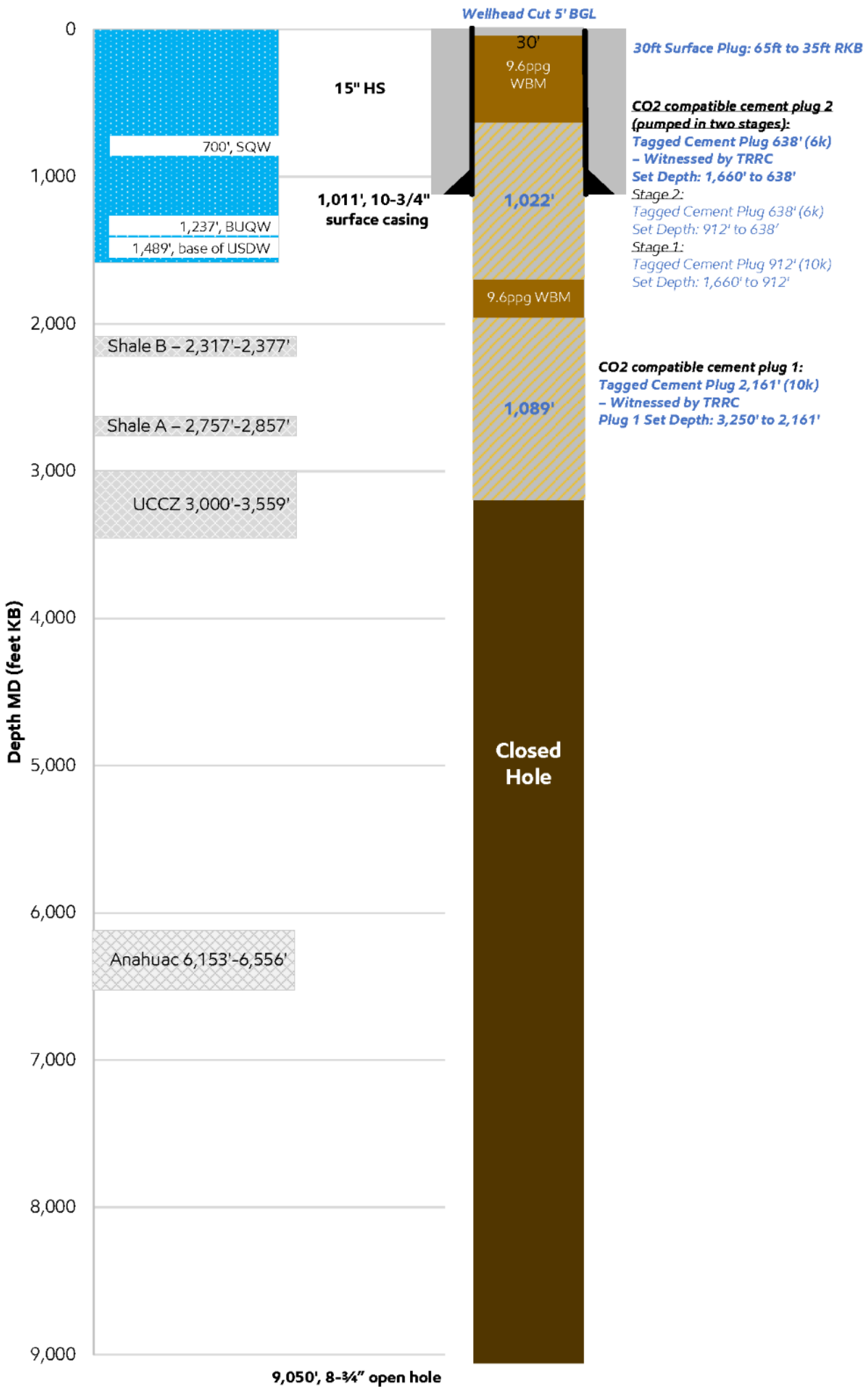


N/A – Not Available

Appendix C-1
Bead Farm Co. #1, Rose Stratigraphic Well
Corrective Action Schematic
API 4224532908
Rose Carbon Capture and Storage Project
ExxonMobil Low Carbon Solutions Onshore Storage LLC
Jefferson County, TX

ERM

Broussard JE Jr-1
(API 4224502193)
Final P&A

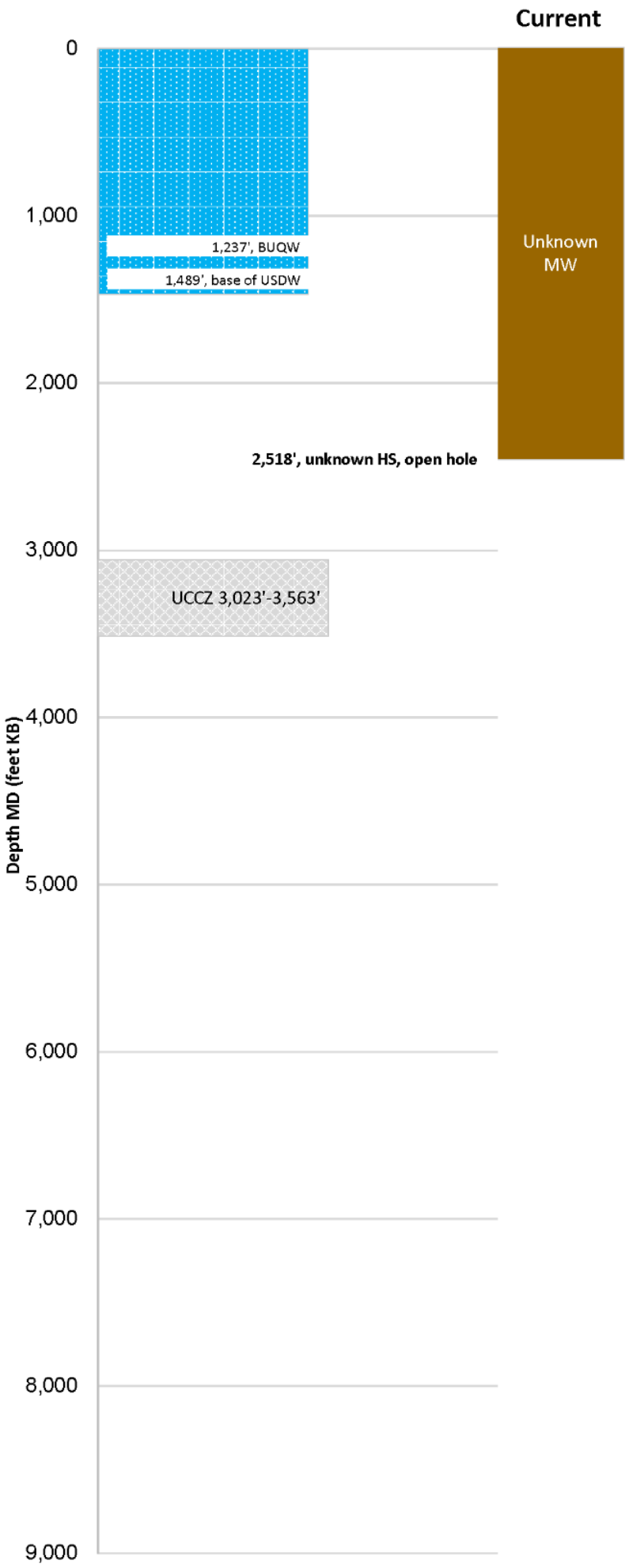


N/A – Not Available

Appendix C-2
Broussard JE Jr-1 Well Corrective Action Schematic
API 4224502193
Rose Carbon Capture and Storage Project
ExxonMobil Low Carbon Solutions Onshore Storage LLC
Jefferson County, TX

ERM

Broussard J. E. Etal-1 (API 4224502194)
(29.999730, -94.274070) - NAD83



KB:	N/A
GL:	N/A

Casing/Tubing Information	
Label	N/A
Type	N/A
OD	N/A
ID	N/A
Drift ID	N/A
COD	N/A
Weight	N/A
Grade	N/A
Hole Size	N/A
Depth Set	2518'
TOC	N/A
Cement	N/A

Spud:	N/A
Plug:	N/A

N/A – Not Available

Appendix C-3
Broussard J.E. Etal-1 Well Schematic
API 4224502194
Rose Carbon Capture and Storage Project
ExxonMobil Low Carbon Solutions Onshore Storage LLC
Jefferson County, TX

ERM

Appendix C-4 Aeromagnetic Survey Technical Report

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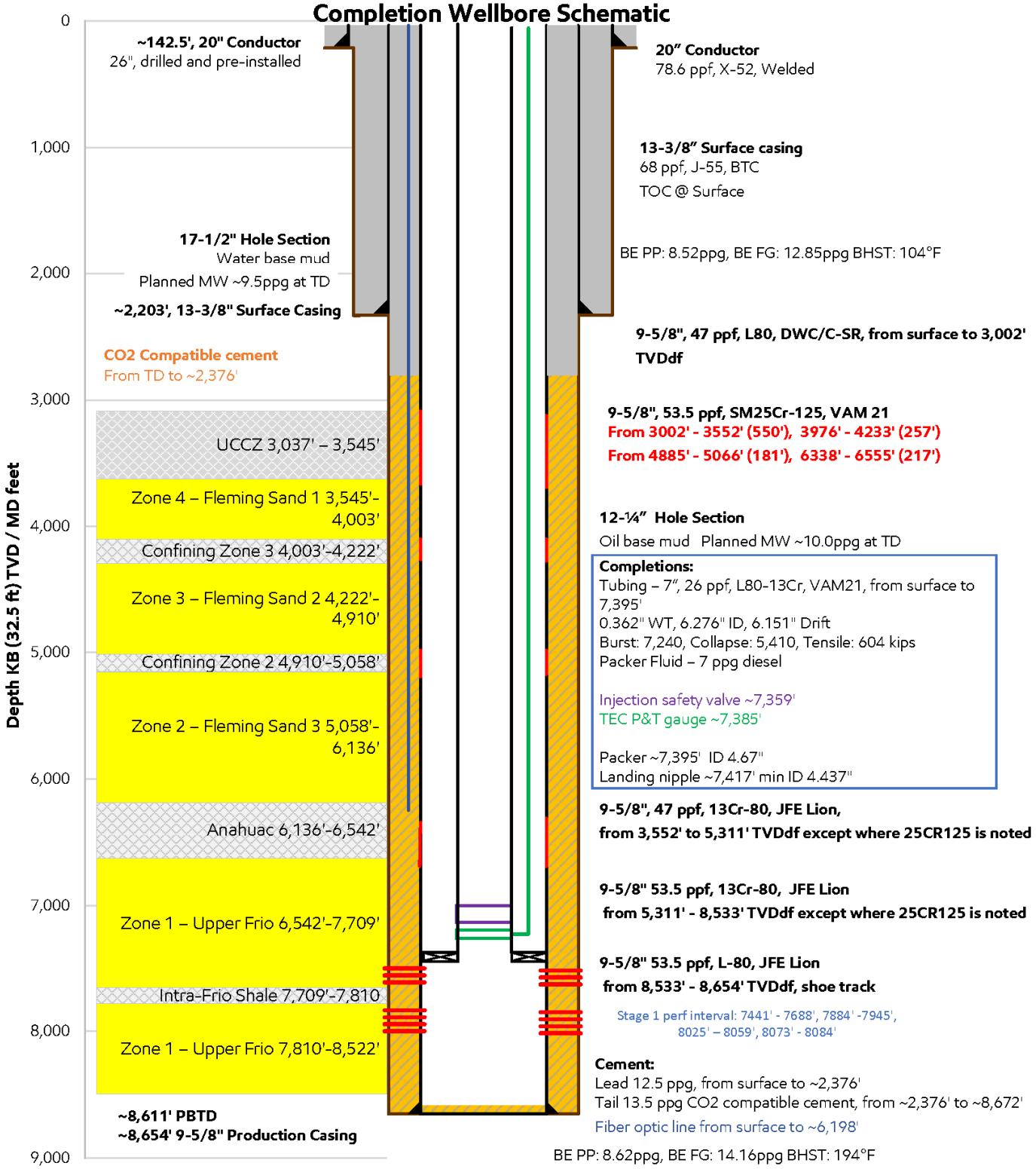
Claimed as PBI

Appendix C-5: Artificial Penetration Records

4224532913 Labelle Properties Ltd No. 1 (Rose CCS Project Injection Well No. 01)

CONFIDENTIAL BUSINESS INFORMATION

Labelle Properties Ltd No. 1
Rose CCS Project Injection Well No. 01
Completion Wellbore Schematic



ERM

Appendix D.1
Completions Wellbore Schematic for Rose CCS Project Injection Well No. 01
Rose Carbon Capture and Storage Project
ExxonMobil Low Carbon Solutions Onshore Storage LLC
Jefferson County, TX

CONFIDENTIAL BUSINESS INFORMATION

API No. 42-245-32913
Drilling Permit # 898448
SWR Exception

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

APPLICATION FOR PERMIT TO DRILL, RECOMPLETE, OR RE-ENTER

This facsimile W-1 was generated electronically from data submitted to the RRC.
A certification of the automated data is available in the RRC's Austin office.

FORM W-1 07/2004

Permit Status: Approved

1. RRC Operator No.: 101256

2. Operator's Name (as shown on form P-5, Organization Report): EXXONMOBIL LOW C SOL ON STOR LLC

3. Operator Address (include street, city, state, zip): ATTN EDWARD E GRAHAM, 22777 SPRINGWOODS VILLAGE PKWY, SPRING, TX 77389-0000

4. Lease Name: LABELLE PROPERTIES LTD

5. Well No.: 1

GENERAL INFORMATION

6. Purpose of filing (mark ALL appropriate boxes): [X] New Drill [ ] Recompletion [ ] Reclass [ ] Field Transfer [ ] Re-Enter [ ] Amended [ ] Amended as Drilled (BHL) (Also File Form W-1D)

7. Wellbore Profile (mark ALL appropriate boxes): [X] Vertical [ ] Horizontal (Also File Form W-1H) [ ] Directional (Also File Form W-1D) [ ] Sidetrack

8. Total Depth: 10000

9. Do you have the right to develop the minerals under any right-of-way ? [X] Yes [ ] No

10. Is this well subject to Statewide Rule 36 (hydrogen sulfide area)? [ ] Yes [X] No

SURFACE LOCATION AND ACREAGE INFORMATION

11. RRC District No.: 03

12. County: JEFFERSON

13. Surface Location [X] Land [ ] Bay/Estuary [ ] Inland Waterway [ ] Offshore

14. This well is to be located 4.5 miles in a SE direction from China which is the nearest town in the county of the well site.

15. Section: 42

16. Block:

17. Survey: T&NO RR CO/STARK, W L

18. Abstract No.: A-874

19. Distance to nearest lease line: ft.

20. Number of contiguous acres in lease, pooled unit, or unitized tract: 569.27

21. Lease Perpendiculars: 371 ft from the NORTH line and 2016 ft from the WEST line.

22. Survey Perpendiculars: 371 ft from the NORTH line and 2016 ft from the WEST line.

23. Is this a pooled unit? [ ] Yes [X] No

24. Unitization Docket No:

25. Are you applying for Substandard Acreage Field? [ ] Yes (attach Form W-1A) [X] No

FIELD INFORMATION — List all fields of anticipated completion including Wildcat. List one zone per line.

26. RRC District No.	27. Field No.	28. Field Name (exactly as shown in RRC records)	29. Well Type	30. Completion Depth	31. Distance to Nearest Well in this Reservoir	32. Number of Wells on this lease in this Reservoir
03	00006001	WILDCAT	Exploratory Test Well	8700	0.00	1

BOTTOMHOLE LOCATION INFORMATION is required for DIRECTIONAL, HORIZONTAL, AND AMENDED AS DRILLED PERMIT APPLICATIONS

Remarks
See W1 Comments attached

Certificate:
I certify that information stated in this application is true and complete, to the best of my knowledge.

Josh Calkin — Name of filer
Mar 27, 2024 — Date submitted

(281)702-5537 — Phone
Josh.Calkin@erm.com — E-mail Address (OPTIONAL)

RRC Use Only Data Validation Time Stamp: Mar 26, 2025 1:44 PM(Current Version)

CONFIDENTIAL BUSINESS INFORMATION

Permit Status: Approved

The RRC has not approved this application. Duplication or distribution of information is at the user's own risk.

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

APPLICATION FOR PERMIT TO DRILL, RECOMPLETE, OR RE-ENTER

This facsimile W-1 was generated electronically from data submitted to the RRC. A certification of the automated data is available in the RRC's Austin office.

W-1 Comments

Permit # 898448

Approved Date: Apr 05, 2024

[RRC STAFF Mar 28, 2024 4:28 PM]: There have been problems identified with this permit (see problem letter attachment). Notification sent.; [RRC STAFF Apr 4, 2024 9:05 AM]: Problems identified with this permit are resolved.; [RRC STAFF Apr 4, 2024 9:06 AM]: Per Joshua Calkin, "This well is being drilled as a stratigraphic well to gather data. At a future date, the well may be re-completed on a future date for injection."; [RRC STAFF Apr 4, 2024 9:06 AM]: Amended plat uploaded; [RRC STAFF Apr 4, 2024 9:24 AM]: There have been problems identified with this permit (see problem letter attachment). Notification sent.; [RRC STAFF Apr 5, 2024 8:06 AM]: Problems identified with this permit are resolved.; [RRC STAFF Apr 5, 2024 8:07 AM]: Per phone conversation with Josh Calkin, this is not a pooled unit.; [RRC STAFF Apr 5, 2024 8:12 AM]: Corrected acreage from 600 acres to 569.27 acres per plat and problem response from filer.

CONFIDENTIAL BUSINESS INFORMATION

Railroad Commission of Texas

PERMIT TO DRILL, RE-COMPLETE, OR RE-ENTER ON REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

CONDITIONS AND INSTRUCTIONS

Permit Invalidation. It is the operator's responsibility to make sure that the permitted location complies with Commission density and spacing rules in effect on the spud date. The permit becomes invalid automatically if, because of a field rule change or the drilling of another well, the stated location is not in compliance with Commission field rules on the spud date. If this occurs, application for an exception to Statewide Rules 37 and 38 must be made and a special permit granted prior to spudding. Failure to do so may result in an allowable not being assigned and/or enforcement procedures being initiated.

Notice Requirements. Per H.B 630, signed May 8, 2007, the operator is required to provide notice to the surface owner no later than the 15th business day after the Commission issues a permit to drill. Please refer to subchapter Q Sec. 91.751-91.755 of the Texas Natural Resources Code for applicability.

Permit expiration. This permit expires two (2) years from the date of issuance shown on the original permit. The permit period will not be extended.

Drilling Permit Number. The drilling permit number shown on the permit MUST be given as a reference with any notification to the district (see below), correspondence, or application concerning this permit.

Rule 37 Exception Permits. This Statewide Rule 37 exception permit is granted under either provision Rule 37 (h)(2)(A) or 37(h)(2)(B). Be advised that a permit granted under Rule 37(h)(2)(A), notice of application, is subject to the General Rules of Practice and Procedures and if a protest is received under Section 1.3, "Filing of Documents," and/or Section 1.4, "Computation of Time," the permit may be deemed invalid.

Before Drilling

Fresh Water Sand Protection. The operator must set and cement sufficient surface casing to protect all usable-quality water, as defined by the Railroad Commission of Texas (RRC) Groundwater Advisory Unit (GWAU). Before drilling a well, the operator must obtain a letter from the Railroad Commission of Texas stating the depth to which water needs protection, Write: Railroad Commission of Texas, Groundwater Advisory Unit (GWAU), P.O. Box 12967, Austin, TX 78711-3087. File a copy of the letter with the appropriate district office.

Accessing the Well Site. If an OPERATOR, well equipment TRANSPORTER or WELL service provider must access the well site from a roadway on the state highway system (Interstate, U.S. Highway, State Highway, Farm-to-Market Road, Ranch-to-Market Road, etc.), an access permit is required from TxDOT. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

Water Transport to Well Site. If an operator intends to transport water to the well site through a temporary pipeline laid above ground on the state's right-of-way, an additional TxDOT permit is required. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

*NOTIFICATION

The operator is **REQUIRED** to notify the district office when setting surface casing, intermediate casing, and production casing, or when plugging a dry hole. The district office **MUST** also be notified if the operator intends to re-enter a plugged well or re-complete a well into a different regulatory field. Time requirements are given below. The drilling permit number **MUST** be given with such notifications.

During Drilling

Permit at Drilling Site. A copy of the Form W-1 Drilling Permit Application, the location plat, a copy of Statewide Rule 13 alternate surface casing setting depth approval from the district office, if applicable, and this drilling permit must be kept at the permitted well site throughout drilling operations.

***Notification of Setting Casing.** The operator MUST call in notification to the appropriate district office (phone number shown the on permit) a minimum of eight (8) hours prior to the setting of surface casing, intermediate casing, AND production casing. The individual giving notification MUST be able to advise the district office of the drilling permit number.

***Notification of Re-completion/Re-entry.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of eight (8) hours prior to the initiation of drilling or re-completion operations. The individual giving notification MUST be able to advise the district office of the drilling permit number.

Completion and Plugging Reports

Hydraulic Fracture Stimulation using Diesel Fuel: Most operators in Texas do not use diesel fuel in hydraulic fracturing fluids. Section 322 of the Energy Policy Act of 2005 amended the Underground Injection Control (UIC) portion of the federal Safe Drinking Water Act (42 USC 300h(d)) to define "underground Injection" to *EXCLUDE* " ...the underground injection of fluids or propping agents (*other than diesel fuels*) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities." (italic and underlining added.) Therefore, hydraulic fracturing may be subject to regulation under the federal UIC regulations if diesel fuel is injected or used as a propping agent. EPA defined "diesel fuel" using the following five (5) Chemical Abstract Service numbers: 68334-30-5 Primary Name: Fuels, diesel; 68476-34-6 Primary Name: Fuels, diesel, No. 2; 68476-30-2 Primary Name: Fuel oil No. 2; 68476-31-3 Primary Name: Fuel oil, No. 4; and 8008-20-6 Primary Name: Kerosene. As a result, an injection well permit would be required before performing hydraulic fracture stimulation using diesel fuel as defined by EPA on any well in Texas. Hydraulic fracture stimulation using diesel fuel as defined by EPA on a well in Texas without an injection well permit could result in enforcement action.

Producing Well. Statewide Rule 16 states that the operator of a well shall file with the Commission the appropriate completion report within ninety (90) days after completion of the well or within one hundred and fifty (150) days after the date on which the drilling operation is completed, whichever is earlier. Completion of the well in a field authorized by this permit voids the permit for all other fields included in the permit unless the operator indicates on the initial completion report that the well is to be a dual or multiple completion and promptly submits an application for multiple completion. All zones are required to be completed before the expiration date on the existing permit. Statewide Rule 40(d) requires that upon successful completion of a well in the same reservoir as any other well previously assigned the same acreage, proration plats and P-15s or P-16s (if required) or a lease plat and P-16 must be submitted with no double assignment of acreage unless authorized by rule.

Dry or Noncommercial Hole. Statewide Rule 14(b)(2) prohibits suspension of operations on each dry or non-commercial well without plugging unless the hole is cased and the casing is cemented in compliance with Commission rules. If properly cased, Statewide Rule 14(b)(2) requires that plugging operations must begin within a period of one (1) year after drilling or operations have ceased. Plugging operations must proceed with due diligence until completed. An extension to the one-year plugging requirement may be granted under the provisions stated in Statewide Rule 14(b)(2).

Intention to Plug. The operator must file a Form W-3A (Notice of Intention to Plug and Abandon) with the district office at least five (5) days prior to beginning plugging operations. If, however, a drilling rig is already at work on location and ready to begin plugging operations, the district director or the director's delegate may waive this requirement upon request, and verbally approve the proposed plugging procedures.

***Notification of Plugging a Dry Hole.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of four (4) hours prior to beginning plugging operations. The individual giving the notification MUST be able to advise the district office of the drilling permit number and all water protection depths for that location as stated in the Groundwater Advisory Unit letter.

DIRECT INQUIRIES TO: DRILLING PERMIT SECTION, OIL AND GAS DIVISION

PHONE
(512) 463-6751

MAIL:
PO Box 12967
Austin, Texas, 78711-2967

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER	DATE PERMIT ISSUED OR AMENDED	DISTRICT
898448	Apr 05, 2024	* 03
API NUMBER	**FORM W-1 RECEIVED**	**COUNTY**
42-245-32913	Mar 27, 2024	JEFFERSON
TYPE OF OPERATION	**WELLBORE PROFILE(S)**	**ACRES**
NEW DRILL	Vertical	569.27

OPERATOR 101256

EXXONMOBIL LOW C SOL ON STOR LLC

ATTN EDWARD E GRAHAM
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389-0000

NOTICE

This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored.

District Office Telephone No:
(713) 869-5001

LEASE NAME	WELL NUMBER
LABELLE PROPERTIES LTD	1
LOCATION	**TOTAL DEPTH**
4.5 miles SE direction from CHINA	10000

Section, Block and/or Survey

SECTION 42 BLOCK ABSTRACT 874

SURVEY T&NO RR CO/STARK, W L

DISTANCE TO SURVEY LINES	DISTANCE TO NEAREST LEASE LINE
371 ft. NORTH 2016 ft. WEST	ft.
DISTANCE TO LEASE LINES	**DISTANCE TO NEAREST WELL ON LEASE**
371 ft. NORTH 2016 ft. WEST	See FIELD(s) Below

FIELD(s) and LIMITATIONS:

* SEE FIELD DISTRICT FOR REPORTING PURPOSES *

FIELD NAME / LEASE NAME	ACRES / NEAREST LEASE	DEPTH	WELL # / NEAREST WE	DIST
WILDCAT	569.27	8,700	1	03
LABELLE PROPERTIES LTD			0	

RESTRICTIONS: For exploratory test only

THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS

This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.

This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

SWR #13 Formation Data

JEFFERSON (245) County

Formation	Remarks	Geological Order	Effective Date
LAFAYETTE	disposal	1	12/17/2013
CAPROCK	disposal	2	12/17/2013
SPINDLETOP SALT DOME	disposal	3	12/17/2013
FANNETT SALT DOME	disposal	4	12/17/2013
BIG HILL SALT DOME	disposal	5	12/17/2013
PLEISTOCENE-LISSIE	disposal	6	12/17/2013
MIOCENE	disposal	7	12/17/2013
FRIO	disposal	8	12/17/2013
MARINULINA	disposal	9	12/17/2013
HETEROSTEGINA	disposal	10	12/17/2013

The above list may not be all inclusive, and may also include formations that do not intersect all wellbores. The listing order of the Formation information reflects the general stratigraphic order and relative geologic age. This is a dynamic list subject to updates and revisions. It is the operator's responsibility to make sure that at the time of spudding the well the most current list is being referenced. Refer to the RRC website at the following address for the most recent information.
http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info

CONFIDENTIAL BUSINESS INFORMATION

GROUNDWATER PROTECTION DETERMINATION

Form GW-2

Groundwater Advisory Unit

Date Issued:	31 December 2024	**GAU Number:**	389625

Attention:	EXXONMOBIL LOW C SOL ON ATTN EDWARD E GRAHAM SPRING, TX 77389	**API Number:**	24532913
		County:	JEFFERSON
		Lease Name:	LaBelle Properties, Ltd
		Lease Number:	
Operator No.:	101256	**Well Number:**	1
		Total Vertical	10000
		Latitude:	29.999463
		Longitude:	-94.284922
		Datum:	NAD27

Purpose: Injection into Non-producing Zone (W-14)

Location: Survey-T&NO RR CO/STARK, W L; Abstract-874; Section-42

To protect usable-quality groundwater at this location, the Groundwater Advisory Unit of the Railroad Commission of Texas recommends:

This Initial Recommendation is for the purpose of Class VI injection only.

Usable-quality water occurs from the land surface to a depth of 1,225 feet. Moreover, the interval from the land surface to a depth of 700 feet contains water of superior quality which must be isolated from water in underlying beds.

The BASE OF UNDERGROUND SOURCES OF DRINKING WATER (USDW) is estimated to occur at a depth of 1,450 feet at the site of the referenced well.

*(SIP Purpose Only) Water Code Section 27.046(a) requires the GAU to issue a GW-2 letter containing Non-Endangerment language prior to issuance of a class VI permit. An additional letter will be required before SIP can issue a final permit because this letter is silent on endangerment of fresh water. *

Note: Unless stated otherwise, this recommendation is intended to apply to all wells drilled within 200 feet of the subject well. Unless stated otherwise, this recommendation is for normal drilling, production, and plugging operations only.

This determination is based on information provided when the application was submitted on 12/18/2024. If the location information has changed, you must contact the Groundwater Advisory Unit, and submit a new application if necessary. If you have questions, please contact us at 512-463-2741 or gau@rrc.texas.gov.

Groundwater Advisory Unit, Oil and Gas Division

CONFIDENTIAL BUSINESS INFORMATION

GROUNDWATER PROTECTION DETERMINATION

Form GW-2

Groundwater Advisory Unit

Date Issued:	28 January 2025	**GAU Number:**	390197

Attention:	EXXONMOBIL LOW C SOL ON ATTN EDWARD E GRAHAM SPRING, TX 77389	**API Number:**	24532913
		County:	JEFFERSON
		Lease Name:	LaBelle Properties, Ltd
		Lease Number:	
Operator No.:	101256	**Well Number:**	1
		Total Vertical	10000
		Latitude:	29.999463
		Longitude:	-94.284922
		Datum:	NAD27

Purpose: Injection into Non-producing Zone (W-14)

Location: Survey-T&NO RR CO/STARK, W L; Abstract-874; Section-42

To protect usable-quality groundwater at this location, the Groundwater Advisory Unit of the Railroad Commission of Texas recommends:

This Recommendation is for the purpose of Class VI injection only.

Usable-quality water occurs from the land surface to a depth of 1200 feet. Moreover, the interval from the land surface to a depth of 700 feet contains water of superior quality which must be isolated from water in underlying beds.

The BASE OF UNDERGROUND SOURCES OF DRINKING WATER (USDW) is estimated to occur at a depth of 1450 feet at the site of the referenced well.

This recommendation is applicable to an area extent within a radius of 1.0 mile of this location.

The vertical geological isolation from both bases of usable quality water and underground source of drinking water is at 3,200 feet in TVD depth (for UIC Purpose Only).

Injection into the subsurface interval from 3,400 to 8,600 feet in TVD depth, as proposed in the submitted W14 (Class VI) application dated on December 18th of 2024 , WILL NOT ENDANGER the PROTECTED WATER STRATA geologically at the proposed location in this area (for UIC Purpose Only).

Note: Unless stated otherwise, this recommendation is intended to apply to all wells drilled within 200 feet of the subject well. Unless stated otherwise, this recommendation is for normal drilling, production, and plugging operations only.

This determination is based on information provided when the application was submitted on 01/22/2025. If the location information has changed, you must contact the Groundwater Advisory Unit, and submit a new application if necessary. If you have questions, please contact us at 512-463-2741 or gau@rrc.texas.gov.

Groundwater Advisory Unit, Oil and Gas Division

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

Form W-2

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

Status: Approved
Date: 02/12/2025
Tracking No.: 326094

OIL WELL POTENTIAL TEST, COMPLETION OR RECOMPLETION REPORT,

OPERATOR INFORMATION

Operator EXXONMOBIL LOW C SOL ON STOR LLC **Operator** 101256
Operator ATTN EDWARD E GRAHAM 22777 SPRINGWOODS VILLAGE PKWY SPRING, TX 77389-0000

WELL INFORMATION

API 42-245-32913 **County:** JEFFERSON
Well No.: 1 **RRC District** 03
Lease LABELLE PROPERTIES LTD **Field** WILDCAT
RRC Lease 28199 **Field No.:** 00006001
Location Section: 42, Block: , Survey: T&NO RR CO/STARK, W L, Abstract: 874

Latitude 29 **Longitud** -94
This well is 4.5 **miles in a** SE
direction from CHINA,
which is the nearest town in the

FILING INFORMATION

Purpose of Well Record Only
Type of New Well
Well Type: Shut-In Producer **Completion or Recompletion** 10/03/2024

Type of Permit	Date	Permit No.
Permit to Drill, Plug Back, or	04/05/2024	898448
Rule 37 Exception		
Fluid Injection		
O&G Waste Disposal		
Other:		

COMPLETION INFORMATION

Spud 06/23/2024 **Date of first production after rig** 10/03/2024
Date plug back, deepening, drilling operation 06/23/2024 **Date plug back, deepening, recompletion, drilling operation** 10/03/2024
Number of producing wells on this lease this field (reservoir) including this 0 **Distance to nearest well in lease & reservoir** 0.0
Total number of acres in 569.27 **Elevation** 23 GL
Total depth TVD 8672 **Total depth MD**
Plug back depth TVD 8612 **Plug back depth MD**
Was directional survey made other inclination (Form W- No **Rotation time within surface casing Is Cementing Affidavit (Form W-15)** 42.0 Yes
Recompletion or No **Multiple** No
Type(s) of electric or other log(s) Gamma Ray (MWD)
Electric Log Other Description:

Location of well, relative to nearest lease of lease on which this well is 371.0 **Feet from the** North **Line and** 2016.0 **Feet from the** West **Line of the** LABELLE PROPERTIES LTD **Lease.** **Off Lease :** No

FORMER FIELD (WITH RESERVOIR) & GAS ID OR OIL LEASE NO.

Field & Reservoir	Gas ID or Oil Lease	Well No.	Prior Service Type

PACKET: N/A

W2: N/A

FOR NEW DRILL OR RE-ENTRY, SURFACE CASING DEPTH DETERMINED BY:

GAU Groundwater Protection Determination		**Depth**	1200.0	**Date**	03/07/2024
SWR 13 Exception		**Depth**	2230.0		

INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION

Date of		**Production**	
Number of hours	24	**Choke**	
Was swab used during this	No	**Oil produced prior to**	

PRODUCTION DURING TEST PERIOD:

Oil		**Gas**	
Gas - Oil	0	**Flowing Tubing**	
Water			

CALCULATED 24-HOUR RATE

Oil		**Gas**	
Oil Gravity - API - 60.:		**Casing**	
Water			

CASING RECORD

Ro	Type of Casing	Casing Size (in.)	Hole Size	Setting Depth	Multi - Stage Tool	Multi - Stage Shoe	Cement Class	Cement Amoun	Slurry Volume (cu.	Top of Cement (ft.)	TOC Determined By
1	Surface	13 3/8	17 1/2	2203			H	1204	2382.0	0	Circulated to Surface
2	Conductor	20	26	110			A	225	349.0	0	Circulated to Surface
3	Conventional Production	9 5/8	12 1/4	8654			H	2035	3829.3	0	Circulated to Surface

LINER RECORD

Ro	Liner Size	Hole Size	Liner Top	Liner Bottom	Cement Class	Cement Amoun	Slurry Volume (cu.	Top of Cement (ft.)	TOC Determined

N/A

TUBING RECORD

Ro	Size (in.)	Depth Size (ft.)	Packer Depth (ft.)/Type
1	7	7395	7395 / WIRELINE SET, PERMANENT

PRODUCING/INJECTION/DISPOSAL INTERVAL

Ro	Open hole?	From (ft.)	To (ft.)
1	No	L 7441	7688.0
2	No	L 7884	7945.0
3	No	L 8073	8084.0
4	No	L 8025	8059.0

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC.

Was hydraulic fracturing treatment No

Is well equipped with a downhole sleeve? No

If yes, actuation pressure

Production casing test pressure (PSIG) hydraulic fracturing

Actual maximum pressure (PSIG) during fracturin

Has the hydraulic fracturing fluid disclosure been No

Ro	Type of Operation	Amount and Kind of Material Used	Depth Interval (ft.)	
1	Other	PERFORATIONS	7441	8059

FORMATION RECORD

Formations	Encountere	Depth TVD	Depth MD	Is formation	Remarks
LAFAYETTE - DISPOSAL	No			No	MUD LOGGING AND CUTTING SAMPLES WERE NOT COLLECTED IN THE SHALLOW HOLE SECTION. THEREFORE, SHALLOW FORMATIONS ENCOUNTERED COULD NOT BE CONFIRMED AS LAFAYETTE AND/OR PLEISTOCENE.
CAPROCK - DISPOSAL	No			No	NOT ENCOUNTERED
SPINDLETOP SALT DOME - DISPOSAL	No			No	NOT ENCOUNTERED
FANNETT SALT DOME - DISPOSAL	No			No	NOT ENCOUNTERED
BIG HILL SALT DOME - DISPOSAL	No			No	NOT ENCOUNTERED
PLEISTOCENE-LISSIE - DISPOSAL	No			No	MUD LOGGING AND CUTTING SAMPLES WERE NOT COLLECTED IN THE SHALLOW HOLE SECTION. THEREFORE, SHALLOW FORMATIONS ENCOUNTERED COULD NOT BE CONFIRMED AS LAFAYETTE AND/OR PLEISTOCENE.
MIOCENE - DISPOSAL	Yes	3545.0	3545.0	Yes	LOGGED
FRIO - DISPOSAL	Yes	6542.0	6542.0	Yes	LOGGED, PERFORATIONS IN THE LOWER FRIO SAND FROM 7,441'-8,084'
MARINULINA - DISPOSAL	Yes	6136.1	6136.0	Yes	LOGGED
HETEROSTEGINA - DISPOSAL	Yes	6231.0	6290.0	Yes	LOGGED

Do the producing interval of this well produce H2S with a concentration in excess of 100 ppm No

Is the completion being downhole commingled No

REMARKS

THE WELL WAS PERFORATED AND SHUT IN. THIS WELL HAS NOT PRODUCED.

RRC REMARKS

PUBLIC COMMENTS:

CASING RECORD :

NONE.

TUBING RECORD:

PRODUCING/INJECTION/DISPOSAL INTERVAL :

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC. :

POTENTIAL TEST DATA:

OPERATOR'S CERTIFICATION

Printed	Josh Calkin	**Title:**	
Telephone	(281) 702-5537	**Date**	02/11/2025

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name: Exxon Mobil low Carbon Solutions	Operator P-5 No.: 101256
Cementer Name: Halliburton	Cementer P-5 No.: 347151

WELL INFORMATION

District No.: 3	County: Jefferson	
Well No.: 1	API No.: 42-245-32913	Drilling Permit No.: 898448
Lease Name: Labelle Properties LTD	Lease No.:	
Field Name: Wildcat	Field No.:	

I. CASING CEMENTING DATA

Type of casing: ☐ Conductor ☒ Surface ☐ Intermediate ☐ Liner ☐ Production

Drilled hole size (in.): 17 1/2"	Depth of drilled hole (ft.): 2,213	Est. % wash-out or hole enlargement: 20
Size of casing in O.D. (in.): 13 3/8"	Casing weight (lbs/ft) and grade: 68# J55	No. of centralizers used: 18
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☒ YES ☐ NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 2,203	Top of liner (ft.):
		Setting depth liner (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.): Surface	Cementing date: 6/25/2024

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	785	XA	SEE REMARKS	1848	1486
2	419	H	SEE REMARKS	534	716
3					
Total	1204			2382	2202

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth shoe (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth tool (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS

EXXON, LABELLE PROPERTIES, LABELLE PROPERTIES LTC #1
SLURRY 1: ECONO CEM
SKLURRY 2: HAL CEM

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

DAVID NGUYEN, SERVICE SUPERVISOR	Halliburton	Daniel Nguyen	
Name and title of cementer's representative	Cementing Company	Signature	
4720 Industrial	Bossier City, LA 71112	903-986-5096	6/25/24
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

James Harvey	ops. supervisor		
Typed or printed name of operator's representative	Title	Signature	
22777 Springwoods Village	Spring TX 77389	512-949-8272	6/25/24
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

A. **What to file:** An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on one form.

The Form W-15 should be filed with the Form W-3, Plugging Record, unless the Form W-3 is signed by the cementing company representative. When reporting dry holes, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.

B. **How to file:** An oil and gas completion report and Form W-15 may be filed online using the Commission's Online System (https://webapps.rrc.state.tx.us/security/login.do) or a paper copy of the form may be mailed to the Commission in Austin (P.O. Box 12967, Austin, Texas 78711-2967).

C. **Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.

To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 (http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.

D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing **and** Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name: EXXONMOBIL LOW C SOL ON STOR LLC	**Operator P-5 No.:**
Cementer Name: DOC ENERGY SERVICES INC	**Cementer P-5 No.:** 221887

WELL INFORMATION

District No.: 3	**County:** JEFFERSON	
Well No.: 1	**API No.:** 42-245-32913	**Drilling Permit No.:** 898448
Lease Name: LABELLE PROPERTIES LTD	**Lease No.:**	
Field Name: Wildcat	**Field No.:**	

I. CASING CEMENTING DATA

Type of casing: ☑ Conductor ☐ Surface ☐ Intermediate ☐ Liner ☐ Production

Drilled hole size (in.): 26	**Depth of drilled hole (ft.):** 110	**Est. % wash-out or hole enlargement:** 35
Size of casing in O.D. (in.): 20	**Casing weight (lbs/ft) and grade:** 78.6 ppf X-52 (Welded)	**No. of centralizers used:**
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☑ YES ☐ NO If no for surface casing, explain in Remarks.	**Setting depth shoe (ft.):** 110	**Top of liner (ft.):** / **Setting depth liner (ft.):**
Hrs. waiting on cement before drill-out:	**Calculated top of cement (ft.):** 0	**Cementing date:** 6/14/2024

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	225	A	4% GELL & 2% CACL2	349	167
2					
3					
Total	225			349	167

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	**Depth of drilled hole (ft.):**	**Est. % wash-out or hole enlargement:**
Size of casing in O.D. (in.):	**Casing weight (lbs/ft) and grade:**	**No. of centralizers used:**
Tapered string drilled hole size (in.) Upper: Lower:	**Tapered string depth of drilled hole (ft.)** Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	**Tapered string casing weight(lbs/ft) and grade** Upper: Lower:	**Tapered string no. of centralizers used** Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		**Setting depth shoe (ft.):**
Hrs. waiting on cement before drill-out:	**Calculated top of cement (ft.):**	**Cementing date:**

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	**Depth of drilled hole (ft.):**	**Est. % wash-out or hole enlargement:**
Size of casing in O.D. (in.):	**Casing weight (lbs/ft) and grade:**	**No. of centralizers used:**
Tapered string drilled hole size (in.) Upper: Lower:	**Tapered string depth of drilled hole (ft.)** Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	**Tapered string casing weight(lbs/ft) and grade** Upper: Lower:	**Tapered string no. of centralizers used** Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		**Setting depth tool (ft.):**
Hrs. waiting on cement before drill-out:	**Calculated top of cement (ft.):**	**Cementing date:**

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS

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JERRY T MOON JR	DOC ENERGY SERVICES INC		
Name and title of cementer's representative	Cementing Company	Signature	
P.O.BOX 580	OIL CITY, LA 71061	318-995-7126	6/19/2024
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

MICHAEL MATHIS, EXXONMOBIL	WELL OPS SUPERVISOR				
Typed or printed name of operator's representative	Title			Signature	
22777 Springwoods Village	Spring	TX	77389	512-949-8272	06/25/2024
Address	City,	State,	Zip Code	Tel: Area Code Number	Date: mo. day yr.

Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

A. **What to file:** An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on one form.

The Form W-15 should be filed with the Form W-3, Plugging Record, unless the Form W-3 is signed by the cementing company representative. When reporting dry holes, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.

B. **How to file:** An oil and gas completion report and Form W-15 may be filed online using the Commission's Online System (https://webapps.rrc.state.tx.us/security/login.do) or a paper copy of the form may be mailed to the Commission in Austin (P.O. Box 12967, Austin, Texas 78711-2967).

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D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing **and** Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name: Exxon Mobil Low Carbon Solution		Operator P-5 No.: 101256	
Cementer Name: Halliburton		Cementer P-5 No.: 347151	

WELL INFORMATION

District No.: 03		County: Jefferson	
Well No.: 1		API No.: 42-245-32913	Drilling Permit No.: 898448
Lease Name: Labelle Properties LTD		Lease No.:	
Field Name: Wildcat		Field No.:	

I. CASING CEMENTING DATA

Type of casing: ☐ Conductor ☐ Surface ☐ Intermediate ☐ Liner ☑ Production

Drilled hole size (in.): 12.25"	Depth of drilled hole (ft.): 8,672'	Est. % wash-out or hole enlargement: 25%	
Size of casing in O.D. (in.): 9 5/8"	Casing weight (lbs/ft) and grade: 47/53.50 L80/CR13/CR25	No. of centralizers used: 150	
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☑ YES ☐ NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 8,654'	Top of liner (ft.):	
		Setting depth liner (ft.):	
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.): 0	Cementing date: 7/11/2024	

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	775	H	SEE RAMARKS	1395	4012
2	1260	H	SEE REMARKS	2434.32	6301
3					
Total	2035			3829.32	10313

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth shoe (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth tool (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
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CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS

909436927,EXXONMOBIL LOW CARBON-EBUS,LABELLE PROPERTIES LTD,1,PRODUCTION:
SLURRY 1:CorossaCem , SLURRY 2:CorossaLock

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ZOUHIR ROUBACHE	Halliburton			
Name and title of cementer's representative	Cementing Company	Signature		
4720 Industrial	Bossier City, LA 71112	903-986-5096		7/11/2024
Address	City, State, Zip Code	Tel: Area Code	Number	Date: mo. day yr.

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James Harvey	Drlg. OPS. Supervisor			
Typed or printed name of operator's representative	Title	Signature		
22777 Spring Woods Village	Spring Tx 77389	512-949-8272		7/13/24
Address	City, State, Zip Code	Tel: Area Code	Number	Date: mo. day yr.

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D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing **and** Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

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G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON | Sperry Drilling

DGR / EWR-P4 / DIR

Powered by INSITE™

1 : 500

MD Phase Attenuation Log

Country : USA
Field : WILDCAT
Location : Lat: 29° 59' 58.84" North Long: 94° 17' 6.39" West
Well : LABELLE PROPERTIES LTD 1
Company : EXXONMOBIL LOW C SOL ON STOR LL
Rig : NABORS X33

Company	: EXXONMOBIL LOW C SOL ON STOR LL
Rig	: NABORS X33
Well	: LABELLE PROPERTIES LTD 1
Field	: WILDCAT
Country	: USA
API Number	: 4224532913

LOCATION

Latitude : 29° 59' 58.84" North
Longitude : 94° 17' 6.39" West

StatePlane X = 3,460,521.210 usft
StatePlane Y = 13,941,119.320 usft

Other Services

Permanent Datum : Ground Level
Elevation : 26.60 ft
Log Measured From : Drill Floor
32.52 ft Above Permanent Datum
Drilling Measured From : Drill Floor

MD LOG

Elev. KB
DF 59.12 ft
GL 26.60 ft
WD

Depth Logged : 142.00 ft To 8,672.00 ft
Date Logged : 23-Jun-24 To 01-Jul-24
Total Depth MD : 8,672.00 ft TVD : 8,671.78 ft
Spud Date : 22-Jun-24

Unit No. :
Job No. :LF-XX-0909034765
Plot Type : Final
Plot Date : 24-Jul-24

Run No.	Borehole Record (MD)			Size	Casing Record (MD)		
	Size	From	To		Weight	From	To
100	17.500 in	142.00 ft	2,213.00 ft	20.000 in	94.00 lbpf	SURFACE	142.00 ft
200	12.250 in	2,213.00 ft	3,565.00 ft	13.375 in	68.00 lbpf	SURFACE	2,203.00 ft
201	12.250 in	3,565.00 ft	3,626.00 ft				
300	12.250 in	3,626.00 ft	7,481.00 ft				
301	12.250 in	7,481.00 ft	7,541.00 ft				
400	12.250 in	7,541.00 ft	8,672.00 ft				

WELL INFORMATION

MWD Run Number	100	200	300	400	
Date run completed	24-Jun-24	27-Jun-24	30-Jun-24	02-Jul-24	
Rig Bit Number	100	200	300	400	
Bit Size (in)	17.500	12.250	12.250	12.250	
Tool Nominal OD (in)	8.000	8.000	8.000	8.000	
Log Start Depth (MD, ft)	142.00	2,213.00	3,626.00	7,541.00	
Log End Depth (MD, ft)	2,213.00	3,565.00	7,481.00	8,672.00	
Drill or Wipe	Drill	Drill	Drill	Drill	
Drill/Wipe Start Date and Time	23-Jun-24 06:20	26-Jun-24 09:22	28-Jun-24 15:15	01-Jul-24 11:30	
Drill/Wipe End Date and Time	23-Jun-24 23:50	27-Jun-24 03:09	29-Jun-24 16:43	01-Jul-24 19:05	
Min Inc (deg) @ Depth (MD, ft)	0.06 @ 584.00	0.06 @ 3,400.00	0.00 @ 4,345.00	0.19 @ 8,031.00	
Max Inc (deg) @ Depth (MD, ft)	1.13 @ 1,237.00	0.67 @ 2,455.00	0.86 @ 7,189.00	0.57 @ 7,464.00	
Bit TFA(in2) / Bit Type	1.23 / GT65s	0.91 / HD65s	0.91 / HD65s	0.91 / HD65s	
Flow Rate (gpm)	700.00	650.00	650.00	750.00	
Max AV (fpm) / CV (fpm) @ MWD	84.0 / 260.0	105.9 / 105.9	182.0 / 358.0	213.0 / 540.0	
Fluid Type	Native/Spud Mud	Diesel Mud Base	Diesel Mud Base	Diesel Mud Base	
Density (ppg) / Viscosity (spqt)	8.60 / 31.00	9.80 / 65.00	9.90 / 58.00	10.20 / 56.00	
Filtrate CL (ppm)	1,100.00	44,000.00	49,000.00	66,000.00	
pH / API Filtrate (mptm)	8.30 / 9	N/A / 7	N/A / 7	N/A / 3	
PV (cP) / YP (lhf2)	2 / 4.00	17 / 12.00	19 / 11.00	25 / 18.00	
% Solids / % Sand	4.9 / .01	9.1 / N/A	9.7 / N/A	9.8 / 0.01	
% Oil / Oil:Water Ratio	0 / 0:100	53.5 / 63:37	59 / 67:33	58 / 65:35	
Rm @ Measured Temp (degF)	0.100 @ 74.00	N/A @ N/A	N/A @ N/A	N/A @ N/A	
Rmf @ Measured Temp (degF)	0.100 @ 74.00	N/A @ N/A	N/A @ N/A	N/A @ N/A	
Rmc @ Measured Temp (degF)	0.100 @ 74.00	N/A @ N/A	N/A @ N/A	N/A @ N/A	
Max Tool Temp (degF) / Source	113.18 / HCIM	141.41 / HCIM	158.00 / PCDC	176.00 / PCDC	
Rm @ Max Tool Temp (degF)	0.0673 @ 113.18	N/A @ 141.41	N/A @ 158.00	N/A @ 176.00	
Lead MWD Engineer	Thomas Shea	Thomas Shea	Thomas Shea	Thomas Shea	
Customer Representative	James Harvey	Mike Mathis	Mike Mathis	Mike Mathis	

SENSOR INFORMATION

Downhole Processor Information

Tool Type	HCIM	HCIM	HCIM	HCIM	
Software Version	98.43	98.43	98.43	98.43	
Sub Serial Number	11700362	11700362	11700362	11700362	
Insert Serial Number	11618726	11618726	11618726	11618726	
Date and Time Initialized	22-Jun-24 15:49	26-Jun-24 06:33	28-Jun-24 12:13	01-Jul-24 07:11	
Date and Time Read	23-Jun-24 19:41	27-Jun-24 09:17	30-Jun-24 01:03	02-Jul-24 10:40	
ECMB SW Version	N/A	N/A	N/A	N/A	

Directional Sensor Information

Tool Type	PCDC	PCDC	PCDC	PCDC	
Distance From Bit (ft)	39.96	70.27	70.27	70.29	
Software Version	6.43	6.43	6.43	6.43	
Sub Serial Number	10436639	10436639	10436639	10436639	
Sonde Serial Number	11902174	11902174	11902174	11902174	
Sensor ID Number	N/A	N/A	N/A	N/A	
Toolface Offset (deg)	0.00	230.30	230.30	230.30	

Gamma Ray Sensor Information

Tool Type	DGR	DGR	DGR	DGR	
Distance From Bit (ft)	24.09	59.50	59.50	59.49	
Recorded Sample Period (sec)	4	4	4	4	
Software Version	N/A	N/A	N/A	N/A	
Sub Serial Number	11618726	11618726	1161826	1161826	
Insert/Sonde Serial Number	11700362	11700362	11700362	11700362	

Resistivity Sensor Information

Tool Type	EWR-P4				
Distance From Bit (ft)	10.09				
Recorded Sample Period (sec)	4				
Software Version	1.51				
Sub Serial Number	11973885				
Receiver Insert Serial Number	11281932				
Transmitter Insert Serial Number	11193458				
Receiver Orientation	Down				

REMARKS

All depths are referenced to the driller's pipe tally.

DGXT - Gamma Ray formation exposure time
EWXT - Resistivity formation exposure time

Default 1:500 Log Smoothing:
Interval Resolution: 0.5ft
Window Interval:(+/-) 0.6ft
Gap Fill: 3.0ft

Archive Name: LABELLE_PROPERTIES_LTD_1_500MD_PHASE_ATTEN_142_8672

Plot Width: 8.25 in

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
Oil and Gas Division
Tracking No.: 326094

ELECTRIC LOG STATUS REPORT

This facsimile L-1 was generated electronically from data submitted to the RRC.

FORM L-1

Instructions

When to File Form L-1:
- with Forms G-1, W-2, and GT-1 for new and deepened gas, oil, and geothermal wells
- with Form W-3 for plugged dry holes
- when sending in a log which was held under a request for confidentiality and the period for confidentiality has not yet expired.

When is Form L-1 NOT required:
- with Forms W-2, G-1, and GT-1 filed for injection wells, disposal wells, water supply wells, service wells, re-test wells, re-classifications, and plugbacks of oil, gas or geothermal wells
- with Form W-3 for plugging of other than a dry hole

Where to File Form L-1:
- with the appropriate Commission district office

Filling out Form L-1:
- Section I and the signature section must be filled out for all wells
- complete only the appropriate part of Section II

Type of log required:
- any wireline survey run for the purpose of obtaining lithology, porosity, or resistivity information
- no more than one such log is required but it must be of the subject well
- if such log is NOT run on the subject well, do NOT substitute any other type of log; just select Section II, Part A below

SECTION I. IDENTIFICATION

Operator Name: EXXONMOBIL LOW C SOL ON STOR LLC	District No. 03	Completion Date: 10/03/2024
Field Name WILDCAT	Drilling Permit No. 898448	
Lease Name LABELLE PROPERTIES LTD	Lease/ID No. 28199	Well No. 1
County JEFFERSON	API No. 42- 245-32913	

SECTION II. LOG STATUS (Complete either A or B)

☐ A. BASIC ELECTRIC LOG NOT RUN

☒ B. BASIC ELECTRIC LOG RUN. (Select one)

☒ 1. Confidentiality is requested and a copy of the header for each log that has been run on the well is attached.

☐ 2. Confidentiality already granted on basic electric log covering this interval (applicable to deepened wells only).

☐ 3. Basic electric log covering this interval already on file with Commission (applicable to deepened wells only).

☐ 4. Log attached to (select one):

☐ (a) Form L-1 (this form). If the company/lease name on log is different from that shown in Section I, please enter name on log here: _____

Check here if attached log is being submitted after being held confidential. ☐

☐ (b) Form P-7, Application for Discovery Allowable and New Field Designation.

☐ (c) Form W-4, Application for Multiple Completion:

Lease or ID No(s). _____

Well No(s). _____

Josh Calkin
Signature

Title

EXXONMOBIL LOW C SOL ON STOR LLC
Name (print)

(281) 702-5537
Phone

12/19/2024
Date

-FOR RAILROAD COMMISSION USE ONLY-

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON

4607 HWY 90 EAST • BROUSSARD, LA 70518

PHONE 337 837 3061 • FAX 337 837 4400

Jefferson County,
State of Texas

I, **Kristen Killen,** certify that: I am employed by Halliburton Energy Service and that I did on the day(s) of **June 23, 2024 to July 1, 2024** conduct or supervise the taking of Directional Surveys as follow:

- **396' to a depth of 8604' MWD surveys performed by Sperry Drilling MWD**
- **Final survey is projected to a total depth of 8672'**

I certify that the data is true, correct, complete and within the limitations of the tool as set forth by Halliburton Energy Services. I further certify that I am authorized and qualified to make this report, that this survey was conducted at the request of **EXXONMOBIL LOW C SOL ON STOR LLC** for the **LABELLE PROPERTIES LTD 1** in **Jefferson County, TX,** and that I have reviewed this report and find that it conforms to the principles and procedures set forth by Halliburton Energy Service for quality well surveying.

Kristen Killen, Log Analyst

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON
4607 HWY 90 EAST • BROUSSARD, LA 70518
PHONE 337 837 3061 • FAX 337 837 4400

July 24, 2024

Railroad Commission of Texas
Oil and Gas Division
P.O. Box 12967
Capital Station
Austin, TX 78711

Re: EXXONMOBIL LOW C SOL ON STOR LLC
R.R.C. Operator No. 101256
LABELLE PROPERTIES LTD 1
Permit No. 898448
Jefferson County, TX
API # 42-245-32913

Attention: Ms. Pam Johns

Enclosed, please find one copy of the survey performed on the above referenced well by Halliburton Energy Services, Inc. Operator #347-151.

Other information required by your office is as follows:

Name & Title of Surveyor	-	Kristen Killen, Log Analyst
Drainhole Number	-	Original
Surveyed Depths	-	396' – 8604' MWD Surveys performed by Sperry Drilling
Dates Performed	-	June 23, 2024 to July 1, 2024
Type of Survey	-	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the listed e-mail address.

Respectfully,

Kristen Killen
Log Analyst
Kristen.Killen@Halliburton.com
Halliburton / Sperry Drilling

Enclosures
RE: LA-MM 909034765

CONFIDENTIAL BUSINESS INFORMATION

ExxonMobil

Jefferson County, Tx_NAD83
Rose Prospect CCS
Labelle Properties LTD #1
42245332913
001 ST00BP00

Design: 001 ST00BP00

Sperry Drilling Services

Geodetic Report

19 July, 2024

Well Coordinates: 13,941,119.32 N, 3,460,521.21 E (29° 59' 58.84" N, 094° 17' 06.39" W)
Ground Level: 26.60 usft

Local Coordinate Origin:	Centered on Well Labelle Properties LTD #1
Viewing Datum:	(32.52') Nabors X-33 @ 59.12usft (Before Spud)
TVDs to System:	N
North Reference:	Grid
Unit System:	API US Survey Feet

Version: 5000.17 Build: 02

HALLIBURTON

Design Report for Labelle Properties LTD #1 - 001 ST00BP00

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude (usft)	Geographic Coordinates Longitude (usft)	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	29° 59' 58.843 N	94° 17' 6.388 W	13,941,119.32	3,460,521.21
396.00	0.31	302.42	396.00	0.57	-0.90	29° 59' 58.849 N	94° 17' 6.398 W	13,941,119.89	3,460,520.31
491.00	0.33	316.43	491.00	0.91	-1.31	29° 59' 58.852 N	94° 17' 6.403 W	13,941,120.23	3,460,519.90
584.00	0.06	160.13	584.00	1.06	-1.48	29° 59' 58.854 N	94° 17' 6.405 W	13,941,120.38	3,460,519.73
679.00	0.31	105.12	679.00	0.94	-1.21	29° 59' 58.853 N	94° 17' 6.402 W	13,941,120.26	3,460,520.00
765.00	0.25	190.83	764.99	0.70	-1.02	29° 59' 58.850 N	94° 17' 6.400 W	13,941,120.02	3,460,520.19
862.00	0.28	223.68	861.99	0.32	-1.23	29° 59' 58.846 N	94° 17' 6.402 W	13,941,119.64	3,460,519.98
956.00	0.19	251.73	955.99	0.11	-1.53	29° 59' 58.844 N	94° 17' 6.406 W	13,941,119.43	3,460,519.68
1,043.00	0.59	311.75	1,042.99	0.36	-2.00	29° 59' 58.847 N	94° 17' 6.411 W	13,941,119.68	3,460,519.21
1,139.00	0.65	324.96	1,138.99	1.13	-2.69	29° 59' 58.855 N	94° 17' 6.418 W	13,941,120.45	3,460,518.52
1,237.00	1.13	346.55	1,236.97	2.53	-3.23	29° 59' 58.869 N	94° 17' 6.424 W	13,941,121.85	3,460,517.98
1,334.00	1.02	341.03	1,333.96	4.28	-3.73	29° 59' 58.887 N	94° 17' 6.429 W	13,941,123.60	3,460,517.48
1,423.00	0.84	310.12	1,422.95	5.44	-4.49	29° 59' 58.898 N	94° 17' 6.437 W	13,941,124.76	3,460,516.72
1,519.00	0.61	306.92	1,518.94	6.21	-5.44	29° 59' 58.906 N	94° 17' 6.447 W	13,941,125.53	3,460,515.77
1,612.00	0.33	217.44	1,611.94	6.29	-5.99	29° 59' 58.907 N	94° 17' 6.454 W	13,941,125.61	3,460,515.22
1,707.00	0.42	215.22	1,706.93	5.79	-6.36	29° 59' 58.903 N	94° 17' 6.458 W	13,941,125.11	3,460,514.85
1,804.00	0.43	218.07	1,803.93	5.21	-6.79	29° 59' 58.897 N	94° 17' 6.463 W	13,941,124.53	3,460,514.42
1,894.00	0.89	271.47	1,893.93	4.96	-7.70	29° 59' 58.895 N	94° 17' 6.474 W	13,941,124.28	3,460,513.51
1,991.00	0.70	257.71	1,990.92	4.86	-9.03	29° 59' 58.894 N	94° 17' 6.489 W	13,941,124.18	3,460,512.18
2,088.00	0.31	300.25	2,087.91	4.86	-9.84	29° 59' 58.895 N	94° 17' 6.498 W	13,941,124.18	3,460,511.37
2,171.00	0.26	350.35	2,170.91	5.16	-10.06	29° 59' 58.898 N	94° 17' 6.500 W	13,941,124.48	3,460,511.15
2,267.00	0.57	26.56	2,266.91	5.80	-9.88	29° 59' 58.904 N	94° 17' 6.498 W	13,941,125.12	3,460,511.33
2,363.00	0.63	17.23	2,362.90	6.73	-9.51	29° 59' 58.913 N	94° 17' 6.494 W	13,941,126.05	3,460,511.70
2,455.00	0.67	26.51	2,454.90	7.70	-9.12	29° 59' 58.923 N	94° 17' 6.489 W	13,941,127.02	3,460,512.09
2,549.00	0.58	25.23	2,548.89	8.62	-8.68	29° 59' 58.932 N	94° 17' 6.483 W	13,941,127.94	3,460,512.53
2,645.00	0.42	12.95	2,644.89	9.40	-8.39	29° 59' 58.939 N	94° 17' 6.480 W	13,941,128.72	3,460,512.82
2,742.00	0.25	14.60	2,741.89	9.95	-8.26	29° 59' 58.945 N	94° 17' 6.478 W	13,941,129.27	3,460,512.95
2,832.00	0.32	347.80	2,831.89	10.39	-8.26	29° 59' 58.949 N	94° 17' 6.478 W	13,941,129.71	3,460,512.95
2,929.00	0.18	359.49	2,928.88	10.81	-8.32	29° 59' 58.953 N	94° 17' 6.478 W	13,941,130.13	3,460,512.89
3,025.00	0.09	307.84	3,024.88	11.00	-8.38	29° 59' 58.955 N	94° 17' 6.479 W	13,941,130.32	3,460,512.83
3,121.00	0.09	276.88	3,120.88	11.06	-8.52	29° 59' 58.956 N	94° 17' 6.480 W	13,941,130.38	3,460,512.69
3,214.00	0.13	264.11	3,213.88	11.06	-8.69	29° 59' 58.956 N	94° 17' 6.482 W	13,941,130.38	3,460,512.52
3,309.00	0.09	161.81	3,308.88	10.98	-8.78	29° 59' 58.955 N	94° 17' 6.483 W	13,941,130.30	3,460,512.43
3,400.00	0.06	225.09	3,399.88	10.87	-8.79	29° 59' 58.954 N	94° 17' 6.483 W	13,941,130.19	3,460,512.42
3,496.00	0.25	142.62	3,495.88	10.67	-8.70	29° 59' 58.952 N	94° 17' 6.482 W	13,941,129.99	3,460,512.51
3,507.17	0.25	145.70	3,507.05	10.63	-8.67	29° 59' 58.951 N	94° 17' 6.482 W	13,941,129.95	3,460,512.54
3,686.00	0.28	195.98	3,685.88	9.90	-8.57	29° 59' 58.944 N	94° 17' 6.481 W	13,941,129.22	3,460,512.64
3,782.00	0.18	201.29	3,781.88	9.53	-8.69	29° 59' 58.941 N	94° 17' 6.483 W	13,941,128.85	3,460,512.52
3,876.00	0.06	170.16	3,875.88	9.34	-8.74	29° 59' 58.939 N	94° 17' 6.483 W	13,941,128.66	3,460,512.47
3,967.00	0.22	345.14	3,966.88	9.47	-8.77	29° 59' 58.940 N	94° 17' 6.484 W	13,941,128.79	3,460,512.44
4,065.00	0.25	12.46	4,064.88	9.86	-8.78	29° 59' 58.944 N	94° 17' 6.484 W	13,941,129.18	3,460,512.43
4,161.00	0.14	3.58	4,160.88	10.18	-8.72	29° 59' 58.947 N	94° 17' 6.483 W	13,941,129.50	3,460,512.49

Design Report for Labelle Properties LTD #1 - 001 ST00BP00

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude (usft)	Geographic Coordinates Longitude (usft)	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
4,250.00	0.14	10.43	4,249.88	10.39	-8.70	29° 59' 58.949 N	94° 17' 6.483 W	13,941,129.71	3,460,512.51
4,345.00	0.00	91.76	4,344.88	10.51	-8.68	29° 59' 58.950 N	94° 17' 6.482 W	13,941,129.83	3,460,512.53
4,442.00	0.13	284.23	4,441.88	10.54	-8.78	29° 59' 58.951 N	94° 17' 6.483 W	13,941,129.86	3,460,512.43
4,539.00	0.28	249.99	4,538.88	10.48	-9.11	29° 59' 58.950 N	94° 17' 6.487 W	13,941,129.80	3,460,512.10
4,630.00	0.13	167.76	4,629.88	10.30	-9.30	29° 59' 58.948 N	94° 17' 6.489 W	13,941,129.62	3,460,511.91
4,725.00	0.19	159.33	4,724.88	10.05	-9.22	29° 59' 58.946 N	94° 17' 6.489 W	13,941,129.37	3,460,511.99
4,817.00	0.42	147.25	4,816.88	9.63	-8.98	29° 59' 58.942 N	94° 17' 6.486 W	13,941,128.95	3,460,512.23
4,911.00	0.25	157.32	4,910.87	9.15	-8.72	29° 59' 58.937 N	94° 17' 6.483 W	13,941,128.47	3,460,512.49
5,008.00	0.35	153.99	5,007.87	8.68	-8.51	29° 59' 58.932 N	94° 17' 6.481 W	13,941,128.00	3,460,512.70
5,099.00	0.26	82.39	5,098.87	8.46	-8.18	29° 59' 58.930 N	94° 17' 6.478 W	13,941,127.78	3,460,513.03
5,195.00	0.18	52.96	5,194.87	8.58	-7.84	29° 59' 58.931 N	94° 17' 6.474 W	13,941,127.90	3,460,513.37
5,292.00	0.42	34.84	5,291.87	8.97	-7.52	29° 59' 58.934 N	94° 17' 6.470 W	13,941,128.29	3,460,513.69
5,388.00	0.31	24.73	5,387.87	9.49	-7.21	29° 59' 58.940 N	94° 17' 6.466 W	13,941,128.81	3,460,514.00
5,482.00	0.42	342.12	5,481.87	10.05	-7.21	29° 59' 58.945 N	94° 17' 6.466 W	13,941,129.37	3,460,514.00
5,574.00	0.36	329.02	5,573.86	10.62	-7.46	29° 59' 58.951 N	94° 17' 6.468 W	13,941,129.94	3,460,513.75
5,670.00	0.53	314.29	5,669.86	11.19	-7.94	29° 59' 58.957 N	94° 17' 6.474 W	13,941,130.51	3,460,513.27
5,767.00	0.50	313.01	5,766.86	11.79	-8.57	29° 59' 58.963 N	94° 17' 6.480 W	13,941,131.11	3,460,512.64
5,858.00	0.25	295.28	5,857.86	12.14	-9.04	29° 59' 58.967 N	94° 17' 6.486 W	13,941,131.46	3,460,512.17
5,955.00	0.18	274.92	5,954.85	12.25	-9.38	29° 59' 58.968 N	94° 17' 6.489 W	13,941,131.57	3,460,511.83
6,052.00	0.25	226.53	6,051.85	12.12	-9.68	29° 59' 58.967 N	94° 17' 6.493 W	13,941,131.44	3,460,511.53
6,238.00	0.40	184.93	6,237.85	11.19	-10.03	29° 59' 58.957 N	94° 17' 6.497 W	13,941,130.51	3,460,511.18
6,428.00	0.43	142.07	6,427.85	9.97	-9.65	29° 59' 58.945 N	94° 17' 6.494 W	13,941,129.29	3,460,511.56
6,522.00	0.31	101.91	6,521.85	9.64	-9.19	29° 59' 58.942 N	94° 17' 6.488 W	13,941,128.96	3,460,512.02
6,638.00	0.35	51.62	6,637.84	9.79	-8.60	29° 59' 58.943 N	94° 17' 6.482 W	13,941,129.11	3,460,512.61
6,706.00	0.36	33.75	6,705.84	10.10	-8.32	29° 59' 58.946 N	94° 17' 6.478 W	13,941,129.42	3,460,512.89
6,803.00	0.36	13.29	6,802.84	10.65	-8.08	29° 59' 58.951 N	94° 17' 6.475 W	13,941,129.97	3,460,513.13
6,897.00	0.43	358.50	6,896.84	11.29	-8.02	29° 59' 58.958 N	94° 17' 6.474 W	13,941,130.61	3,460,513.19
6,994.00	0.44	344.45	6,993.84	12.01	-8.13	29° 59' 58.965 N	94° 17' 6.475 W	13,941,131.33	3,460,513.08
7,189.00	0.86	346.17	7,188.82	14.15	-8.68	29° 59' 58.986 N	94° 17' 6.481 W	13,941,133.47	3,460,512.53
7,284.00	0.84	340.34	7,283.81	15.50	-9.09	29° 59' 59.000 N	94° 17' 6.485 W	13,941,134.82	3,460,512.12
7,381.00	0.67	318.96	7,380.80	16.60	-9.70	29° 59' 59.011 N	94° 17' 6.491 W	13,941,135.92	3,460,511.51
7,409.00	0.45	321.74	7,408.80	16.81	-9.87	29° 59' 59.013 N	94° 17' 6.493 W	13,941,136.13	3,460,511.34
7,464.00	0.57	329.25	7,463.80	17.21	-10.15	29° 59' 59.017 N	94° 17' 6.496 W	13,941,136.53	3,460,511.06
7,653.00	0.43	306.59	7,652.79	18.44	-11.20	29° 59' 59.030 N	94° 17' 6.507 W	13,941,137.76	3,460,510.01
7,749.00	0.39	272.61	7,748.79	18.67	-11.81	29° 59' 59.032 N	94° 17' 6.514 W	13,941,137.99	3,460,509.40
7,941.00	0.31	214.26	7,940.79	18.27	-12.76	29° 59' 59.029 N	94° 17' 6.525 W	13,941,137.59	3,460,508.45
8,031.00	0.19	194.93	8,030.79	17.93	-12.93	29° 59' 59.025 N	94° 17' 6.527 W	13,941,137.25	3,460,508.28
8,123.00	0.25	138.03	8,122.79	17.63	-12.84	29° 59' 59.022 N	94° 17' 6.526 W	13,941,136.95	3,460,508.37
8,220.00	0.25	146.32	8,219.79	17.30	-12.58	29° 59' 59.019 N	94° 17' 6.524 W	13,941,136.62	3,460,508.63
8,314.00	0.36	131.85	8,313.78	16.93	-12.25	29° 59' 59.015 N	94° 17' 6.520 W	13,941,136.25	3,460,508.96
8,407.00	0.26	84.39	8,406.78	16.76	-11.82	29° 59' 59.013 N	94° 17' 6.515 W	13,941,136.08	3,460,509.39
8,501.00	0.38	54.36	8,500.78	16.96	-11.35	29° 59' 59.015 N	94° 17' 6.510 W	13,941,136.28	3,460,509.86

Design Report for Labelle Properties LTD #1 - 001 ST00BP00

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude (usft)	Geographic Coordinates Longitude (usft)	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
8,604.00	0.32	61.67	8,603.78	17.29	-10.82	29° 59' 59.018 N	94° 17' 6.504 W	13,941,136.61	3,460,510.39
8,672.00	0.32	61.67	8,671.78	17.47	-10.49	29° 59' 59.020 N	94° 17' 6.500 W	13,941,136.79	3,460,510.72

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
8,672.00	8,671.78	17.47	-10.49	Proj. to Bit

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	0.00	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
396.00	2,171.00	01 HAL MWD (MagVarMS) 17 1/2" Hole 396' - 2171'	3_MWD+HRGM+MS
2,267.00	8,604.00	02 HAL MWD (MagVarMS) 12 1/4" Hole 2267' - XX'	3_MWD+HRGM+MS

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
150.00	150.00	20" Conductor Casing	20	20

Design Report for Labelle Properties LTD #1 - 001 ST00BP00

Design Targets

Shape	Target Name	TVD ()	Northing ()	Easting ()	+N/-S	+E/-W	Created	Updated

Directional Difficulty Index

Average Dogleg over Survey:	0.20 °/100usft	Maximum Dogleg over Survey:	0.80 °/100usft at 1,894.00 usft
Net Tortousity applicable to Plans:	0.20 °/100usft	Directional Difficulty Index:	2.984

Audit Info

North Reference Sheet for Rose Prospect CCS - Labelle Properties LTD #1 - 001 ST00BP00

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to (32.52') Nabors X-33 @ 59.12usft (Before Spud). Northing and Easting are relative to Labelle Properties LTD #1

Coordinate System is US State Plane 1983, Texas South Central Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is 99° 0' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:30° 17' 0.000 N°

False Easting: 1,968,500.00usft, False Northing: 13,123,333.33usft, Scale Reduction: 0.99993037

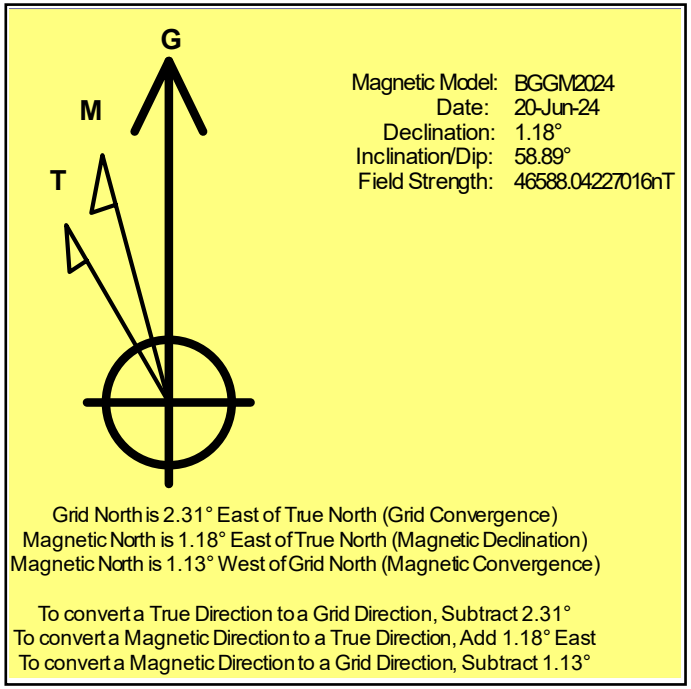
Grid Coordinates of Well: 13,941,119.32 usft N, 3,460,521.21 usft E

Geographical Coordinates of Well: 29° 59' 58.84" N, 094° 17' 06.39" W

Grid Convergence at Surface is: 2.31°

Based upon Minimum Curvature type calculations, at a Measured Depth of 8,672.00usft

the Bottom Hole Displacement is 20.38usft in the Direction of 329.02° (Grid).
Magnetic Convergence at surface is: 1.13° (20 June 2024, , BGGM2024)



CONFIDENTIAL BUSINESS INFORMATION

Railroad Commission of Texas

PERMIT TO DRILL, RE-COMPLETE, OR RE-ENTER ON REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

CONDITIONS AND INSTRUCTIONS

Permit Invalidation. It is the operator's responsibility to make sure that the permitted location complies with Commission density and spacing rules in effect on the spud date. The permit becomes invalid automatically if, because of a field rule change or the drilling of another well, the stated location is not in compliance with Commission field rules on the spud date. If this occurs, application for an exception to Statewide Rules 37 and 38 must be made and a special permit granted prior to spudding. Failure to do so may result in an allowable not being assigned and/or enforcement procedures being initiated.

Notice Requirements. Per H.B 630, signed May 8, 2007, the operator is required to provide notice to the surface owner no later than the 15th business day after the Commission issues a permit to drill. Please refer to subchapter Q Sec. 91.751-91.755 of the Texas Natural Resources Code for applicability.

Permit expiration. This permit expires two (2) years from the date of issuance shown on the original permit. The permit period will not be extended.

Drilling Permit Number. The drilling permit number shown on the permit MUST be given as a reference with any notification to the district (see below), correspondence, or application concerning this permit.

Rule 37 Exception Permits. This Statewide Rule 37 exception permit is granted under either provision Rule 37 (h)(2)(A) or 37(h)(2)(B). Be advised that a permit granted under Rule 37(h)(2)(A), notice of application, is subject to the General Rules of Practice and Procedures and if a protest is received under Section 1.3, "Filing of Documents," and/or Section 1.4, "Computation of Time," the permit may be deemed invalid.

Before Drilling

Fresh Water Sand Protection. The operator must set and cement sufficient surface casing to protect all usable-quality water, as defined by the Railroad Commission of Texas (RRC) Groundwater Advisory Unit (GWAU). Before drilling a well, the operator must obtain a letter from the Railroad Commission of Texas stating the depth to which water needs protection, Write: Railroad Commission of Texas, Groundwater Advisory Unit (GWAU), P.O. Box 12967, Austin, TX 78711-3087. File a copy of the letter with the appropriate district office.

Accessing the Well Site. If an OPERATOR, well equipment TRANSPORTER or WELL service provider must access the well site from a roadway on the state highway system (Interstate, U.S. Highway, State Highway, Farm-to-Market Road, Ranch-to-Market Road, etc.), an access permit is required from TxDOT. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

Water Transport to Well Site. If an operator intends to transport water to the well site through a temporary pipeline laid above ground on the state's right-of-way, an additional TxDOT permit is required. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

*NOTIFICATION

The operator is **REQUIRED** to notify the district office when setting surface casing, intermediate casing, and production casing, or when plugging a dry hole. The district office **MUST** also be notified if the operator intends to re-enter a plugged well or re-complete a well into a different regulatory field. Time requirements are given below. The drilling permit number **MUST** be given with such notifications.

During Drilling

Permit at Drilling Site. A copy of the Form W-1 Drilling Permit Application, the location plat, a copy of Statewide Rule 13 alternate surface casing setting depth approval from the district office, if applicable, and this drilling permit must be kept at the permitted well site throughout drilling operations.

***Notification of Setting Casing.** The operator MUST call in notification to the appropriate district office (phone number shown the on permit) a minimum of eight (8) hours prior to the setting of surface casing, intermediate casing, AND production casing. The individual giving notification MUST be able to advise the district office of the drilling permit number.

***Notification of Re-completion/Re-entry.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of eight (8) hours prior to the initiation of drilling or re-completion operations. The individual giving notification MUST be able to advise the district office of the drilling permit number.

Completion and Plugging Reports

Hydraulic Fracture Stimulation using Diesel Fuel: Most operators in Texas do not use diesel fuel in hydraulic fracturing fluids. Section 322 of the Energy Policy Act of 2005 amended the Underground Injection Control (UIC) portion of the federal Safe Drinking Water Act (42 USC 300h(d)) to define "underground Injection" to *EXCLUDE* " ...the underground injection of fluids or propping agents (*other than diesel fuels*) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities." (italic and underlining added.) Therefore, hydraulic fracturing may be subject to regulation under the federal UIC regulations if diesel fuel is injected or used as a propping agent. EPA defined "diesel fuel" using the following five (5) Chemical Abstract Service numbers: 68334-30-5 Primary Name: Fuels, diesel; 68476-34-6 Primary Name: Fuels, diesel, No. 2; 68476-30-2 Primary Name: Fuel oil No. 2; 68476-31-3 Primary Name: Fuel oil, No. 4; and 8008-20-6 Primary Name: Kerosene. As a result, an injection well permit would be required before performing hydraulic fracture stimulation using diesel fuel as defined by EPA on any well in Texas. Hydraulic fracture stimulation using diesel fuel as defined by EPA on a well in Texas without an injection well permit could result in enforcement action.

Producing Well. Statewide Rule 16 states that the operator of a well shall file with the Commission the appropriate completion report within ninety (90) days after completion of the well or within one hundred and fifty (150) days after the date on which the drilling operation is completed, whichever is earlier. Completion of the well in a field authorized by this permit voids the permit for all other fields included in the permit unless the operator indicates on the initial completion report that the well is to be a dual or multiple completion and promptly submits an application for multiple completion. All zones are required to be completed before the expiration date on the existing permit. Statewide Rule 40(d) requires that upon successful completion of a well in the same reservoir as any other well previously assigned the same acreage, proration plats and P-15s or P-16s (if required) or a lease plat and P-16 must be submitted with no double assignment of acreage unless authorized by rule.

Dry or Noncommercial Hole. Statewide Rule 14(b)(2) prohibits suspension of operations on each dry or non-commercial well without plugging unless the hole is cased and the casing is cemented in compliance with Commission rules. If properly cased, Statewide Rule 14(b)(2) requires that plugging operations must begin within a period of one (1) year after drilling or operations have ceased. Plugging operations must proceed with due diligence until completed. An extension to the one-year plugging requirement may be granted under the provisions stated in Statewide Rule 14(b)(2).

Intention to Plug. The operator must file a Form W-3A (Notice of Intention to Plug and Abandon) with the district office at least five (5) days prior to beginning plugging operations. If, however, a drilling rig is already at work on location and ready to begin plugging operations, the district director or the director's delegate may waive this requirement upon request, and verbally approve the proposed plugging procedures.

***Notification of Plugging a Dry Hole.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of four (4) hours prior to beginning plugging operations. The individual giving the notification MUST be able to advise the district office of the drilling permit number and all water protection depths for that location as stated in the Groundwater Advisory Unit letter.

DIRECT INQUIRIES TO: DRILLING PERMIT SECTION, OIL AND GAS DIVISION

PHONE
(512) 463-6751

MAIL:
PO Box 12967
Austin, Texas, 78711-2967

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER	DATE PERMIT ISSUED OR AMENDED	DISTRICT
898448	Apr 05, 2024	* 03
API NUMBER	**FORM W-1 RECEIVED**	**COUNTY**
42-245-32913	Mar 27, 2024	JEFFERSON
TYPE OF OPERATION	**WELLBORE PROFILE(S)**	**ACRES**
NEW DRILL	Vertical	569.27

OPERATOR 101256

EXXONMOBIL LOW C SOL ON STOR LLC

ATTN EDWARD E GRAHAM
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389

NOTICE

This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored.

District Office Telephone No:
(713) 869-5001

LEASE NAME	WELL NUMBER
LABELLE PROPERTIES LTD	1
LOCATION	**TOTAL DEPTH**
4.5 miles SE direction from CHINA	10000

Section, Block and/or Survey

SECTION 42 BLOCK ABSTRACT 874

SURVEY T&NO RR CO/STARK, W L

DISTANCE TO SURVEY LINES	DISTANCE TO NEAREST LEASE LINE
371 ft. NORTH 2016 ft. WEST	ft.
DISTANCE TO LEASE LINES	**DISTANCE TO NEAREST WELL ON LEASE**
371 ft. NORTH 2016 ft. WEST	See FIELD(s) Below

FIELD(s) and LIMITATIONS:

* SEE FIELD DISTRICT FOR REPORTING PURPOSES *

FIELD NAME / LEASE NAME	ACRES / NEAREST LEASE	DEPTH	WELL # / NEAREST WE	DIST
WILDCAT	569.27	8,700	1	03
LABELLE PROPERTIES LTD			0	

RESTRICTIONS: For exploratory test only

THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS

This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.

This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

SWR #13 Formation Data

JEFFERSON (245) County

Formation	Remarks	Geological Order	Effective Date
LAFAYETTE	disposal	1	12/17/2013
CAPROCK	disposal	2	12/17/2013
SPINDLETOP SALT DOME	disposal	3	12/17/2013
FANNETT SALT DOME	disposal	4	12/17/2013
BIG HILL SALT DOME	disposal	5	12/17/2013
PLEISTOCENE-LISSIE	disposal	6	12/17/2013
MIOCENE	disposal	7	12/17/2013
FRIO	disposal	8	12/17/2013
MARINULINA	disposal	9	12/17/2013
HETEROSTEGINA	disposal	10	12/17/2013

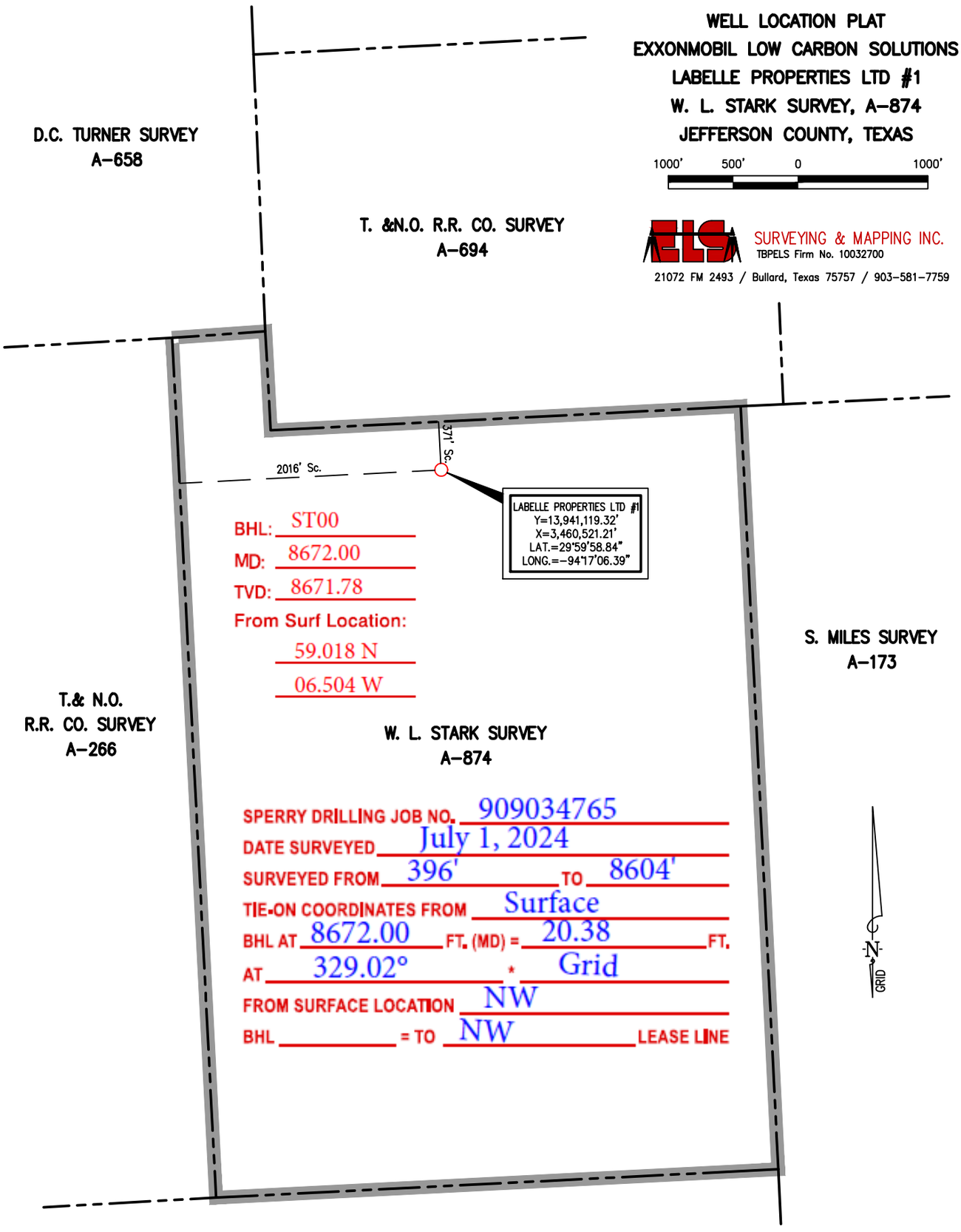
The above list may not be all inclusive, and may also include formations that do not intersect all wellbores. The listing order of the Formation information reflects the general stratigraphic order and relative geologic age. This is a dynamic list subject to updates and revisions. It is the operator's responsibility to make sure that at the time of spudding the well the most current list is being referenced. Refer to the RRC website at the following address for the most recent information.
http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info

CONFIDENTIAL BUSINESS INFORMATION

WELL LOCATION PLAT
EXXONMOBIL LOW CARBON SOLUTIONS
LABELLE PROPERTIES LTD #1
W. L. STARK SURVEY, A-874
JEFFERSON COUNTY, TEXAS

1000' 500' 0 1000'

SURVEYING & MAPPING INC.
TBPELS Firm No. 10032700
21072 FM 2493 / Bullard, Texas 75757 / 903-581-7759



SHL	TRACT CALLS	SURVEY CALLS	ELEV.
LABELLE PROPERTIES LTD #1	371' Sc. FNL 2016' Sc. FWL	371' Sc. FNL 2016' Sc. FWL	22.9'

Location is approximately
10.4 miles SW of Beaumont, Tx.
"FANNETT WEST" Quadrangle

Driving Directions:
From the Intersection of I10 and Smith Road near Cheek, TX, go Northwest on Smith Road, .8 miles turn left (West) Kidd Road. Go 1.6 miles turn right (North) on Boyt Road. Go 1.1 miles stay straight (West) on Lawhon Rd. Go 1.9 miles turn left (South). Drive on location.

DATE SURVEYED: 8/23/2023-8/28/2023

Location is staked from tract lines as evidenced by occupation, information obtained from the Tx. R.R.C and provided deed records. Distances shown are not intended to be definitive in establishing actual title boundaries. The deed data and tract acreages shown hereon were furnished by others. This is not a title survey. Vesting documents may not have been provided. Bearings and distances are based on the Texas State Plane Coordinate System N.A.D. 83 (2011) (South Central Zone) derived from GPS Observations.

LEGEND
= TRACT LINE
= SURVEY LINE
= PROPOSED WELL

STATE OF TEXAS REGISTERED
JIM G. GLASS
5262
PROFESSIONAL LAND SURVEYOR

FOR THE EXCLUSIVE USE OF
EXXONMOBIL LOW CARBON SOLUTIONS

STATE OF TEXAS - - - COUNTY OF SMITH
I, Jim G. Glass, Registered Professional Land Surveyor, do hereby certify the above plat to be true and correct to the best of my knowledge.
Date: April 2, 2024 Bullard, Texas
E.L.S. Surveying & Mapping, Inc.

Registered Professional Land Surveyor No. 5262

Drafter: ECJ | FB 2744/88-97 | Job No. 430923 | Map No. J-0923-LOC-INJ1B

CONFIDENTIAL BUSINESS INFORMATION

CHRISTI CRADDICK, CHAIRMAN
WAYNE CHRISTIAN, COMMISSIONER
JIM WRIGHT, COMMISSIONER

DANNY SORRELLS
DIRECTOR, OIL AND GAS DIVISION
PETER FISHER, P.G.
DISTRICT DIRECTOR

RAILROAD COMMISSION OF TEXAS

OIL AND GAS DIVISION

OPERATOR Name:	EXXONMOBIL LOW C SOL ON	**RE:**	**Lease:**	LaBelle Properties, Ltd
Address1:	ATTN EDWARD E GRAHAM W1.2B.02			
Address2:	22777 SPRINGWOODS VILLAGE PKWY	**Well No:**	1	
City:	SPRING	**Sec:**	42	**Block:**
State:	TX	**County:**	JEFFERSON	
		Survey Name:	Stark, W. L.	

SWR13EX Application Number: 130360 **Drilling Permit No:**

SWR 13 CASING EXCEPTION APPLICATION/ALTERNATIVE REQUEST APPROVED

The Proposed Casing and Cementing Program submitted for **LEASE** LaBelle Properties, Ltd ; **WELL** 1 has been approved by the Railroad Commission of Texas District Office.

a. A copy of this approved letter must be kept on location during all phases of drilling and/or plugging operations. Once approved, changes CANNOT be made to the Proposed Casing Program on the original application without additional approval from the Railroad Commission of Texas District Office.

b. Any substantive modifications to the cement program require prior approval from the Railroad Commission of Texas District Office, and may require re-submission of the SWR 13 (Statewide Rule 13) Alternate Surface Casing Application. Contact the Railroad Commission of Texas District Office for more information.

c. The tail slurry must be sufficient to fill the Zone of Critical Cement as described in Statewide Rule 13(b)(1)(H)(i). In addition, all cement slurries must be mixed on location as described in Application for Alternate Surface Casing Program.

d. The casing and cement program shall adhere to the following specifications:

Set 2230 feet of surface casing and circulate cement from the shoe to the ground surface.

DP 898448 - Exxonmobil, Labelle Properties Ltd Lease Well 1 (245 32913)

IF CEMENT IS NOT CIRCULATED TO THE GROUND SURFACE AS REQUIRED BY THIS EXCEPTION, YOU MUST CONTACT THE RAILROAD COMMISSION OF TEXAS DISTRICT OFFICE IMMEDIATELY AND FOLLOW THE PROCEDURES SET OUT IN RULE 13(b)(1)(H)(iii) OR AS REQUIRED BY THE RAILROAD COMMISSION OF TEXAS DISTRICT OFFICE.

You must comply with all other provisions of SWR 13 (Statewide Rule 13) and a representative of the cementing company who performs the cementing job for the protection of usable quality water strata must sign the Form W-15 attesting to the information regarding cementing operations performed; including circulation of cement. (Note: If surface casing is set below the approved depth, this can result in denial of future Statewide Rule 13(b)(1)(H)(i) requests.) A condition of the approved drilling permit requires notification to the Railroad Commission of Texas District Office eight (8) hours prior to the time casing is to be set/cemented in the well. If your exception request was submitted after the subject well has been drilled and completed, the operator may be referred for enforcement action.

This authorization shall expire within five (5) years from the date the Groundwater Protection Determination was issued, or at the expiration of the drilling permit (if the well is not spudded prior to expiration) for the referenced well, whichever occurs first. Furthermore, this authorization supersedes any prior authorizations issued for the referenced well.

This exception is based on information provided when the application was submitted 05/20/2024 .
If any information has changed, you must contact the appropriate Railroad Commission of Texas District Office, and submit a new application if applicable. If you have questions, please contact the appropriate Oil and Gas District office.

RRC APPROVAL BY: AUDREY KUKLENZ DATE: 05/20/2024

PETER FISHER, P.G.

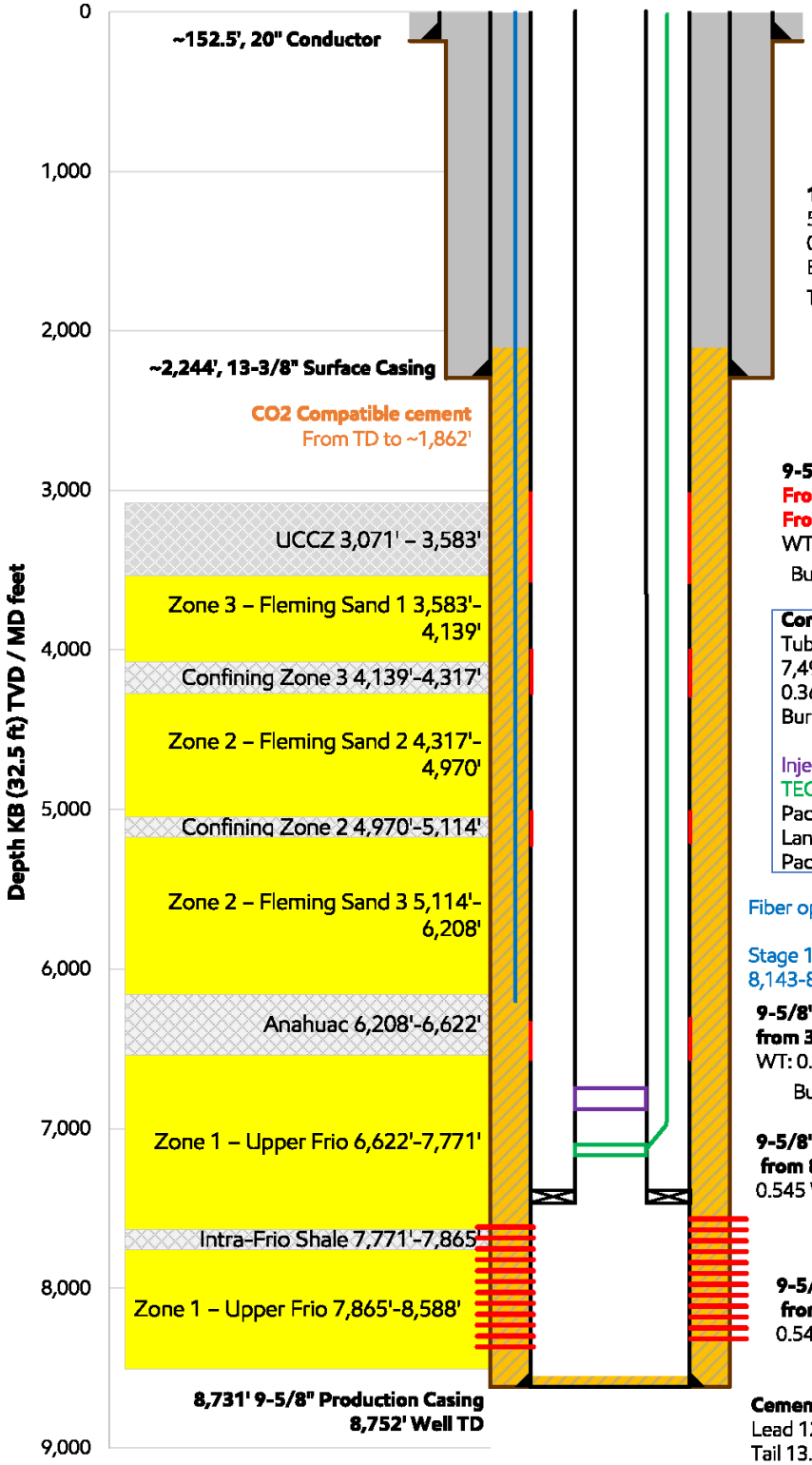
DISTRICT DIRECTOR

CONFIDENTIAL BUSINESS INFORMATION

4224532911 Bead Farm Co. 2 (Rose CCS Project Injection Well No. 02)

CONFIDENTIAL BUSINESS INFORMATION

Rose CCS Project Bead Farm Co 2
Completion Wellbore Schematic



20" Conductor
78.6 ppf, X-52, Welded
0.375" WT, 19.25" ID
Burst: 1,950, Collapse: 320 psi, Tensile: 1,202 kips

13-3/8" Surface casing
54.5 ppf, J-55, BTC
0.380" WT, 12.615" ID, 12.459" Drift
Burst: 2,740 psi, Collapse: 1,130 psi, Tensile: 853 kips
TOC @ Surface

9-5/8", 47 ppf, L80, DWC/C-SR, from surface to 3,049' TVDdf
0.472 WT, 8.681" ID, 8.525 Drift
Burst: 6,870 psi, Collapse: 4,760 psi, 1,086 kips

9-5/8", 53.5 ppf, SM25Cr-125, VAM 21
From 3,049' – 3,597 (548'), 4,129'- 4,347' (218')
From 4,966' – 5,147' (181'), 6,428' – 6,647' (219')
WT: 0.545" 8.535" ID, 8.5" drift
Burst: 12,740 psi, Collapse: 8,440 psi, Tensile: 1,943 kips

Completions:
Tubing – 7", 26 ppf, L80-13Cr, VAM21, from surface to 7,491'
0.362" WT, 6.276" ID, 6.151" Drift
Burst: 7,240, Collapse: 5,410, Tensile: 604 kips

Injection safety valve ~7,456'
TEC P&T gauge ~7,481'
Packer ~7,491'
Landing nipple ~7,513' min ID 4.437"
Packer Fluid – 7 ppg Diesel

Fiber optic line from surface to ~6,184'

Stage 1 perf interval: 7,540'-7,769'; 7,962'-8,026'; 8,107'-8,124'; 8,143-8,160'

9-5/8", 47 ppf, 13Cr-80, JFE Lion,
from 3,597' to 8,092' TVDdf except where 25CR125 is noted
WT: 0.4472" 8.681" ID, 8.525" drift
Burst: 6,870 psi, Collapse: 4,750 psi, Tensile: 1,086 kips

9-5/8" 53.5 ppf, 13Cr-80, JFE Lion
from 8,092' - 8,610' TVDdf
0.545 WT, 8.535" ID, 8.50" Drift
Burst: 7,930 psi, Collapse: 6,620 psi, 1,244 kips

9-5/8" 53.5 ppf, L-80, JFE Lion
from 8,610' - 8,731' TVDdf (shoe track)
0.545 WT, 8.535" ID, 8.50" Drift
Burst: 7,930 psi, Collapse: 6,620 psi, 1,244 kips

Cement:
Lead 12.5 ppg, from surface to ~1,862'
Tail 13.5 ppg CO2 compatible cement, from ~1,862' to ~8,752'

ERM

Appendix D.1
Completions Wellbore Schematic for Rose CCS Project
Injection Well No. 02
Rose Carbon Capture and Storage Project
ExxonMobil Low Carbon Solutions Onshore Storage LLC
Jefferson County, TX

CONFIDENTIAL BUSINESS INFORMATION

API No. 42-245-32911

Drilling Permit # 898449

SWR Exception

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

APPLICATION FOR PERMIT TO DRILL, RECOMPLETE, OR RE-ENTER

This facsimile W-1 was generated electronically from data submitted to the RRC.
A certification of the automated data is available in the RRC's Austin office.

FORM W-1 07/2004

Permit Status: Approved

1. RRC Operator No.: 101256

2. Operator's Name (as shown on form P-5, Organization Report): EXXONMOBIL LOW C SOL ON STOR LLC

3. Operator Address (include street, city, state, zip): ATTN EDWARD E GRAHAM, 22777 SPRINGWOODS VILLAGE PKWY, SPRING, TX 77389-0000

4. Lease Name: BEAD FARM CO.

5. Well No.: 2

GENERAL INFORMATION

6. Purpose of filing (mark ALL appropriate boxes): [X] New Drill [ ] Recompletion [ ] Reclass [ ] Field Transfer [ ] Re-Enter [ ] Amended [ ] Amended as Drilled (BHL) (Also File Form W-1D)

7. Wellbore Profile (mark ALL appropriate boxes): [X] Vertical [ ] Horizontal (Also File Form W-1H) [ ] Directional (Also File Form W-1D) [ ] Sidetrack

8. Total Depth: 10000

9. Do you have the right to develop the minerals under any right-of-way ? [X] Yes [ ] No

10. Is this well subject to Statewide Rule 36 (hydrogen sulfide area)? [ ] Yes [X] No

SURFACE LOCATION AND ACREAGE INFORMATION

11. RRC District No.: 03

12. County: JEFFERSON

13. Surface Location [X] Land [ ] Bay/Estuary [ ] Inland Waterway [ ] Offshore

14. This well is to be located 4.5 miles in a SE direction from China which is the nearest town in the county of the well site.

15. Section: 41

16. Block:

17. Survey: T&NO RR CO

18. Abstract No.: A-266

19. Distance to nearest lease line: ft.

20. Number of contiguous acres in lease, pooled unit, or unitized tract: 470

21. Lease Perpendiculars: 692 ft from the WEST line and 2409 ft from the SOUTH line.

22. Survey Perpendiculars: 1535 ft from the WEST line and 2409 ft from the SOUTH line.

23. Is this a pooled unit? [ ] Yes [X] No

24. Unitization Docket No:

25. Are you applying for Substandard Acreage Field? [ ] Yes (attach Form W-1A) [X] No

FIELD INFORMATION — List all fields of anticipated completion including Wildcat. List one zone per line.

26. RRC District No.	27. Field No.	28. Field Name (exactly as shown in RRC records)	29. Well Type	30. Completion Depth	31. Distance to Nearest Well in this Reservoir	32. Number of Wells on this lease in this Reservoir
03	00006001	WILDCAT	Exploratory Test Well	8800	0.00	1

BOTTOMHOLE LOCATION INFORMATION is required for DIRECTIONAL, HORIZONTAL, AND AMENDED AS DRILLED PERMIT APPLICATIONS

Remarks

[RRC STAFF Mar 28, 2024 4:31 PM]: There have been problems identified with this permit (see problem letter attachment). Notification sent.; [RRC STAFF Apr 4, 2024 3:00 PM]: Problems identified with this permit are resolved.; [RRC STAFF Apr 4, 2024 3:06 PM]: Changed survey line call from 692' W to 1535' W per plat.; [RRC STAFF Apr 4, 2024 3:07 PM]: Amended plat uploaded.

RRC Use Only Data Validation Time Stamp: Mar 26, 2025 1:51 PM(Current Version)

Certificate:

I certify that information stated in this application is true and complete, to the best of my knowledge.

Josh Calkin — Name of filer

Mar 27, 2024 — Date submitted

(281)702-5537 — Phone

Josh.Calkin@erm.com — E-mail Address (OPTIONAL)

CONFIDENTIAL BUSINESS INFORMATION

Railroad Commission of Texas

PERMIT TO DRILL, RE-COMPLETE, OR RE-ENTER ON REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

CONDITIONS AND INSTRUCTIONS

Permit Invalidation. It is the operator's responsibility to make sure that the permitted location complies with Commission density and spacing rules in effect on the spud date. The permit becomes invalid automatically if, because of a field rule change or the drilling of another well, the stated location is not in compliance with Commission field rules on the spud date. If this occurs, application for an exception to Statewide Rules 37 and 38 must be made and a special permit granted prior to spudding. Failure to do so may result in an allowable not being assigned and/or enforcement procedures being initiated.

Notice Requirements. Per H.B 630, signed May 8, 2007, the operator is required to provide notice to the surface owner no later than the 15th business day after the Commission issues a permit to drill. Please refer to subchapter Q Sec. 91.751-91.755 of the Texas Natural Resources Code for applicability.

Permit expiration. This permit expires two (2) years from the date of issuance shown on the original permit. The permit period will not be extended.

Drilling Permit Number. The drilling permit number shown on the permit MUST be given as a reference with any notification to the district (see below), correspondence, or application concerning this permit.

Rule 37 Exception Permits. This Statewide Rule 37 exception permit is granted under either provision Rule 37 (h)(2)(A) or 37(h)(2)(B). Be advised that a permit granted under Rule 37(h)(2)(A), notice of application, is subject to the General Rules of Practice and Procedures and if a protest is received under Section 1.3, "Filing of Documents," and/or Section 1.4, "Computation of Time," the permit may be deemed invalid.

Before Drilling

Fresh Water Sand Protection. The operator must set and cement sufficient surface casing to protect all usable-quality water, as defined by the Railroad Commission of Texas (RRC) Groundwater Advisory Unit (GWAU). Before drilling a well, the operator must obtain a letter from the Railroad Commission of Texas stating the depth to which water needs protection, Write: Railroad Commission of Texas, Groundwater Advisory Unit (GWAU), P.O. Box 12967, Austin, TX 78711-3087. File a copy of the letter with the appropriate district office.

Accessing the Well Site. If an OPERATOR, well equipment TRANSPORTER or WELL service provider must access the well site from a roadway on the state highway system (Interstate, U.S. Highway, State Highway, Farm-to-Market Road, Ranch-to-Market Road, etc.), an access permit is required from TxDOT. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

Water Transport to Well Site. If an operator intends to transport water to the well site through a temporary pipeline laid above ground on the state's right-of-way, an additional TxDOT permit is required. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

*NOTIFICATION

The operator is **REQUIRED** to notify the district office when setting surface casing, intermediate casing, and production casing, or when plugging a dry hole. The district office **MUST** also be notified if the operator intends to re-enter a plugged well or re-complete a well into a different regulatory field. Time requirements are given below. The drilling permit number **MUST** be given with such notifications.

During Drilling

Permit at Drilling Site. A copy of the Form W-1 Drilling Permit Application, the location plat, a copy of Statewide Rule 13 alternate surface casing setting depth approval from the district office, if applicable, and this drilling permit must be kept at the permitted well site throughout drilling operations.

***Notification of Setting Casing.** The operator MUST call in notification to the appropriate district office (phone number shown the on permit) a minimum of eight (8) hours prior to the setting of surface casing, intermediate casing, AND production casing. The individual giving notification MUST be able to advise the district office of the drilling permit number.

***Notification of Re-completion/Re-entry.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of eight (8) hours prior to the initiation of drilling or re-completion operations. The individual giving notification MUST be able to advise the district office of the drilling permit number.

Completion and Plugging Reports

Hydraulic Fracture Stimulation using Diesel Fuel: Most operators in Texas do not use diesel fuel in hydraulic fracturing fluids. Section 322 of the Energy Policy Act of 2005 amended the Underground Injection Control (UIC) portion of the federal Safe Drinking Water Act (42 USC 300h(d)) to define "underground Injection" to *EXCLUDE* " ...the underground injection of fluids or propping agents (*other than diesel fuels*) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities." (italic and underlining added.) Therefore, hydraulic fracturing may be subject to regulation under the federal UIC regulations if diesel fuel is injected or used as a propping agent. EPA defined "diesel fuel" using the following five (5) Chemical Abstract Service numbers: 68334-30-5 Primary Name: Fuels, diesel; 68476-34-6 Primary Name: Fuels, diesel, No. 2; 68476-30-2 Primary Name: Fuel oil No. 2; 68476-31-3 Primary Name: Fuel oil, No. 4; and 8008-20-6 Primary Name: Kerosene. As a result, an injection well permit would be required before performing hydraulic fracture stimulation using diesel fuel as defined by EPA on any well in Texas. Hydraulic fracture stimulation using diesel fuel as defined by EPA on a well in Texas without an injection well permit could result in enforcement action.

Producing Well. Statewide Rule 16 states that the operator of a well shall file with the Commission the appropriate completion report within ninety (90) days after completion of the well or within one hundred and fifty (150) days after the date on which the drilling operation is completed, whichever is earlier. Completion of the well in a field authorized by this permit voids the permit for all other fields included in the permit unless the operator indicates on the initial completion report that the well is to be a dual or multiple completion and promptly submits an application for multiple completion. All zones are required to be completed before the expiration date on the existing permit. Statewide Rule 40(d) requires that upon successful completion of a well in the same reservoir as any other well previously assigned the same acreage, proration plats and P-15s or P-16s (if required) or a lease plat and P-16 must be submitted with no double assignment of acreage unless authorized by rule.

Dry or Noncommercial Hole. Statewide Rule 14(b)(2) prohibits suspension of operations on each dry or non-commercial well without plugging unless the hole is cased and the casing is cemented in compliance with Commission rules. If properly cased, Statewide Rule 14(b)(2) requires that plugging operations must begin within a period of one (1) year after drilling or operations have ceased. Plugging operations must proceed with due diligence until completed. An extension to the one-year plugging requirement may be granted under the provisions stated in Statewide Rule 14(b)(2).

Intention to Plug. The operator must file a Form W-3A (Notice of Intention to Plug and Abandon) with the district office at least five (5) days prior to beginning plugging operations. If, however, a drilling rig is already at work on location and ready to begin plugging operations, the district director or the director's delegate may waive this requirement upon request, and verbally approve the proposed plugging procedures.

***Notification of Plugging a Dry Hole.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of four (4) hours prior to beginning plugging operations. The individual giving the notification MUST be able to advise the district office of the drilling permit number and all water protection depths for that location as stated in the Groundwater Advisory Unit letter.

DIRECT INQUIRIES TO: DRILLING PERMIT SECTION, OIL AND GAS DIVISION

PHONE
(512) 463-6751

MAIL:
PO Box 12967
Austin, Texas, 78711-2967

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER	DATE PERMIT ISSUED OR AMENDED	DISTRICT
898449	Apr 04, 2024	* 03
API NUMBER	**FORM W-1 RECEIVED**	**COUNTY**
42-245-32911	Mar 27, 2024	JEFFERSON
TYPE OF OPERATION	**WELLBORE PROFILE(S)**	**ACRES**
NEW DRILL	Vertical	470

OPERATOR 101256

EXXONMOBIL LOW C SOL ON STOR LLC

ATTN EDWARD E GRAHAM
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389-0000

NOTICE

This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored.

District Office Telephone No:
(713) 869-5001

LEASE NAME	WELL NUMBER
BEAD FARM CO.	2
LOCATION	**TOTAL DEPTH**
4.5 miles SE direction from CHINA	10000

Section, Block and/or Survey

SECTION 41 BLOCK ABSTRACT 266

SURVEY T&NO RR CO

DISTANCE TO SURVEY LINES	DISTANCE TO NEAREST LEASE LINE
1535 ft. WEST 2409 ft. SOUTH	ft.
DISTANCE TO LEASE LINES	**DISTANCE TO NEAREST WELL ON LEASE**
692 ft. WEST 2409 ft. SOUTH	See FIELD(s) Below

FIELD(s) and LIMITATIONS:

* SEE FIELD DISTRICT FOR REPORTING PURPOSES *

FIELD NAME / LEASE NAME	ACRES / NEAREST LEASE	DEPTH	WELL # / NEAREST WE	DIST
WILDCAT	470.00	8,800	2	03
BEAD FARM CO.			0	

RESTRICTIONS: For exploratory test only

THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS

This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.

This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

SWR #13 Formation Data

JEFFERSON (245) County

Formation	Remarks	Geological Order	Effective Date
LAFAYETTE	disposal	1	12/17/2013
CAPROCK	disposal	2	12/17/2013
SPINDLETOP SALT DOME	disposal	3	12/17/2013
FANNETT SALT DOME	disposal	4	12/17/2013
BIG HILL SALT DOME	disposal	5	12/17/2013
PLEISTOCENE-LISSIE	disposal	6	12/17/2013
MIOCENE	disposal	7	12/17/2013
FRIO	disposal	8	12/17/2013
MARINULINA	disposal	9	12/17/2013
HETEROSTEGINA	disposal	10	12/17/2013

The above list may not be all inclusive, and may also include formations that do not intersect all wellbores. The listing order of the Formation information reflects the general stratigraphic order and relative geologic age. This is a dynamic list subject to updates and revisions. It is the operator's responsibility to make sure that at the time of spudding the well the most current list is being referenced. Refer to the RRC website at the following address for the most recent information.
http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info

CONFIDENTIAL BUSINESS INFORMATION

GROUNDWATER PROTECTION DETERMINATION

Form GW-2

Groundwater Advisory Unit

Date Issued:	31 December 2024	**GAU Number:**	389717

Attention:	EXXONMOBIL LOW C SOL ON ATTN EDWARD E GRAHAM SPRING, TX 77389	**API Number:**	24532911
		County:	JEFFERSON
		Lease Name:	Bead Farm Co.
		Lease Number:	
Operator No.:	101256	**Well Number:**	2
		Total Vertical	10000
		Latitude:	29.990801
		Longitude:	-94.297850
		Datum:	NAD27

Purpose: Injection into Non-producing Zone (W-14)

Location: Survey-T&NO RR CO; Abstract-266; Section-41

To protect usable-quality groundwater at this location, the Groundwater Advisory Unit of the Railroad Commission of Texas recommends:

This Initial Recommendation is for the purpose of Class VI injection only.

Usable-quality water occurs from the land surface to a depth of 1,200 feet. Moreover, the interval from the land surface to a depth of 700 feet contains water of superior quality which must be isolated from water in underlying beds.

The BASE OF UNDERGROUND SOURCES OF DRINKING WATER (USDW) is estimated to occur at a depth of 1,450 feet at the site of the referenced well.

*(SIP Purpose Only) Water Code Section 27.046(a) requires the GAU to issue a GW-2 letter containing Non-Endangerment language prior to issuance of a class VI permit. An additional letter will be required before SIP can issue a final permit because this letter is silent on endangerment of fresh water. *

Note: Unless stated otherwise, this recommendation is intended to apply to all wells drilled within 200 feet of the subject well. Unless stated otherwise, this recommendation is for normal drilling, production, and plugging operations only.

This determination is based on information provided when the application was submitted on 12/19/2024. If the location information has changed, you must contact the Groundwater Advisory Unit, and submit a new application if necessary. If you have questions, please contact us at 512-463-2741 or gau@rrc.texas.gov.

Groundwater Advisory Unit, Oil and Gas Division

CONFIDENTIAL BUSINESS INFORMATION

GROUNDWATER PROTECTION DETERMINATION

Form GW-2

Groundwater Advisory Unit

Date Issued:	11 February 2025	**GAU Number:**	390198

Attention:	EXXONMOBIL LOW C SOL ON ATTN EDWARD E GRAHAM SPRING, TX 77389	**API Number:**	24532911
		County:	JEFFERSON
		Lease Name:	Bead Farm Co.
		Lease Number:	
Operator No.:	101256	**Well Number:**	2
		Total Vertical	10000
		Latitude:	29.990801
		Longitude:	-94.297850
		Datum:	NAD27

Purpose: Injection into Non-producing Zone (W-14)

Location: Survey-T&NO RR CO; Abstract-266; Section-41

To protect usable-quality groundwater at this location, the Groundwater Advisory Unit of the Railroad Commission of Texas recommends:

This Recommendation is for the purpose of Class VI injection only.

Usable-quality water occurs from the land surface to a depth of 1,200 feet. Moreover, the interval from the land surface to a depth of 700 feet contains water of superior quality which must be isolated from water in underlying beds.

The BASE OF UNDERGROUND SOURCES OF DRINKING WATER (USDW) is estimated to occur at a depth of 1,450 feet at the site of the referenced well.

This recommendation is applicable to an area extent within a radius of 0.8 mile of this location.

The vertical geological isolation from both bases of usable quality water and underground source of drinking water is at 3,200 feet in TVD depth (for UIC Purpose Only).

Injection into the subsurface interval from 3,400 to 8,600 feet in TVD depth, as proposed in the submitted W14 (Class VI) application dated on December 18th of 2024 , WILL NOT ENDANGER the PROTECTED WATER STRATA geologically at the proposed location in this area (for UIC Purpose Only).

Note: Unless stated otherwise, this recommendation is intended to apply to all wells drilled within 200 feet of the subject well. Unless stated otherwise, this recommendation is for normal drilling, production, and plugging operations only.

This determination is based on information provided when the application was submitted on 01/22/2025. If the location information has changed, you must contact the Groundwater Advisory Unit, and submit a new application if necessary. If you have questions, please contact us at 512-463-2741 or gau@rrc.texas.gov.

Groundwater Advisory Unit, Oil and Gas Division

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

Form W-2

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

Status: Approved
Date: 02/20/2025
Tracking No.: 326169

OIL WELL POTENTIAL TEST, COMPLETION OR RECOMPLETION REPORT,

OPERATOR INFORMATION

Operator EXXONMOBIL LOW C SOL ON STOR LLC **Operator** 101256
Operator ATTN EDWARD E GRAHAM 22777 SPRINGWOODS VILLAGE PKWY SPRING, TX 77389-0000

WELL INFORMATION

API 42-245-32911 **County:** JEFFERSON
Well No.: 2 **RRC District** 03
Lease BEAD FARM CO. **Field** WILDCAT
RRC Lease 28125 **Field No.:** 00006001
Location Section: 41, Block: , Survey: T&NO RR CO, Abstract: 266

Latitude 29 **Longitud** -94
This well is 4.5 **miles in a** SE **direction from** CHINA, **which is the nearest town in the**

FILING INFORMATION

Purpose of Well Record Only
Type of New Well
Well Type: Shut-In Producer **Completion or Recompletion** 10/09/2024

Type of Permit	Date	Permit No.
Permit to Drill, Plug Back, or	04/04/2024	898449
Rule 37 Exception		
Fluid Injection		
O&G Waste Disposal		
Other:		

COMPLETION INFORMATION

Spud 07/15/2024 **Date of first production after rig** 10/09/2024
Date plug back, deepening, drilling operation 07/15/2024 **Date plug back, deepening, recompletion, drilling operation** 10/09/2024
Number of producing wells on this lease this field (reservoir) including this 0 **Distance to nearest well in lease & reservoir** 0.0
Total number of acres in 470.00 **Elevation** 22 GL
Total depth TVD 8752 **Total depth MD**
Plug back depth TVD 8650 **Plug back depth MD**
Was directional survey made other inclination (Form W- No **Rotation time within surface casing Is Cementing Affidavit (Form W-15)** 55.5 Yes
Recompletion or No **Multiple** No
Type(s) of electric or other log(s) Gamma Ray (MWD)
Electric Log Other Description:
Location of well, relative to nearest lease of lease on which this well is 692.0 **Feet from the** West **Line and** 2409.0 **Feet from the** South **Line of the** BEAD FARM CO. **Lease.** **Off Lease :** No

FORMER FIELD (WITH RESERVOIR) & GAS ID OR OIL LEASE NO.

Field & Reservoir	Gas ID or Oil Lease	Well No.	Prior Service Type

PACKET: N/A

W2: N/A

FOR NEW DRILL OR RE-ENTRY, SURFACE CASING DEPTH DETERMINED BY:

GAU Groundwater Protection Determination		**Depth**	1100.0	**Date**	03/21/2024
SWR 13 Exception		**Depth**	2265.0		

INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION

Date of		**Production**	
Number of hours	24	**Choke**	
Was swab used during this	No	**Oil produced prior to**	

PRODUCTION DURING TEST PERIOD:

Oil		**Gas**	
Gas - Oil	0	**Flowing Tubing**	
Water			

CALCULATED 24-HOUR RATE

Oil		**Gas**	
Oil Gravity - API - 60.:		**Casing**	
Water			

CASING RECORD

Ro	Type of Casing	Casing Size (in.)	Hole Size	Setting Depth	Multi - Stage Tool	Multi - Stage Shoe	Cement Class	Cement Amoun	Slurry Volume (cu.	Top of Cement (ft.)	TOC Determined By
1	Surface	13 3/8	17 1/2	2244			H	1115	2210.4	0	Circulated to Surface
2	Conductor	20	26	120			A	230	274.0	0	Circulated to Surface
3	Conventional Production	9 5/8	12 1/4	8731			H	2010	3804.0	0	Circulated to Surface

LINER RECORD

Ro	Liner Size	Hole Size	Liner Top	Liner Bottom	Cement Class	Cement Amoun	Slurry Volume (cu.	Top of Cement (ft.)	TOC Determined

N/A

TUBING RECORD

Ro	Size (in.)	Depth Size (ft.)	Packer Depth (ft.)/Type
1	7	7491	7491 / WIRELINE SET, PERMANENT

PRODUCING/INJECTION/DISPOSAL INTERVAL

Ro	Open hole?	From (ft.)	To (ft.)
1	No	L 7540	7769.0
2	No	L 7962	8026.0
3	No	L 8107	8124.0
4	No	L 8143	8160.0

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC.

Was hydraulic fracturing treatment No

Is well equipped with a downhole sleeve? No

If yes, actuation pressure

Production casing test pressure (PSIG)

Actual maximum pressure (PSIG) during hydraulic fracturing

fracturin

Has the hydraulic fracturing fluid disclosure been

No

Ro	Type of Operation	Amount and Kind of Material Used	Depth Interval (ft.)	
1	Other	PERFORATIONS	7540	8160

FORMATION RECORD

Formations	Encountere	Depth TVD	Depth MD	Is formation	Remarks
LAFAYETTE - DISPOSAL	No			No	MUD LOGGING AND CUTTING SAMPLES WERE NOT COLLECTED IN THE SHALLOW HOLE SECTION. THEREFORE, SHALLOW FORMATIONS ENCOUNTERED COULD NOT BE CONFIRMED AS LAFAYETTE AND/OR PLEISTOCENE.
CAPROCK - DISPOSAL	No			No	NOT ENCOUNTERED
SPINDLETOP SALT DOME - DISPOSAL	No			No	NOT ENCOUNTERED
FANNETT SALT DOME - DISPOSAL	No			No	NOT ENCOUNTERED
BIG HILL SALT DOME - DISPOSAL	No			No	NOT ENCOUNTERED
PLEISTOCENE-LISSIE - DISPOSAL	No			No	MUD LOGGING AND CUTTING SAMPLES WERE NOT COLLECTED IN THE SHALLOW HOLE SECTION. THEREFORE, SHALLOW FORMATIONS ENCOUNTERED COULD NOT BE CONFIRMED AS LAFAYETTE AND/OR PLEISTOCENE.
MIOCENE - DISPOSAL	Yes	3582.0	3583.0	Yes	LOGGED
FRIO - DISPOSAL	Yes	6621.0	6622.0	Yes	LOGGED - PERFORATIONS IN THE LOWER FRIO SAND FROM 7,540'-8,160'
MARINULINA - DISPOSAL	Yes	6208.1	6208.0	Yes	LOGGED
HETEROSTEGINA - DISPOSAL	Yes	6356.0	6357.0	Yes	LOGGED

Do the producing interval of this well produce H2S with a concentration in excess of 100 ppm No

Is the completion being downhole commingled No

REMARKS

THE WELL WAS PERFORATED AND SHUT IN. THIS WELL HAS NOT PRODUCED.

RRC REMARKS

PUBLIC COMMENTS:

CASING RECORD :

NONE.

TUBING RECORD:

PRODUCING/INJECTION/DISPOSAL INTERVAL :

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC. :

POTENTIAL TEST DATA:

OPERATOR'S CERTIFICATION

Printed	Josh Calkin	**Title:**	
Telephone	(281) 702-5537	**Date**	02/10/2025

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name: Exxon Mobil 100 Carbon Solutions	Operator P-5 No.: 101256
Cementer Name: Halliburton	Cementer P-5 No.: 347151

WELL INFORMATION

District No.: 3	County: Jefferson
Well No.: Bead Farm CO. #2	API No.: 42-245-32911 / Drilling Permit No.: 898449
Lease Name: Bead Farm CO. #2	Lease No.:
Field Name: Wildcat	Field No.:

I. CASING CEMENTING DATA

Type of casing: ☐ Conductor ☑ Surface ☐ Intermediate ☐ Liner ☐ Production

Drilled hole size (in.): 17.5"	Depth of drilled hole (ft.): 2254	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.): 13 3/8"	Casing weight (lbs/ft) and grade: 68# J55	No. of centralizers used: 19
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☑ YES ☐ NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 2244	Top of liner (ft.): / Setting depth liner (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date: 7/17/2024

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	730	A	SEE RAMARKS	1719.15	2158
2	385	XH	SEE REMARKS	491.26	654
3					
Total	1115			2210.41	2812

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth shoe (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth tool (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS

909463543,EXXONMOBIL LOW CARBON-EBUS,Bead Farm CO #2,SURFACE:
SLURRY 1:EconoCem , SLURRY 2:HALCem

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

ZOUHIR ROUBACHE	Halliburton		
Name and title of cementer's representative	Cementing Company	Signature	
4720 Industrial	Bossier City, LA 71112	903-986-5096	7/17/2024
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

James Harvey	Operations Supervisor		
Typed or printed name of operator's representative	Title	Signature	
22777 Springwoods Village	Spring Tx 77389	512 949 8272	7/17/24
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

A. **What to file:** An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on one form.

The Form W-15 should be filed with the Form W-3, Plugging Record, unless the Form W-3 is signed by the cementing company representative. When reporting dry holes, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.

B. **How to file:** An oil and gas completion report and Form W-15 may be filed online using the Commission's Online System (https://webapps.rrc.state.tx.us/security/login.do) or a paper copy of the form may be mailed to the Commission in Austin (P.O. Box 12967, Austin, Texas 78711-2967).

C. **Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.

To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 (http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.

D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing **and** Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name:	Bryd Oilfield	Operator P-5 No.:	
Cementer Name:	CUDD Pumping Services	Cementer P-5 No.:	191917

WELL INFORMATION

District No.:		County:	Jefferson		
Well No.:	#2	API No.:		Drilling Permit No.:	
Lease Name:	Bead Farm Co	Lease No.:			
Field Name:		Field No.:			

I. CASING CEMENTING DATA

Type of casing: [X] Conductor [ ] Surface [ ] Intermediate [ ] Liner [ ] Production

Drilled hole size (in.): 26	Depth of drilled hole (ft.): 120	Est. % wash-out or hole enlargement: 30	
Size of casing in O.D. (in.): 20	Casing weight (lbs/ft) and grade: 78.6 ppf X-52 (Welded)	No. of centralizers used:	
Was cement circulated to ground surface (or bottom of cellar) outside casing? [X] YES [ ] NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 120	Top of liner (ft.):	Setting depth liner (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.): 0	Cementing date: 7/2/2024	

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	230	Class A	Plus Adds	274	182
2					
3					
Total	230			274	182

II. CASING CEMENTING DATA

Type of casing: [ ] Surface [ ] Intermediate [ ] Production [ ] Tapered production [ ] Multi-stage cement shoe [ ] Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:	
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:	
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:		
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:	
Was cement circulated to ground surface (or bottom of cellar) outside casing? [ ] YES [ ] NO	Setting depth shoe (ft.):		
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:	

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

III. CASING CEMENTING DATA

Type of casing: [ ] Surface [ ] Intermediate [ ] Production [ ] Tapered production [ ] Multi-stage cement/DV tool [ ] Multiple parallel strings

Drilled hole size	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:	
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:	
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:		
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:	
Was cement circulated to ground surface (or bottom of cellar) outside casing? [ ] YES [ ] NO	Setting depth tool (ft.):		
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:	

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date				-	-	-	-
Size of hole of pipe (in.)	-	-	-	-	-	-	-
Depth to bottom of tubing or drill pipe (ft.)	-	-	-	-	-	-	-
Cement retainer setting depth (ft.)	-	-	-	-	-	-	-
CIBP setting depth (ft.)	-	-	-	-	-	-	-
Amount of cement on top of CIBP (ft.)	-	-	-	-	-	-	-
Sacks of cement used				-	-	-	-
Slurry volume pumped (cu. ft.)				-	-	-	-
Calculated top of plug (ft.)				-	-	-	-
Measured top of plug, if tagged (ft.)			-	-	-	-	-
Slurry weight (lbs/gal)				-	-	-	-
Class/type of cement				-	-	-	-
Perforate and squeeze (YES/NO)	-	-	-	-	-	-	-

REMARKS	
1	**10 Bbls of cement to surface**
2	
3	
4	

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

KELSI BARNETT	Service Supervisor	CUDD Pumping Services	Kelsi Barnett
Name and title of cementer's representative		Cementing Company	Signature

1434 CR 422	Pleasanton	TX	78064	(830)-254-4200	7/2/2024
Address	City,	State, Zip Code		Tel: Area Code Number	Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that the data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

Michael Mathis	Rig Supervisor	
Typed or printed name of operator's representative	Title	Signature

			512	949-8272	7/2/2024
Address	City,	State, Zip Code		Tel: Area Code	Number Date:

Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

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C. **Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.

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D. **Estimated % wash-out:** If the estimated % wash-outis less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing **and** Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

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G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name: ExxonMobil Low Carbon Solution	Operator P-5 No.: 101256
Cementer Name: Halliburton	Cementer P-5 No.: 347151

WELL INFORMATION

District No.: 3	County: Jefferson	
Well No.: Bead Farm Co. #2	API No.: 42-245-32911	Drilling Permit No.: 898449
Lease Name: Bead Farm Co. #2	Lease No.:	
Field Name: Wildcat	Field No.:	

I. CASING CEMENTING DATA

Type of casing: ☐ Conductor ☐ Surface ☐ Intermediate ☐ Liner ☒ Production

Drilled hole size (in.): 12-1/4"	Depth of drilled hole (ft.): 8752'	Est. % wash-out or hole enlargement: 0%
Size of casing in O.D. (in.): 9-5/8"	Casing weight (lbs/ft) and grade: 47/53.5 ppf L80/13Cr/25Cr	No. of centralizers used: 179
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☑ YES ☐ NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 8731'	Top of liner (ft.):
		Setting depth liner (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.): 0	Cementing date: 8-1-2024

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	735	H	N/A	1341	1907
2	1275	H	N/A	2463	6826
3					
Total	2010			3804	8733

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth shoe (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth tool (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS

EXXON, BEAD FARM CO, #2, PRODUCTION

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JEROD HACK, SERVICE SUPERVISOR	Halliburton			
Name and title of cementer's representative	Cementing Company		Signature	
4720 Industrial	Bossier City, LA 71112		903-986-5096	8-1-2024
Address	City, State, Zip Code		Tel: Area Code Number	Date: mo. day yr.

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MICHAEL MATHIS	WELL OPERATIONS SUPERVISOR	
Typed or printed name of operator's representative	Title	Signature
	(512) 949-8272	08-1-2024
Address City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

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D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

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G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON | Sperry Drilling

DGR / EWR-P4 / DIR

Powered by INSITE™

1 : 500

MD Phase Attenuation Log

Country : USA
Field : WILDCAT
Location : Lat: 29° 59' 27.66" North Long: 94° 17' 52.93" West
Well : BEAD FARM CO. 2
Company : EXXONMOBIL LOW C SOL ON STOR LL
Rig : NABORS X33

Company	: EXXONMOBIL LOW C SOL ON STOR LL
Rig	: NABORS X33
Well	: BEAD FARM CO. 2
Field	: WILDCAT
Country	: USA
API Number	: 4224532911

LOCATION

Latitude : 29° 59' 27.66" North
Longitude : 94° 17' 52.93" West

StatePlane X = 3,456,559.210 usft
StatePlane Y = 13,937,806.680 usft

Other Services

Permanent Datum : Ground Level
Elevation : 25.90 ft
Log Measured From : Drill Floor
32.52 ft Above Permanent Datum
Drilling Measured From :

MD LOG

Elev. KB
DF 58.42 ft
GL 25.90 ft
WD

Depth Logged : 152.00 ft To 8,752.00 ft
Date Logged : 15-Jul-24 To 24-Jul-24
Total Depth MD : 8,752.00 ft TVD : 8,751.76 ft
Spud Date : 15-Jul-24

Unit No. : NA
Job No. : LF-XX-0909093079
Plot Type : Final
Plot Date : 06-Aug-24

Run No.	Borehole Record (MD)			Size	Casing Record (MD)		
	Size	From	To		Weight	From	To
100	17.500 in	152.00 ft	2,254.00 ft	20.000 in	78.60 lbpf	SURFACE	152.50 ft
200	12.250 in	2,254.00 ft	3,120.00 ft	13.375 in	68.00 lbpf	SURFACE	2,244.00 ft
201	12.250 in	3,120.00 ft	3,150.00 ft	9.625 in	47.00 lbpf	SURFACE	8,731.00 ft
300	12.250 in	3,150.00 ft	4,350.00 ft				
301	12.250 in	4,350.00 ft	4,410.00 ft				
400	12.250 in	4,410.00 ft	7,586.00 ft				
401	12.250 in	7,586.00 ft	7,647.00 ft				
500	12.250 in	7,647.00 ft	8,752.00 ft				

WELL INFORMATION

MWD Run Number	100	200	300	400	500
Date run completed	16-Jul-24	18-Jul-24	20-Jul-24	22-Jul-24	25-Jul-24
Rig Bit Number	100	200	300	400	500
Bit Size (in)	17.500	12.250	12.250	12.250	12.250
Tool Nominal OD (in)	8.000	8.000	8.000	8.000	8.000
Log Start Depth (MD, ft)	152.00	2,254.00	3,150.00	4,410.00	7,647.00
Log End Depth (MD, ft)	2,254.00	3,120.00	4,350.00	7,586.00	8,752.00
Drill or Wipe	Drill	Drill	Drill	Drill	Drill
Drill/Wipe Start Date and Time	15-Jul-24 09:55	18-Jul-24 12:02	19-Jul-24 18:40	21-Jul-24 09:21	24-Jul-24 05:40
Drill/Wipe End Date and Time	15-Jul-24 21:40	18-Jul-24 17:31	20-Jul-24 03:03	22-Jul-24 15:52	24-Jul-24 19:25
Min Inc (deg) @ Depth (MD, ft)	0.06 @ 956.00	0.42 @ 2,276.00	0.09 @ 4,323.00	0.18 @ 5,208.00	0.00 @ 8,035.00
Max Inc (deg) @ Depth (MD, ft)	0.97 @ 1,621.00	0.75 @ 2,656.00	0.45 @ 3,128.00	0.56 @ 4,538.00	0.44 @ 7,753.00
Bit TFA(in2) / Bit Type	1.23 / GT65s	1.23 / HD65s	1.23 / HD65s	1.23 / HD65s	1.23 / HD65s
Flow Rate (gpm)	700.00	690.00	690.00	700.00	696.00
Max AV (fpm) / CV (fpm) @ MWD	79.0 / 46.0	61.0 / 40.0	61.5 / 43.0	43.7 / 40.0	43.7 / 40.0
Fluid Type	Native/Spud Mud	Diesel Mud Base	Diesel Mud Base	Diesel Mud Base	Diesel Mud Base
Density (ppg) / Viscosity (spqt)	8.50 / 28.00	10.40 / 103.00	10.40 / 101.00	10.30 / 59.00	10.30 / 64.00
Filtrate CL (ppm)	1,100.00	46,000.00	46,000.00	67,000.00	63,000.00
pH / API Filtrate (mptm)	6.90 / 12	N/A / 12	N/A / 12	N/A / 20	N/A / 20
PV (cP) / YP (lhf2)	2 / 2.00	26 / 19.00	26 / 19.00	19 / 23.00	22 / 20.00
% Solids / % Sand	1 / .01	12.2 / 0.01	12 / .01	8.7 / 0.01	11.1 / 0.01
% Oil / Oil:Water Ratio	0 / 0:100	52 / 60:40	52 / 60:40	56 / 64:36	56 / 65:35
Rm @ Measured Temp (degF)	0.200 @ 74.00	N/A @ N/A	N/A @ N/A	N/A @ N/A	N/A @ N/A
Rmf @ Measured Temp (degF)	0.200 @ 74.00	N/A @ N/A	N/A @ N/A	N/A @ N/A	N/A @ N/A
Rmc @ Measured Temp (degF)	0.200 @ 74.00	N/A @ N/A	N/A @ N/A	N/A @ N/A	N/A @ N/A
Max Tool Temp (degF) / Source	113.18 / HCIM	129.00 / HCIM	141.41 / HCIM	162.00 / HCIM	165.00 / HCIM
Rm @ Max Tool Temp (degF)	N/A @ 113.18	N/A @ 129.00	N/A @ 141.41	N/A @ 162.00	N/A @ 165.00
Lead MWD Engineer	Coy Lorraine	Coy Lorraine	Coy Lorraine	Coy Lorraine	Coy Lorraine
Customer Representative	James Harvey	James Harvey	James Harvey	James Harvey	James Harvey

SENSOR INFORMATION

Downhole Processor Information

Tool Type	HCIM	HCIM	HCIM	HCIM	HCIM
Software Version	98.43	98.43	98.43	98.43	98.43
Sub Serial Number	11717163	11717163	11717163	11717163	11717163
Insert Serial Number	12522587	12522587	12522587	12522587	12522587
Date and Time Initialized	15-Jul-24 09:06	17-Jul-24 23:37	19-Jul-24 16:43	21-Jul-24 02:28	24-Jul-24 01:24
Date and Time Read	16-Jul-24 12:59	19-Jul-24 00:54	20-Jul-24 10:06	23-Jul-24 01:22	25-Jul-24 06:02
ECMB SW Version	N/A	N/A	N/A	N/A	N/A

Directional Sensor Information

Tool Type	PCDC	PCDC	PCDC	PCDC	PCDC
Distance From Bit (ft)	35.84	26.21	26.21	65.57	68.20
Software Version	6.43	6.43	6.43	6.43	6.43
Sub Serial Number	121840	121840	121840	121840	111
Sonde Serial Number	13008879	13008879	13008879	13008879	13008879
Sensor ID Number	N/A	N/A	N/A	N/A	N/A
Toolface Offset (deg)	0.00	0.00	0.00	282.46	271.38

Gamma Ray Sensor Information

Tool Type	DGR	DGR	DGR	DGR	DGR
Distance From Bit (ft)	25.26	15.63	15.63	54.99	57.62
Recorded Sample Period (sec)	4	4	4	4	4
Software Version	N/A	N/A	N/A	N/A	N/A
Sub Serial Number	13166196	13166196	13166196	13166196	13166196
Insert/Sonde Serial Number	11671530	11671530	11671530	11674530	11674530

Resistivity Sensor Information

Tool Type	EWR-P4				
Distance From Bit (ft)	11.03				
Recorded Sample Period (sec)	4				
Software Version	1.51				
Sub Serial Number	10673350				
Receiver Insert Serial Number	11827847				
Transmitter Insert Serial Number	11707807				
Receiver Orientation	Down				

REMARKS

All depths are referenced to the driller's pipe tally.

DGXT - Gamma Ray formation exposure time
EWXT - Resistivity formation exposure time

Default 1:500 Log Smoothing:
Interval Resolution: 0.5ft
Window Interval:(+/-) 0.6ft
Gap Fill: 3.0ft

Archive Name: BEAD_FARM_CO_2_500MD_PHASE_ATTEN_152_8752

Plot Width: 8.25 in

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
Oil and Gas Division
Tracking No.: 326169

ELECTRIC LOG STATUS REPORT

This facsimile L-1 was generated electronically from data submitted to the RRC.

FORM L-1

Instructions

When to File Form L-1:
- with Forms G-1, W-2, and GT-1 for new and deepened gas, oil, and geothermal wells
- with Form W-3 for plugged dry holes
- when sending in a log which was held under a request for confidentiality and the period for confidentiality has not yet expired.

When is Form L-1 NOT required:
- with Forms W-2, G-1, and GT-1 filed for injection wells, disposal wells, water supply wells, service wells, re-test wells, re-classifications, and plugbacks of oil, gas or geothermal wells
- with Form W-3 for plugging of other than a dry hole

Where to File Form L-1:
- with the appropriate Commission district office

Filling out Form L-1:
- Section I and the signature section must be filled out for all wells
- complete only the appropriate part of Section II

Type of log required:
- any wireline survey run for the purpose of obtaining lithology, porosity, or resistivity information
- no more than one such log is required but it must be of the subject well
- if such log is NOT run on the subject well, do NOT substitute any other type of log; just select Section II, Part A below

SECTION I. IDENTIFICATION

Operator Name: EXXONMOBIL LOW C SOL ON STOR LLC	District No. 03	Completion Date: 10/09/2024
Field Name WILDCAT	Drilling Permit No. 898449	
Lease Name BEAD FARM CO.	Lease/ID No. 28125	Well No. 2
County JEFFERSON	API No. 42- 245-32911	

SECTION II. LOG STATUS (Complete either A or B)

☐ A. BASIC ELECTRIC LOG NOT RUN

☒ B. BASIC ELECTRIC LOG RUN. (Select one)

☒ 1. Confidentiality is requested and a copy of the header for each log that has been run on the well is attached.

☐ 2. Confidentiality already granted on basic electric log covering this interval (applicable to deepened wells only).

☐ 3. Basic electric log covering this interval already on file with Commission (applicable to deepened wells only).

☐ 4. Log attached to (select one):

☐ (a) Form L-1 (this form). If the company/lease name on log is different from that shown in Section I, please enter name on log here: _____

Check here if attached log is being submitted after being held confidential. ☐

☐ (b) Form P-7, Application for Discovery Allowable and New Field Designation.

☐ (c) Form W-4, Application for Multiple Completion:

Lease or ID No(s). _____

Well No(s). _____

Josh Calkin
Signature

Title

EXXONMOBIL LOW C SOL ON STOR LLC
Name (print)

(281) 702-5537
Phone

12/18/2024
Date

-FOR RAILROAD COMMISSION USE ONLY-

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON

4607 HWY 90 EAST • BROUSSARD, LA 70518

PHONE 337 837 3061 • FAX 337 837 4400

Jefferson County,
State of Texas

I, **Kristen Killen,** certify that: I am employed by Halliburton Energy Service and that I did on the day(s) of **July 15, 2024 to July 24, 2024** conduct or supervise the taking of Directional Surveys as follow:

- **204' to a depth of 8682' MWD surveys performed by Sperry Drilling MWD**
- **Final survey is projected to a total depth of 8752'**

I certify that the data is true, correct, complete and within the limitations of the tool as set forth by Halliburton Energy Services. I further certify that I am authorized and qualified to make this report, that this survey was conducted at the request of **EXXONMOBIL LOW C SOL ON STOR LLC** for the **BEAD FARM CO. 2** in **Jefferson County, TX,** and that I have reviewed this report and find that it conforms to the principles and procedures set forth by Halliburton Energy Service for quality well surveying.

Kristen Killen, Log Analyst

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON
4607 HWY 90 EAST • BROUSSARD, LA 70518
PHONE 337 837 3061 • FAX 337 837 4400

July 31, 2024

Railroad Commission of Texas
Oil and Gas Division
P.O. Box 12967
Capital Station
Austin, TX 78711

Re: EXXONMOBIL LOW C SOL ON STOR LLC
R.R.C. Operator No. 101256
BEAD FARM CO. 2
Permit No. 898449
Jefferson County, TX
API # 42-245-32911

Attention: Ms. Pam Johns

Enclosed, please find one copy of the survey performed on the above referenced well by Halliburton Energy Services, Inc. Operator #347-151.

Other information required by your office is as follows:

Name & Title of Surveyor	-	Kristen Killen, Log Analyst
Drainhole Number	-	Original
Surveyed Depths	-	204' – 8682' MWD Surveys performed by Sperry Drilling
Dates Performed	-	July 15, 2024 to July 24, 2024
Type of Survey	-	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the listed e-mail address.

Respectfully,

Kristen Killen
Log Analyst
Kristen.Killen@Halliburton.com
Halliburton / Sperry Drilling

Enclosures
RE: LA-MM 908567108

CONFIDENTIAL BUSINESS INFORMATION

ExxonMobil

Jefferson County, Tx_NAD83
Rose Prospect CCS
Bead Farm Co. #2
4224532911
002 ST00BP00

Design: 002 ST00BP00

Sperry Drilling Services

Geodetic Report

06 August, 2024

Well Coordinates: 13,937,806.68 N, 3,456,559.21 E (29° 59' 27.66" N, 094° 17' 52.93" W)
Ground Level: 25.90 usft

Local Coordinate Origin:	Centered on Well Bead Farm Co. #2
Viewing Datum:	(32.52') Nabors X-33 @ 58.42usft (Spud)
TVDs to System:	N
North Reference:	Grid
Unit System:	API US Survey Feet

Version: 5000.17 Build: 02

HALLIBURTON

Design Report for Bead Farm Co. #2 - 002 ST00BP00

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude (usft)	Geographic Coordinates Longitude (usft)	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	29° 59' 27.655 N	94° 17' 52.927 W	13,937,806.68	3,456,559.21
204.00	0.92	282.45	203.99	0.35	-1.60	29° 59' 27.659 N	94° 17' 52.945 W	13,937,807.03	3,456,557.61
317.00	0.69	283.37	316.98	0.71	-3.15	29° 59' 27.663 N	94° 17' 52.962 W	13,937,807.39	3,456,556.06
409.00	0.59	277.83	408.97	0.90	-4.16	29° 59' 27.666 N	94° 17' 52.974 W	13,937,807.58	3,456,555.05
503.00	0.55	276.15	502.97	1.01	-5.08	29° 59' 27.667 N	94° 17' 52.984 W	13,937,807.69	3,456,554.13
596.00	0.25	295.16	595.97	1.15	-5.71	29° 59' 27.669 N	94° 17' 52.991 W	13,937,807.83	3,456,553.50
689.00	0.13	286.13	688.97	1.26	-6.00	29° 59' 27.670 N	94° 17' 52.994 W	13,937,807.94	3,456,553.21
779.00	0.18	100.25	778.97	1.27	-5.95	29° 59' 27.670 N	94° 17' 52.994 W	13,937,807.95	3,456,553.26
878.00	0.22	94.50	877.97	1.22	-5.61	29° 59' 27.670 N	94° 17' 52.990 W	13,937,807.90	3,456,553.60
956.00	0.06	132.43	955.97	1.18	-5.43	29° 59' 27.669 N	94° 17' 52.988 W	13,937,807.86	3,456,553.78
1,053.00	0.18	44.89	1,052.97	1.26	-5.29	29° 59' 27.670 N	94° 17' 52.986 W	13,937,807.94	3,456,553.92
1,145.00	0.06	340.24	1,144.97	1.41	-5.20	29° 59' 27.671 N	94° 17' 52.985 W	13,937,808.09	3,456,554.01
1,239.00	0.40	289.30	1,238.96	1.56	-5.53	29° 59' 27.673 N	94° 17' 52.989 W	13,937,808.24	3,456,553.68
1,335.00	0.31	295.83	1,334.96	1.78	-6.08	29° 59' 27.675 N	94° 17' 52.995 W	13,937,808.46	3,456,553.13
1,430.00	0.45	241.44	1,429.96	1.72	-6.64	29° 59' 27.675 N	94° 17' 53.002 W	13,937,808.40	3,456,552.57
1,525.00	0.57	208.34	1,524.96	1.12	-7.19	29° 59' 27.669 N	94° 17' 53.008 W	13,937,807.80	3,456,552.02
1,621.00	0.97	195.75	1,620.95	-0.08	-7.64	29° 59' 27.657 N	94° 17' 53.014 W	13,937,806.60	3,456,551.57
1,718.00	0.92	199.79	1,717.94	-1.60	-8.12	29° 59' 27.643 N	94° 17' 53.020 W	13,937,805.08	3,456,551.09
1,906.00	0.93	203.82	1,905.91	-4.42	-9.25	29° 59' 27.615 N	94° 17' 53.034 W	13,937,802.26	3,456,549.96
1,995.00	0.81	210.03	1,994.90	-5.62	-9.86	29° 59' 27.604 N	94° 17' 53.041 W	13,937,801.06	3,456,549.35
2,092.00	0.53	241.70	2,091.89	-6.43	-10.59	29° 59' 27.596 N	94° 17' 53.050 W	13,937,800.25	3,456,548.62
2,186.00	0.42	264.00	2,185.89	-6.67	-11.32	29° 59' 27.594 N	94° 17' 53.059 W	13,937,800.01	3,456,547.89
2,218.00	0.38	217.95	2,217.89	-6.77	-11.50	29° 59' 27.593 N	94° 17' 53.061 W	13,937,799.91	3,456,547.71
2,276.00	0.42	192.90	2,275.89	-7.13	-11.67	29° 59' 27.589 N	94° 17' 53.063 W	13,937,799.55	3,456,547.54
2,372.00	0.45	186.31	2,371.89	-7.84	-11.79	29° 59' 27.582 N	94° 17' 53.064 W	13,937,798.84	3,456,547.42
2,465.00	0.53	177.70	2,464.88	-8.64	-11.81	29° 59' 27.574 N	94° 17' 53.065 W	13,937,798.04	3,456,547.40
2,560.00	0.72	219.69	2,559.88	-9.54	-12.17	29° 59' 27.566 N	94° 17' 53.070 W	13,937,797.14	3,456,547.04
2,656.00	0.75	210.71	2,655.87	-10.54	-12.88	29° 59' 27.556 N	94° 17' 53.078 W	13,937,796.14	3,456,546.33
2,751.00	0.59	212.16	2,750.86	-11.49	-13.46	29° 59' 27.547 N	94° 17' 53.085 W	13,937,795.19	3,456,545.75
2,843.00	0.50	209.35	2,842.86	-12.24	-13.91	29° 59' 27.540 N	94° 17' 53.091 W	13,937,794.44	3,456,545.30
2,936.00	0.55	200.99	2,935.86	-13.01	-14.27	29° 59' 27.532 N	94° 17' 53.095 W	13,937,793.67	3,456,544.94
3,030.00	0.43	201.88	3,029.85	-13.76	-14.56	29° 59' 27.525 N	94° 17' 53.099 W	13,937,792.92	3,456,544.65
3,128.00	0.45	214.48	3,127.85	-14.42	-14.91	29° 59' 27.519 N	94° 17' 53.103 W	13,937,792.26	3,456,544.30
3,222.00	0.45	234.79	3,221.85	-14.93	-15.42	29° 59' 27.514 N	94° 17' 53.109 W	13,937,791.75	3,456,543.79
3,316.00	0.33	225.02	3,315.84	-15.34	-15.92	29° 59' 27.510 N	94° 17' 53.115 W	13,937,791.34	3,456,543.29
3,412.00	0.31	224.75	3,411.84	-15.72	-16.30	29° 59' 27.506 N	94° 17' 53.119 W	13,937,790.96	3,456,542.91
3,505.00	0.25	207.09	3,504.84	-16.08	-16.57	29° 59' 27.503 N	94° 17' 53.122 W	13,937,790.60	3,456,542.64
3,560.05	0.27	213.40	3,559.90	-16.29	-16.69	29° 59' 27.501 N	94° 17' 53.124 W	13,937,790.39	3,456,542.52
3,600.00	0.28	217.48	3,599.84	-16.45	-16.80	29° 59' 27.499 N	94° 17' 53.125 W	13,937,790.23	3,456,542.41
3,694.00	0.33	206.67	3,693.84	-16.87	-17.06	29° 59' 27.495 N	94° 17' 53.128 W	13,937,789.81	3,456,542.15
3,789.00	0.35	223.05	3,788.84	-17.33	-17.38	29° 59' 27.491 N	94° 17' 53.132 W	13,937,789.35	3,456,541.83
3,884.00	0.22	220.41	3,883.84	-17.68	-17.70	29° 59' 27.487 N	94° 17' 53.136 W	13,937,789.00	3,456,541.51

Design Report for Bead Farm Co. #2 - 002 ST00BP00

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude (usft)	Geographic Coordinates Longitude (usft)	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
3,978.00	0.18	201.67	3,977.84	-17.95	-17.87	29° 59' 27.485 N	94° 17' 53.138 W	13,937,788.73	3,456,541.34
4,071.00	0.19	210.77	4,070.83	-18.22	-18.00	29° 59' 27.482 N	94° 17' 53.140 W	13,937,788.46	3,456,541.21
4,168.00	0.13	210.22	4,167.83	-18.45	-18.14	29° 59' 27.480 N	94° 17' 53.141 W	13,937,788.23	3,456,541.07
4,261.00	0.13	187.31	4,260.83	-18.65	-18.21	29° 59' 27.478 N	94° 17' 53.142 W	13,937,788.03	3,456,541.00
4,323.00	0.09	217.33	4,322.83	-18.76	-18.25	29° 59' 27.477 N	94° 17' 53.143 W	13,937,787.92	3,456,540.96
4,441.00	0.25	193.14	4,440.83	-19.08	-18.36	29° 59' 27.474 N	94° 17' 53.144 W	13,937,787.60	3,456,540.85
4,538.00	0.56	167.94	4,537.83	-19.75	-18.31	29° 59' 27.467 N	94° 17' 53.144 W	13,937,786.93	3,456,540.90
4,634.00	0.44	179.21	4,633.83	-20.58	-18.21	29° 59' 27.459 N	94° 17' 53.143 W	13,937,786.10	3,456,541.00
4,725.00	0.42	137.83	4,724.83	-21.18	-17.98	29° 59' 27.453 N	94° 17' 53.141 W	13,937,785.50	3,456,541.23
4,822.00	0.31	134.75	4,821.82	-21.62	-17.55	29° 59' 27.448 N	94° 17' 53.136 W	13,937,785.06	3,456,541.66
4,919.00	0.35	144.92	4,918.82	-22.05	-17.20	29° 59' 27.444 N	94° 17' 53.132 W	13,937,784.63	3,456,542.01
5,014.00	0.40	139.06	5,013.82	-22.54	-16.81	29° 59' 27.439 N	94° 17' 53.128 W	13,937,784.14	3,456,542.40
5,208.00	0.18	41.45	5,207.82	-22.82	-16.17	29° 59' 27.436 N	94° 17' 53.121 W	13,937,783.86	3,456,543.04
5,296.00	0.26	19.09	5,295.82	-22.53	-16.01	29° 59' 27.439 N	94° 17' 53.119 W	13,937,784.15	3,456,543.20
5,391.00	0.40	19.41	5,390.82	-22.01	-15.83	29° 59' 27.444 N	94° 17' 53.117 W	13,937,784.67	3,456,543.38
5,486.00	0.45	18.03	5,485.81	-21.35	-15.60	29° 59' 27.450 N	94° 17' 53.114 W	13,937,785.33	3,456,543.61
5,581.00	0.56	36.90	5,580.81	-20.62	-15.21	29° 59' 27.457 N	94° 17' 53.109 W	13,937,786.06	3,456,544.00
5,675.00	0.50	33.23	5,674.81	-19.91	-14.71	29° 59' 27.464 N	94° 17' 53.103 W	13,937,786.77	3,456,544.50
5,770.00	0.51	22.06	5,769.80	-19.17	-14.32	29° 59' 27.471 N	94° 17' 53.098 W	13,937,787.51	3,456,544.89
5,865.00	0.40	18.74	5,864.80	-18.47	-14.06	29° 59' 27.478 N	94° 17' 53.095 W	13,937,788.21	3,456,545.15
5,958.00	0.37	14.53	5,957.80	-17.87	-13.88	29° 59' 27.484 N	94° 17' 53.093 W	13,937,788.81	3,456,545.33
6,052.00	0.43	3.54	6,051.79	-17.22	-13.78	29° 59' 27.490 N	94° 17' 53.091 W	13,937,789.46	3,456,545.43
6,148.00	0.40	11.29	6,147.79	-16.53	-13.69	29° 59' 27.497 N	94° 17' 53.090 W	13,937,790.15	3,456,545.52
6,337.00	0.33	8.33	6,336.79	-15.35	-13.48	29° 59' 27.509 N	94° 17' 53.087 W	13,937,791.33	3,456,545.73
6,432.00	0.47	1.15	6,431.79	-14.69	-13.44	29° 59' 27.515 N	94° 17' 53.086 W	13,937,791.99	3,456,545.77
6,525.00	0.25	13.41	6,524.78	-14.11	-13.38	29° 59' 27.521 N	94° 17' 53.085 W	13,937,792.57	3,456,545.83
6,620.00	0.25	11.01	6,619.78	-13.70	-13.30	29° 59' 27.525 N	94° 17' 53.084 W	13,937,792.98	3,456,545.91
6,715.00	0.33	347.54	6,714.78	-13.23	-13.31	29° 59' 27.530 N	94° 17' 53.084 W	13,937,793.45	3,456,545.90
6,808.00	0.18	303.99	6,807.78	-12.89	-13.49	29° 59' 27.533 N	94° 17' 53.086 W	13,937,793.79	3,456,545.72
6,904.00	0.32	328.92	6,903.78	-12.58	-13.76	29° 59' 27.536 N	94° 17' 53.089 W	13,937,794.10	3,456,545.45
6,998.00	0.33	301.62	6,997.78	-12.21	-14.12	29° 59' 27.540 N	94° 17' 53.093 W	13,937,794.47	3,456,545.09
7,093.00	0.18	292.51	7,092.78	-12.01	-14.49	29° 59' 27.542 N	94° 17' 53.097 W	13,937,794.67	3,456,544.72
7,185.00	0.19	340.74	7,184.78	-11.81	-14.68	29° 59' 27.544 N	94° 17' 53.099 W	13,937,794.87	3,456,544.53
7,280.00	0.25	232.06	7,279.78	-11.79	-14.89	29° 59' 27.545 N	94° 17' 53.101 W	13,937,794.89	3,456,544.32
7,377.00	0.18	243.61	7,376.78	-11.99	-15.20	29° 59' 27.543 N	94° 17' 53.105 W	13,937,794.69	3,456,544.01
7,562.00	0.43	219.04	7,561.77	-12.65	-15.89	29° 59' 27.536 N	94° 17' 53.113 W	13,937,794.03	3,456,543.32
7,753.00	0.44	255.06	7,752.77	-13.40	-17.05	29° 59' 27.529 N	94° 17' 53.127 W	13,937,793.28	3,456,542.16
7,941.00	0.18	301.28	7,940.77	-13.43	-18.00	29° 59' 27.530 N	94° 17' 53.138 W	13,937,793.25	3,456,541.21
8,035.00	0.00	255.07	8,034.77	-13.36	-18.13	29° 59' 27.530 N	94° 17' 53.139 W	13,937,793.32	3,456,541.08
8,130.00	0.14	109.08	8,129.77	-13.39	-18.02	29° 59' 27.530 N	94° 17' 53.138 W	13,937,793.29	3,456,541.19
8,227.00	0.14	114.85	8,226.76	-13.48	-17.80	29° 59' 27.529 N	94° 17' 53.135 W	13,937,793.20	3,456,541.41
8,316.00	0.14	303.31	8,315.76	-13.47	-17.79	29° 59' 27.529 N	94° 17' 53.135 W	13,937,793.21	3,456,541.42

Design Report for Bead Farm Co. #2 - 002 ST00BP00

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude (usft)	Geographic Coordinates Longitude (usft)	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
8,411.00	0.18	307.83	8,410.76	-13.31	-18.01	29° 59' 27.531 N	94° 17' 53.138 W	13,937,793.37	3,456,541.20
8,506.00	0.32	289.23	8,505.76	-13.13	-18.38	29° 59' 27.533 N	94° 17' 53.142 W	13,937,793.55	3,456,540.83
8,598.00	0.25	303.28	8,597.76	-12.94	-18.79	29° 59' 27.535 N	94° 17' 53.146 W	13,937,793.74	3,456,540.42
8,682.00	0.43	313.57	8,681.76	-12.62	-19.17	29° 59' 27.538 N	94° 17' 53.150 W	13,937,794.06	3,456,540.04
8,752.00	0.43	313.57	8,751.76	-12.26	-19.55	29° 59' 27.542 N	94° 17' 53.155 W	13,937,794.42	3,456,539.66

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
8,752.00	8,751.76	-12.26	-19.55	Proj. to Bit

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	0.00	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
204.00	2,218.00	01 HAL MWD (MagVarMS) 17 1/2" Hole 204' - 2218'	3_MWD+HRGM+MS
2,276.00	8,682.00	02 HAL MWD (MagVarMS) 12 1/4" Hole 2276' - 8682'	3_MWD+HRGM+MS

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
152.50	152.50	20" Conductor Casing	20	20
2,244.00	2,243.89	13-3/8" Surface Casing	13-3/8	17-1/2
8,731.00	8,730.76	9-5/8" Production Casing	9-5/8	12-1/4

Design Report for Bead Farm Co. #2 - 002 ST00BP00

Design Targets

Shape	Target Name	TVD ()	Northing ()	Easting ()	+N/-S	+E/-W	Created	Updated

Directional Difficulty Index

Average Dogleg over Survey:	0.17 °/100usft	Maximum Dogleg over Survey:	0.98 °/100usft at 2,218.00 usft
Net Tortousity applicable to Plans:	0.17 °/100usft	Directional Difficulty Index:	2.930

Audit Info

North Reference Sheet for Rose Prospect CCS - Bead Farm Co. #2 - 002 ST00BP00

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to (32.52') Nabors X-33 @ 58.42usft (Spud). Northing and Easting are relative to Bead Farm Co. #2

Coordinate System is US State Plane 1983, Texas South Central Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is 99° 0' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:30° 17' 0.000 N°

False Easting: 1,968,500.00usft, False Northing: 13,123,333.33usft, Scale Reduction: 0.99992863

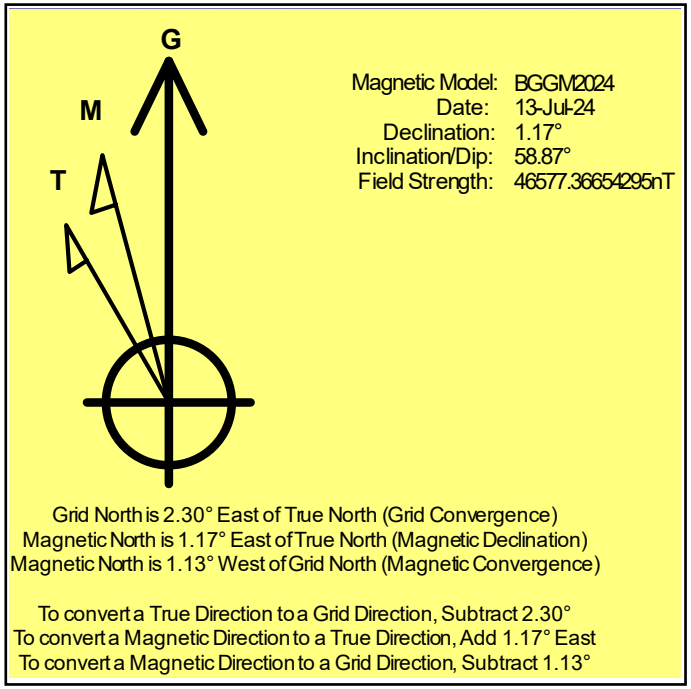
Grid Coordinates of Well: 13,937,806.68 usft N, 3,456,559.21 usft E

Geographical Coordinates of Well: 29° 59' 27.66" N, 094° 17' 52.93" W

Grid Convergence at Surface is: 2.30°

Based upon Minimum Curvature type calculations, at a Measured Depth of 8,752.00usft

the Bottom Hole Displacement is 23.07usft in the Direction of 237.91° (Grid).
Magnetic Convergence at surface is: 1.13° (13 July 2024, , BGGM2024)



CONFIDENTIAL BUSINESS INFORMATION

Railroad Commission of Texas

PERMIT TO DRILL, RE-COMPLETE, OR RE-ENTER ON REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

CONDITIONS AND INSTRUCTIONS

Permit Invalidation. It is the operator's responsibility to make sure that the permitted location complies with Commission density and spacing rules in effect on the spud date. The permit becomes invalid automatically if, because of a field rule change or the drilling of another well, the stated location is not in compliance with Commission field rules on the spud date. If this occurs, application for an exception to Statewide Rules 37 and 38 must be made and a special permit granted prior to spudding. Failure to do so may result in an allowable not being assigned and/or enforcement procedures being initiated.

Notice Requirements. Per H.B 630, signed May 8, 2007, the operator is required to provide notice to the surface owner no later than the 15th business day after the Commission issues a permit to drill. Please refer to subchapter Q Sec. 91.751-91.755 of the Texas Natural Resources Code for applicability.

Permit expiration. This permit expires two (2) years from the date of issuance shown on the original permit. The permit period will not be extended.

Drilling Permit Number. The drilling permit number shown on the permit MUST be given as a reference with any notification to the district (see below), correspondence, or application concerning this permit.

Rule 37 Exception Permits. This Statewide Rule 37 exception permit is granted under either provision Rule 37 (h)(2)(A) or 37(h)(2)(B). Be advised that a permit granted under Rule 37(h)(2)(A), notice of application, is subject to the General Rules of Practice and Procedures and if a protest is received under Section 1.3, "Filing of Documents," and/or Section 1.4, "Computation of Time," the permit may be deemed invalid.

Before Drilling

Fresh Water Sand Protection. The operator must set and cement sufficient surface casing to protect all usable-quality water, as defined by the Railroad Commission of Texas (RRC) Groundwater Advisory Unit (GWAU). Before drilling a well, the operator must obtain a letter from the Railroad Commission of Texas stating the depth to which water needs protection, Write: Railroad Commission of Texas, Groundwater Advisory Unit (GWAU), P.O. Box 12967, Austin, TX 78711-3087. File a copy of the letter with the appropriate district office.

Accessing the Well Site. If an OPERATOR, well equipment TRANSPORTER or WELL service provider must access the well site from a roadway on the state highway system (Interstate, U.S. Highway, State Highway, Farm-to-Market Road, Ranch-to-Market Road, etc.), an access permit is required from TxDOT. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

Water Transport to Well Site. If an operator intends to transport water to the well site through a temporary pipeline laid above ground on the state's right-of-way, an additional TxDOT permit is required. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

*NOTIFICATION

The operator is **REQUIRED** to notify the district office when setting surface casing, intermediate casing, and production casing, or when plugging a dry hole. The district office **MUST** also be notified if the operator intends to re-enter a plugged well or re-complete a well into a different regulatory field. Time requirements are given below. The drilling permit number **MUST** be given with such notifications.

During Drilling

Permit at Drilling Site. A copy of the Form W-1 Drilling Permit Application, the location plat, a copy of Statewide Rule 13 alternate surface casing setting depth approval from the district office, if applicable, and this drilling permit must be kept at the permitted well site throughout drilling operations.

***Notification of Setting Casing.** The operator MUST call in notification to the appropriate district office (phone number shown the on permit) a minimum of eight (8) hours prior to the setting of surface casing, intermediate casing, AND production casing. The individual giving notification MUST be able to advise the district office of the drilling permit number.

***Notification of Re-completion/Re-entry.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of eight (8) hours prior to the initiation of drilling or re-completion operations. The individual giving notification MUST be able to advise the district office of the drilling permit number.

Completion and Plugging Reports

Hydraulic Fracture Stimulation using Diesel Fuel: Most operators in Texas do not use diesel fuel in hydraulic fracturing fluids. Section 322 of the Energy Policy Act of 2005 amended the Underground Injection Control (UIC) portion of the federal Safe Drinking Water Act (42 USC 300h(d)) to define "underground Injection" to *EXCLUDE* " ...the underground injection of fluids or propping agents (*other than diesel fuels*) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities." (italic and underlining added.) Therefore, hydraulic fracturing may be subject to regulation under the federal UIC regulations if diesel fuel is injected or used as a propping agent. EPA defined "diesel fuel" using the following five (5) Chemical Abstract Service numbers: 68334-30-5 Primary Name: Fuels, diesel; 68476-34-6 Primary Name: Fuels, diesel, No. 2; 68476-30-2 Primary Name: Fuel oil No. 2; 68476-31-3 Primary Name: Fuel oil, No. 4; and 8008-20-6 Primary Name: Kerosene. As a result, an injection well permit would be required before performing hydraulic fracture stimulation using diesel fuel as defined by EPA on any well in Texas. Hydraulic fracture stimulation using diesel fuel as defined by EPA on a well in Texas without an injection well permit could result in enforcement action.

Producing Well. Statewide Rule 16 states that the operator of a well shall file with the Commission the appropriate completion report within ninety (90) days after completion of the well or within one hundred and fifty (150) days after the date on which the drilling operation is completed, whichever is earlier. Completion of the well in a field authorized by this permit voids the permit for all other fields included in the permit unless the operator indicates on the initial completion report that the well is to be a dual or multiple completion and promptly submits an application for multiple completion. All zones are required to be completed before the expiration date on the existing permit. Statewide Rule 40(d) requires that upon successful completion of a well in the same reservoir as any other well previously assigned the same acreage, proration plats and P-15s or P-16s (if required) or a lease plat and P-16 must be submitted with no double assignment of acreage unless authorized by rule.

Dry or Noncommercial Hole. Statewide Rule 14(b)(2) prohibits suspension of operations on each dry or non-commercial well without plugging unless the hole is cased and the casing is cemented in compliance with Commission rules. If properly cased, Statewide Rule 14(b)(2) requires that plugging operations must begin within a period of one (1) year after drilling or operations have ceased. Plugging operations must proceed with due diligence until completed. An extension to the one-year plugging requirement may be granted under the provisions stated in Statewide Rule 14(b)(2).

Intention to Plug. The operator must file a Form W-3A (Notice of Intention to Plug and Abandon) with the district office at least five (5) days prior to beginning plugging operations. If, however, a drilling rig is already at work on location and ready to begin plugging operations, the district director or the director's delegate may waive this requirement upon request, and verbally approve the proposed plugging procedures.

***Notification of Plugging a Dry Hole.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of four (4) hours prior to beginning plugging operations. The individual giving the notification MUST be able to advise the district office of the drilling permit number and all water protection depths for that location as stated in the Groundwater Advisory Unit letter.

DIRECT INQUIRIES TO: DRILLING PERMIT SECTION, OIL AND GAS DIVISION

PHONE
(512) 463-6751

MAIL:
PO Box 12967
Austin, Texas, 78711-2967

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER	DATE PERMIT ISSUED OR AMENDED	DISTRICT
898449	Apr 04, 2024	* 03
API NUMBER	**FORM W-1 RECEIVED**	**COUNTY**
42-245-32911	Mar 27, 2024	JEFFERSON
TYPE OF OPERATION	**WELLBORE PROFILE(S)**	**ACRES**
NEW DRILL	Vertical	470

OPERATOR 101256

EXXONMOBIL LOW C SOL ON STOR LLC

ATTN EDWARD E GRAHAM
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389

NOTICE
This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored.
District Office Telephone No:
(713) 869-5001

LEASE NAME	WELL NUMBER
BEAD FARM CO.	2
LOCATION	**TOTAL DEPTH**
4.5 miles SE direction from CHINA	10000

Section, Block and/or Survey

SECTION 41 BLOCK ABSTRACT 266

SURVEY T&NO RR CO

DISTANCE TO SURVEY LINES	DISTANCE TO NEAREST LEASE LINE
1535 ft. WEST 2409 ft. SOUTH	ft.
DISTANCE TO LEASE LINES	**DISTANCE TO NEAREST WELL ON LEASE**
692 ft. WEST 2409 ft. SOUTH	See FIELD(s) Below

FIELD(s) and LIMITATIONS:

* SEE FIELD DISTRICT FOR REPORTING PURPOSES *

FIELD NAME / LEASE NAME	ACRES / NEAREST LEASE	DEPTH	WELL # / NEAREST WE	DIST
WILDCAT	470.00	8,800	2	03
BEAD FARM CO.			0	

RESTRICTIONS: For exploratory test only

THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS

This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.

This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

SWR #13 Formation Data

JEFFERSON (245) County

Formation	Remarks	Geological Order	Effective Date
LAFAYETTE	disposal	1	12/17/2013
CAPROCK	disposal	2	12/17/2013
SPINDLETOP SALT DOME	disposal	3	12/17/2013
FANNETT SALT DOME	disposal	4	12/17/2013
BIG HILL SALT DOME	disposal	5	12/17/2013
PLEISTOCENE-LISSIE	disposal	6	12/17/2013
MIOCENE	disposal	7	12/17/2013
FRIO	disposal	8	12/17/2013
MARINULINA	disposal	9	12/17/2013
HETEROSTEGINA	disposal	10	12/17/2013

The above list may not be all inclusive, and may also include formations that do not intersect all wellbores. The listing order of the Formation information reflects the general stratigraphic order and relative geologic age. This is a dynamic list subject to updates and revisions. It is the operator's responsibility to make sure that at the time of spudding the well the most current list is being referenced. Refer to the RRC website at the following address for the most recent information.
http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info

CONFIDENTIAL BUSINESS INFORMATION

WELL LOCATION PLAT
EXXONMOBIL LOW CARBON SOLUTIONS
BEAD FARM CO. #2
T.& N.O. R.R. CO. SURVEY, A-266
JEFFERSON COUNTY, TEXAS

1000' 500' 0 1000'

SURVEYING & MAPPING INC.
TBPELS Firm No. 10032700
21072 FM 2493 / Bullard, Texas 75757 / 903-581-7759

D.C. TURNER SURVEY
A-658

T.& N.O.
R.R. CO. SURVEY
A-142

BHL: ST00
MD: 8682.00
TVD: 8681.76
From Surf Location:
27.538 N
53.150 W

SHL	TRACT CALLS	SURVEY CALLS	ELEV.
BEAD FARM CO. #2	2409' Sc. FSL 692' Sc. FWL	2409' Sc. FSL 1535' Sc. FWL	22.2'

KH Land Company, Ltd. Called 109.618 Acres Vol. 1240, Pg. 165 D.R.J.C.T.

Bead Farm Co. Vol. 879, Pg. 564 D.R.J.C.T.

SPERRY DRILLING JOB NO. 909093079
DATE SURVEYED July 24, 2024
SURVEYED FROM 204' TO 8682'
TIE-ON COORDINATES FROM Surface
BHL AT 8752.00 FT. (MD) = 23.07 FT.
AT 237.91° * Grid
FROM SURFACE LOCATION NW
BHL ____ = TO NW LEASE LINE

T.& N.O.
R.R. CO. SURVEY
A-869

T.& N.O. R.R. CO. SURVEY
A-266

W. L. STARK SURVEY
A-874

1535' Sc.
692' Sc.

BEAD FARM CO. #2
Y=13,937,806.77'
X=3,456,558.95'
LAT.=29°59'27.66"
LONG.=-94°17'52.93"

2409' Sc.

N
GRID

T.& N.O.
R.R. CO. SURVEY
A-254

J. C. GRANT SURVEY
A-128

A. REUSS SURVEY
A-196

Location is approximately 11.4 miles SW of Beaumont, Tx.
"FANNETT WEST" Quadrangle

Driving Directions:
From the Intersection of I10 and Smith Road near Cheek, TX, go Northwest on Smith Road, .8 miles turn left (West) Kidd Road. Go 1.6 miles turn right (North) on Boyt Road. Go 1.1 miles stay straight (West) on Lawhon Rd. Go 2.7 miles turn left (South) on Lease Road. Go 0.68 miles. Drive on location.

DATE SURVEYED: 8/23/2023-8/28/2023

Location is staked from tract lines as evidenced by occupation, information obtained from the Tx. R.R.C and provided deed records. Distances shown are not intended to be definitive in establishing actual title boundaries. The deed data and tract acreages shown hereon were furnished by others. This is not a title survey. Vesting documents may not have been provided. Bearings and distances are based on the Texas State Plane Coordinate System N.A.D. 83 (2011) (South Central Zone) derived from GPS Observations.

LEGEND
= TRACT LINE
= SURVEY LINE
= PROPOSED WELL

STATE OF TEXAS
REGISTERED
JIM G. GLASS
5262
PROFESSIONAL
LAND SURVEYOR

FOR THE EXCLUSIVE USE OF
EXXONMOBIL LOW CARBON SOLUTIONS

STATE OF TEXAS - - - COUNTY OF SMITH
I, Jim G. Glass, Registered Professional Land Surveyor, do hereby certify the above plat to be true and correct to the best of my knowledge.
Date: April 2, 2024 Bullard, Texas
E.L.S. Surveying & Mapping, Inc.

Registered Professional Land Surveyor No. 5262

Drafter: ECJ FB 2744/88-97 Job No. 430923 Map No. J-0923-LOC-INJ2B

CONFIDENTIAL BUSINESS INFORMATION

CHRISTI CRADDICK, CHAIRMAN
WAYNE CHRISTIAN, COMMISSIONER
JIM WRIGHT, COMMISSIONER

DANNY SORRELLS
DIRECTOR, OIL AND GAS DIVISION
PETER FISHER, P.G.
DISTRICT DIRECTOR

RAILROAD COMMISSION OF TEXAS

OIL AND GAS DIVISION

OPERATOR Name:	EXXONMOBIL LOW C SOL ON	**RE:**	**Lease:**	Bead Farm Co.
Address1:	ATTN EDWARD E GRAHAM W1.2B.02			
Address2:	22777 SPRINGWOODS VILLAGE PKWY	**Well No:**	2	
City:	SPRING	**Sec:**	41	**Block:**
State:	TX	**County:**	JEFFERSON	
		Survey Name:	T&NO RR CO	

SWR13EX Application Number: 130361 **Drilling Permit No:**

SWR 13 CASING EXCEPTION APPLICATION/ALTERNATIVE REQUEST APPROVED

The Proposed Casing and Cementing Program submitted for **LEASE** Bead Farm Co. ;
WELL 2 has been approved by the Railroad Commission of Texas District Office.

a. A copy of this approved letter must be kept on location during all phases of drilling and/or plugging operations. Once approved, changes CANNOT be made to the Proposed Casing Program on the original application without additional approval from the Railroad Commission of Texas District Office.

b. Any substantive modifications to the cement program require prior approval from the Railroad Commission of Texas District Office, and may require re-submission of the SWR 13 (Statewide Rule 13) Alternate Surface Casing Application. Contact the Railroad Commission of Texas District Office for more information.

c. The tail slurry must be sufficient to fill the Zone of Critical Cement as described in Statewide Rule 13(b)(1)(H)(i). In addition, all cement slurries must be mixed on location as described in Application for Alternate Surface Casing Program.

d. The casing and cement program shall adhere to the following specifications:

Set 2265 feet of surface casing and circulate cement from the shoe to the ground surface.

DP 909449 - Exxonmobil, Bead Farm Co. Lease Well 2 (245 32911)

IF CEMENT IS NOT CIRCULATED TO THE GROUND SURFACE AS REQUIRED BY THIS EXCEPTION, YOU MUST CONTACT THE RAILROAD COMMISSION OF TEXAS DISTRICT OFFICE IMMEDIATELY AND FOLLOW THE PROCEDURES SET OUT IN RULE 13(b)(1)(H)(iii) OR AS REQUIRED BY THE RAILROAD COMMISSION OF TEXAS DISTRICT OFFICE.

You must comply with all other provisions of SWR 13 (Statewide Rule 13) and a representative of the cementing company who performs the cementing job for the protection of usable quality water strata must sign the Form W-15 attesting to the information regarding cementing operations performed; including circulation of cement. (Note: If surface casing is set below the approved depth, this can result in denial of future Statewide Rule 13(b)(1)(H)(i) requests.) A condition of the approved drilling permit requires notification to the Railroad Commission of Texas District Office eight (8) hours prior to the time casing is to be set/cemented in the well. If your exception request was submitted after the subject well has been drilled and completed, the operator may be referred for enforcement action.

This authorization shall expire within five (5) years from the date the Groundwater Protection Determination was issued, or at the expiration of the drilling permit (if the well is not spudded prior to expiration) for the referenced well, whichever occurs first. Furthermore, this authorization supersedes any prior authorizations issued for the referenced well.

This exception is based on information provided when the application was submitted 05/20/2024 .
If any information has changed, you must contact the appropriate Railroad Commission of Texas District Office, and submit a new application if applicable. If you have questions, please contact the appropriate Oil and Gas District office.

RRC APPROVAL BY: AUDREY KUKLENZ DATE: 05/20/2024

PETER FISHER, P.G.

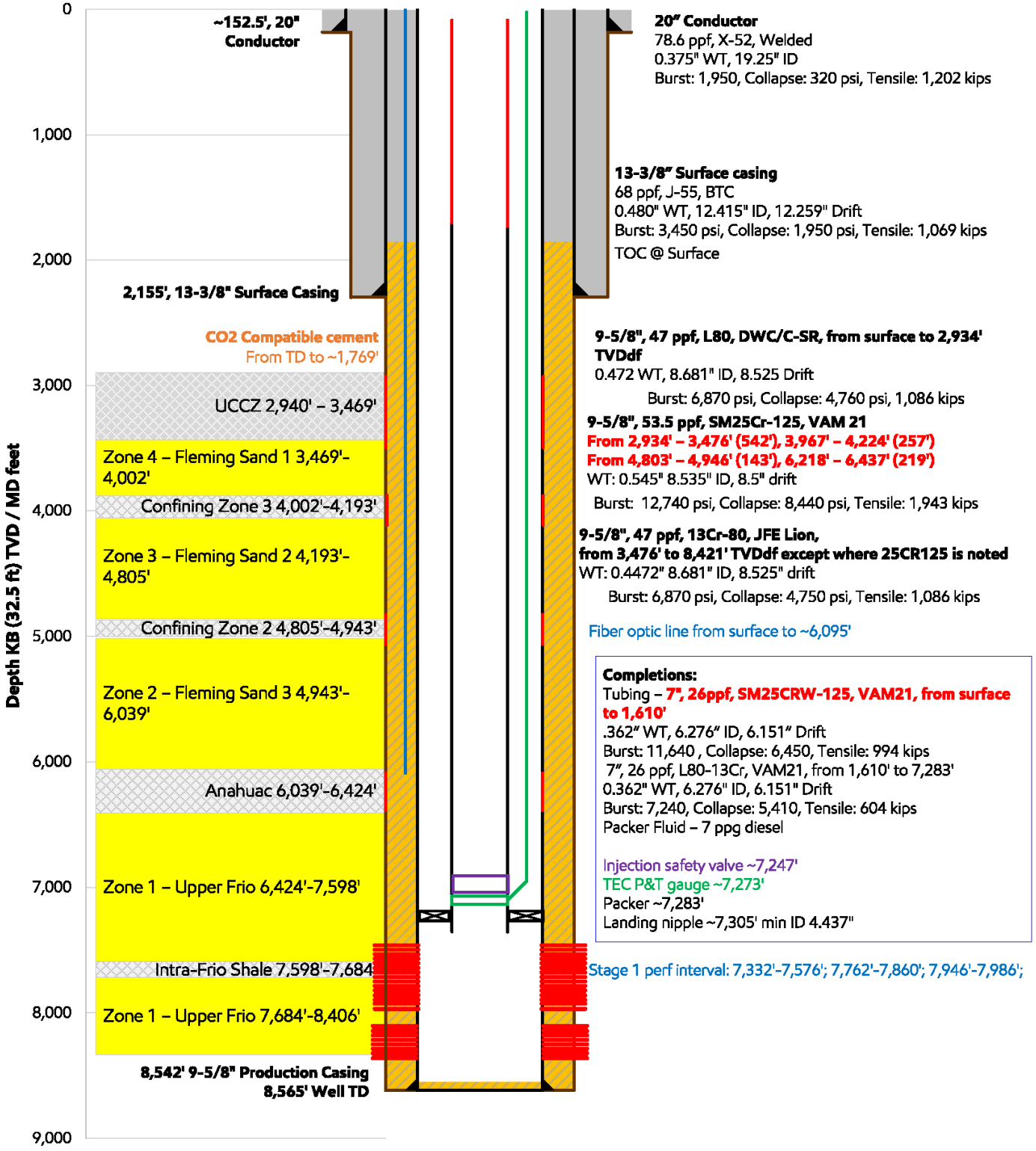
DISTRICT DIRECTOR

CONFIDENTIAL BUSINESS INFORMATION

4224532912 Bead Farm Co. 3 (Rose CCS Project Injection Well No. 03)

Rose CCS Project Bead Farm 3

Completions Wellbore Schematic – Frio Injection



ERM

Appendix D.1
Completions Wellbore Schematic for Rose CCS Project
Injection Well No. 03
Rose Carbon Capture and Storage Project
ExxonMobil Low Carbon Solutions Onshore Storage LLC
Jefferson County, TX

CONFIDENTIAL BUSINESS INFORMATION

API No. 42-245-32912
Drilling Permit # 898450
SWR Exception

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

APPLICATION FOR PERMIT TO DRILL, RECOMPLETE, OR RE-ENTER

This facsimile W-1 was generated electronically from data submitted to the RRC.
A certification of the automated data is available in the RRC's Austin office.

FORM W-1 07/2004

Permit Status: Approved

1. RRC Operator No.: 101256

2. Operator's Name (as shown on form P-5, Organization Report): EXXONMOBIL LOW C SOL ON STOR LLC

3. Operator Address (include street, city, state, zip): ATTN EDWARD E GRAHAM, 22777 SPRINGWOODS VILLAGE PKWY, SPRING, TX 77389-0000

4. Lease Name: BEAD FARM

5. Well No.: 3

GENERAL INFORMATION

6. Purpose of filing (mark ALL appropriate boxes): [X] New Drill [ ] Recompletion [ ] Reclass [ ] Field Transfer [ ] Re-Enter [ ] Amended [ ] Amended as Drilled (BHL) (Also File Form W-1D)

7. Wellbore Profile (mark ALL appropriate boxes): [X] Vertical [ ] Horizontal (Also File Form W-1H) [ ] Directional (Also File Form W-1D) [ ] Sidetrack

8. Total Depth: 10000

9. Do you have the right to develop the minerals under any right-of-way ? [X] Yes [ ] No

10. Is this well subject to Statewide Rule 36 (hydrogen sulfide area)? [ ] Yes [X] No

SURFACE LOCATION AND ACREAGE INFORMATION

11. RRC District No.: 03

12. County: JEFFERSON

13. Surface Location [X] Land [ ] Bay/Estuary [ ] Inland Waterway [ ] Offshore

14. This well is to be located 3.35 miles in a SE direction from China which is the nearest town in the county of the well site.

15. Section: 8

16. Block:

17. Survey: HT&B RR CO/TURNER, D C

18. Abstract No.: A-658

19. Distance to nearest lease line: ft.

20. Number of contiguous acres in lease, pooled unit, or unitized tract: 650

21. Lease Perpendiculars: 1742 ft from the WEST line and 2937 ft from the NORTH line.

22. Survey Perpendiculars: 1742 ft from the WEST line and 2937 ft from the NORTH line.

23. Is this a pooled unit? [ ] Yes [X] No

24. Unitization Docket No:

25. Are you applying for Substandard Acreage Field? [ ] Yes (attach Form W-1A) [X] No

FIELD INFORMATION — List all fields of anticipated completion including Wildcat. List one zone per line.

26. RRC District No.	27. Field No.	28. Field Name (exactly as shown in RRC records)	29. Well Type	30. Completion Depth	31. Distance to Nearest Well in this Reservoir	32. Number of Wells on this lease in this Reservoir
03	00006001	WILDCAT	Exploratory Test Well	8600	0.00	1

BOTTOMHOLE LOCATION INFORMATION is required for DIRECTIONAL, HORIZONTAL, AND AMENDED AS DRILLED PERMIT APPLICATIONS

Remarks
See W1 Comments attached

Certificate:
I certify that information stated in this application is true and complete, to the best of my knowledge.

Josh Calkin — Name of filer
Mar 27, 2024 — Date submitted

(281)702-5537 — Phone
Josh.Calkin@erm.com — E-mail Address (OPTIONAL)

RRC Use Only Data Validation Time Stamp: Mar 26, 2025 1:56 PM(Current Version)

CONFIDENTIAL BUSINESS INFORMATION

Permit Status: Approved

The RRC has not approved this application. Duplication or distribution of information is at the user's own risk.

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

APPLICATION FOR PERMIT TO DRILL, RECOMPLETE, OR RE-ENTER

This facsimile W-1 was generated electronically from data submitted to the RRC.
A certification of the automated data is available in the RRC's Austin office.

W-1 Comments

Permit # 898450

Approved Date: Apr 17, 2024

[RRC STAFF Mar 28, 2024 4:19 PM]: There have been problems identified with this permit (see problem letter attachment). Notification sent.; [RRC STAFF Apr 4, 2024 3:22 PM]: Problems identified with this permit are resolved.; [RRC STAFF Apr 4, 2024 3:23 PM]: Amended plat uploaded.; [RRC STAFF Apr 4, 2024 5:01 PM]: There have been problems identified with this permit (see problem letter attachment). Notification sent.; [RRC STAFF Apr 5, 2024 11:57 AM]: There have been problems identified with this permit (see problem letter attachment). Notification sent.; [RRC STAFF Apr 17, 2024 5:41 PM]: Problems identified with this permit are resolved.; [RRC STAFF Apr 17, 2024 5:41 PM]: Josh Calkin provided a revised plat on which the lease name has been updated to match the W-1.

CONFIDENTIAL BUSINESS INFORMATION

Railroad Commission of Texas

PERMIT TO DRILL, RE-COMPLETE, OR RE-ENTER ON REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

CONDITIONS AND INSTRUCTIONS

Permit Invalidation. It is the operator's responsibility to make sure that the permitted location complies with Commission density and spacing rules in effect on the spud date. The permit becomes invalid automatically if, because of a field rule change or the drilling of another well, the stated location is not in compliance with Commission field rules on the spud date. If this occurs, application for an exception to Statewide Rules 37 and 38 must be made and a special permit granted prior to spudding. Failure to do so may result in an allowable not being assigned and/or enforcement procedures being initiated.

Notice Requirements. Per H.B 630, signed May 8, 2007, the operator is required to provide notice to the surface owner no later than the 15th business day after the Commission issues a permit to drill. Please refer to subchapter Q Sec. 91.751-91.755 of the Texas Natural Resources Code for applicability.

Permit expiration. This permit expires two (2) years from the date of issuance shown on the original permit. The permit period will not be extended.

Drilling Permit Number. The drilling permit number shown on the permit MUST be given as a reference with any notification to the district (see below), correspondence, or application concerning this permit.

Rule 37 Exception Permits. This Statewide Rule 37 exception permit is granted under either provision Rule 37 (h)(2)(A) or 37(h)(2)(B). Be advised that a permit granted under Rule 37(h)(2)(A), notice of application, is subject to the General Rules of Practice and Procedures and if a protest is received under Section 1.3, "Filing of Documents," and/or Section 1.4, "Computation of Time," the permit may be deemed invalid.

Before Drilling

Fresh Water Sand Protection. The operator must set and cement sufficient surface casing to protect all usable-quality water, as defined by the Railroad Commission of Texas (RRC) Groundwater Advisory Unit (GWAU). Before drilling a well, the operator must obtain a letter from the Railroad Commission of Texas stating the depth to which water needs protection, Write: Railroad Commission of Texas, Groundwater Advisory Unit (GWAU), P.O. Box 12967, Austin, TX 78711-3087. File a copy of the letter with the appropriate district office.

Accessing the Well Site. If an OPERATOR, well equipment TRANSPORTER or WELL service provider must access the well site from a roadway on the state highway system (Interstate, U.S. Highway, State Highway, Farm-to-Market Road, Ranch-to-Market Road, etc.), an access permit is required from TxDOT. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

Water Transport to Well Site. If an operator intends to transport water to the well site through a temporary pipeline laid above ground on the state's right-of-way, an additional TxDOT permit is required. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

*NOTIFICATION

The operator is **REQUIRED** to notify the district office when setting surface casing, intermediate casing, and production casing, or when plugging a dry hole. The district office **MUST** also be notified if the operator intends to re-enter a plugged well or re-complete a well into a different regulatory field. Time requirements are given below. The drilling permit number **MUST** be given with such notifications.

During Drilling

Permit at Drilling Site. A copy of the Form W-1 Drilling Permit Application, the location plat, a copy of Statewide Rule 13 alternate surface casing setting depth approval from the district office, if applicable, and this drilling permit must be kept at the permitted well site throughout drilling operations.

***Notification of Setting Casing.** The operator MUST call in notification to the appropriate district office (phone number shown the on permit) a minimum of eight (8) hours prior to the setting of surface casing, intermediate casing, AND production casing. The individual giving notification MUST be able to advise the district office of the drilling permit number.

***Notification of Re-completion/Re-entry.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of eight (8) hours prior to the initiation of drilling or re-completion operations. The individual giving notification MUST be able to advise the district office of the drilling permit number.

Completion and Plugging Reports

Hydraulic Fracture Stimulation using Diesel Fuel: Most operators in Texas do not use diesel fuel in hydraulic fracturing fluids. Section 322 of the Energy Policy Act of 2005 amended the Underground Injection Control (UIC) portion of the federal Safe Drinking Water Act (42 USC 300h(d)) to define "underground Injection" to *EXCLUDE* " ...the underground injection of fluids or propping agents (*other than diesel fuels*) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities." (italic and underlining added.) Therefore, hydraulic fracturing may be subject to regulation under the federal UIC regulations if diesel fuel is injected or used as a propping agent. EPA defined "diesel fuel" using the following five (5) Chemical Abstract Service numbers: 68334-30-5 Primary Name: Fuels, diesel; 68476-34-6 Primary Name: Fuels, diesel, No. 2; 68476-30-2 Primary Name: Fuel oil No. 2; 68476-31-3 Primary Name: Fuel oil, No. 4; and 8008-20-6 Primary Name: Kerosene. As a result, an injection well permit would be required before performing hydraulic fracture stimulation using diesel fuel as defined by EPA on any well in Texas. Hydraulic fracture stimulation using diesel fuel as defined by EPA on a well in Texas without an injection well permit could result in enforcement action.

Producing Well. Statewide Rule 16 states that the operator of a well shall file with the Commission the appropriate completion report within ninety (90) days after completion of the well or within one hundred and fifty (150) days after the date on which the drilling operation is completed, whichever is earlier. Completion of the well in a field authorized by this permit voids the permit for all other fields included in the permit unless the operator indicates on the initial completion report that the well is to be a dual or multiple completion and promptly submits an application for multiple completion. All zones are required to be completed before the expiration date on the existing permit. Statewide Rule 40(d) requires that upon successful completion of a well in the same reservoir as any other well previously assigned the same acreage, proration plats and P-15s or P-16s (if required) or a lease plat and P-16 must be submitted with no double assignment of acreage unless authorized by rule.

Dry or Noncommercial Hole. Statewide Rule 14(b)(2) prohibits suspension of operations on each dry or non-commercial well without plugging unless the hole is cased and the casing is cemented in compliance with Commission rules. If properly cased, Statewide Rule 14(b)(2) requires that plugging operations must begin within a period of one (1) year after drilling or operations have ceased. Plugging operations must proceed with due diligence until completed. An extension to the one-year plugging requirement may be granted under the provisions stated in Statewide Rule 14(b)(2).

Intention to Plug. The operator must file a Form W-3A (Notice of Intention to Plug and Abandon) with the district office at least five (5) days prior to beginning plugging operations. If, however, a drilling rig is already at work on location and ready to begin plugging operations, the district director or the director's delegate may waive this requirement upon request, and verbally approve the proposed plugging procedures.

***Notification of Plugging a Dry Hole.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of four (4) hours prior to beginning plugging operations. The individual giving the notification MUST be able to advise the district office of the drilling permit number and all water protection depths for that location as stated in the Groundwater Advisory Unit letter.

DIRECT INQUIRIES TO: DRILLING PERMIT SECTION, OIL AND GAS DIVISION

PHONE
(512) 463-6751

MAIL:
PO Box 12967
Austin, Texas, 78711-2967

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER	DATE PERMIT ISSUED OR AMENDED	DISTRICT
898450	Apr 17, 2024	* 03
API NUMBER	**FORM W-1 RECEIVED**	**COUNTY**
42-245-32912	Mar 27, 2024	JEFFERSON
TYPE OF OPERATION	**WELLBORE PROFILE(S)**	**ACRES**
NEW DRILL	Vertical	650

OPERATOR 101256

EXXONMOBIL LOW C SOL ON STOR LLC

ATTN EDWARD E GRAHAM
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389-0000

NOTICE

This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored.

District Office Telephone No:
(713) 869-5001

LEASE NAME	WELL NUMBER
BEAD FARM	3
LOCATION	**TOTAL DEPTH**
3.35 miles SE direction from CHINA	10000

Section, Block and/or Survey

SECTION 8 BLOCK ABSTRACT 658

SURVEY HT&B RR CO/TURNER, D C

DISTANCE TO SURVEY LINES	DISTANCE TO NEAREST LEASE LINE
1742 ft. WEST 2937 ft. NORTH	ft.
DISTANCE TO LEASE LINES	**DISTANCE TO NEAREST WELL ON LEASE**
1742 ft. WEST 2937 ft. NORTH	See FIELD(s) Below

FIELD(s) and LIMITATIONS:

* SEE FIELD DISTRICT FOR REPORTING PURPOSES *

FIELD NAME / LEASE NAME	ACRES / NEAREST LEASE	DEPTH	WELL # / NEAREST WE	DIST
WILDCAT	650.00	8,600	3	03
BEAD FARM			0	

RESTRICTIONS: For exploratory test only

THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS

This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.

This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

SWR #13 Formation Data

JEFFERSON (245) County

Formation	Remarks	Geological Order	Effective Date
LAFAYETTE	disposal	1	12/17/2013
CAPROCK	disposal	2	12/17/2013
SPINDLETOP SALT DOME	disposal	3	12/17/2013
FANNETT SALT DOME	disposal	4	12/17/2013
BIG HILL SALT DOME	disposal	5	12/17/2013
PLEISTOCENE-LISSIE	disposal	6	12/17/2013
MIOCENE	disposal	7	12/17/2013
FRIO	disposal	8	12/17/2013
MARINULINA	disposal	9	12/17/2013
HETEROSTEGINA	disposal	10	12/17/2013

The above list may not be all inclusive, and may also include formations that do not intersect all wellbores. The listing order of the Formation information reflects the general stratigraphic order and relative geologic age. This is a dynamic list subject to updates and revisions. It is the operator's responsibility to make sure that at the time of spudding the well the most current list is being referenced. Refer to the RRC website at the following address for the most recent information.
http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info

CONFIDENTIAL BUSINESS INFORMATION

GROUNDWATER PROTECTION DETERMINATION

Form GW-2

Groundwater Advisory Unit

Date Issued:	31 December 2024	**GAU Number:**	389718

Attention:	EXXONMOBIL LOW C SOL ON ATTN EDWARD E GRAHAM SPRING, TX 77389	**API Number:**	24532912
		County:	JEFFERSON
		Lease Name:	Bead Farm
		Lease Number:	
Operator No.:	101256	**Well Number:**	3
		Total Vertical	10000
		Latitude:	30.011563
		Longitude:	-94.297672
		Datum:	NAD27

Purpose: Injection into Non-producing Zone (W-14)

Location: Survey-HT&B RR CO/TURNER, D C; Abstract-658; Section-8

To protect usable-quality groundwater at this location, the Groundwater Advisory Unit of the Railroad Commission of Texas recommends:

This Initial Recommendation is for the purpose of Class VI injection only.

Usable-quality water occurs from the land surface to a depth of 1,225 feet. Moreover, the interval from the land surface to a depth of 700 feet contains water of superior quality which must be isolated from water in underlying beds.

The BASE OF UNDERGROUND SOURCES OF DRINKING WATER (USDW) is estimated to occur at a depth of 1,450 feet at the site of the referenced well.

*(SIP Purpose Only) Water Code Section 27.046(a) requires the GAU to issue a GW-2 letter containing Non-Endangerment language prior to issuance of a class VI permit. An additional letter will be required before SIP can issue a final permit because this letter is silent on endangerment of fresh water. *

Note: Unless stated otherwise, this recommendation is intended to apply to all wells drilled within 200 feet of the subject well. Unless stated otherwise, this recommendation is for normal drilling, production, and plugging operations only.

This determination is based on information provided when the application was submitted on 12/19/2024. If the location information has changed, you must contact the Groundwater Advisory Unit, and submit a new application if necessary. If you have questions, please contact us at 512-463-2741 or gau@rrc.texas.gov.

Groundwater Advisory Unit, Oil and Gas Division

CONFIDENTIAL BUSINESS INFORMATION

GROUNDWATER PROTECTION DETERMINATION

Form GW-2

Groundwater Advisory Unit

Date Issued:	28 January 2025	**GAU Number:**	390199

Attention:	EXXONMOBIL LOW C SOL ON ATTN EDWARD E GRAHAM SPRING, TX 77389	**API Number:**	24532912
		County:	JEFFERSON
		Lease Name:	Bead Farm
		Lease Number:	
Operator No.:	101256	**Well Number:**	3
		Total Vertical	10000
		Latitude:	30.011563
		Longitude:	-94.297672
		Datum:	NAD27

Purpose: Injection into Non-producing Zone (W-14)

Location: Survey-HT&B RR CO/TURNER, D C; Abstract-658; Section-8

To protect usable-quality groundwater at this location, the Groundwater Advisory Unit of the Railroad Commission of Texas recommends:

This Recommendation is for the purpose of Class VI injection only.

Usable-quality water occurs from the land surface to a depth of 1200 feet. Moreover, the interval from the land surface to a depth of 700 feet contains water of superior quality which must be isolated from water in underlying beds.

The BASE OF UNDERGROUND SOURCES OF DRINKING WATER (USDW) is estimated to occur at a depth of 1450 feet at the site of the referenced well.

This recommendation is applicable to all wells within a radius of 1.0 mile of this location.

The vertical geological isolation from both bases of usable quality water and underground source of drinking water is at 3,200 feet in TVD depth (for UIC Purpose Only).

Injection into the subsurface interval from 3400 to 8600 feet in TVD depth, as proposed in the submitted W14 (Class VI) application dated on December 18th of 2024 , WILL NOT ENDANGER the PROTECTED WATER STRATA geologically at the proposed location in this area (for UIC Purpose Only).

Note: Unless stated otherwise, this recommendation is intended to apply to all wells drilled within 200 feet of the subject well. Unless stated otherwise, this recommendation is for normal drilling, production, and plugging operations only.

This determination is based on information provided when the application was submitted on 01/22/2025. If the location information has changed, you must contact the Groundwater Advisory Unit, and submit a new application if necessary. If you have questions, please contact us at 512-463-2741 or gau@rrc.texas.gov.

Groundwater Advisory Unit, Oil and Gas Division

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

Form W-2

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

Status: Approved
Date: 02/20/2025
Tracking No.: 326180

OIL WELL POTENTIAL TEST, COMPLETION OR RECOMPLETION REPORT,

OPERATOR INFORMATION

Operator EXXONMOBIL LOW C SOL ON STOR LLC **Operator** 101256
Operator ATTN EDWARD E GRAHAM 22777 SPRINGWOODS VILLAGE PKWY SPRING, TX 77389-0000

WELL INFORMATION

API 42-245-32912 **County:** JEFFERSON
Well No.: 3 **RRC District** 03
Lease BEAD FARM **Field** WILDCAT
RRC Lease 28200 **Field No.:** 00006001
Location Section: 8, Block: , Survey: HT&B RR CO/TURNER, D C, Abstract: 658

Latitude 30 **Longitud** -94
This well is 3.35 **miles in a** SE
direction from CHINA,
which is the nearest town in the

FILING INFORMATION

Purpose of Well Record Only
Type of New Well
Well Type: Shut-In Producer **Completion or Recompletion** 10/18/2024

Type of Permit	Date	Permit No.
Permit to Drill, Plug Back, or	04/17/2024	898450
Rule 37 Exception		
Fluid Injection		
O&G Waste Disposal		
Other:		

COMPLETION INFORMATION

Spud 08/05/2024 **Date of first production after rig** 10/18/2024
Date plug back, deepening, drilling operation 08/05/2024 **Date plug back, deepening, recompletion, drilling operation** 10/18/2024
Number of producing wells on this lease this field (reservoir) including this 0 **Distance to nearest well in lease & reservoir** 0.0
Total number of acres in 650.00 **Elevation** 23 GL
Total depth TVD 8565 **Total depth MD**
Plug back depth TVD 8466 **Plug back depth MD**
Was directional survey made other inclination (Form W- No **Rotation time within surface casing Is Cementing Affidavit (Form W-15)** 45.0 Yes
Recompletion or No **Multiple** No
Type(s) of electric or other log(s) Gamma Ray (MWD)
Electric Log Other Description:
Location of well, relative to nearest lease of lease on which this well is 1742.0 **Feet from the** West **Line and** 2937.0 **Feet from the** North **Line of the** BEAD FARM **Lease.** **Off Lease :** No

FORMER FIELD (WITH RESERVOIR) & GAS ID OR OIL LEASE NO.

Field & Reservoir	Gas ID or Oil Lease	Well No.	Prior Service Type

PACKET: N/A

W2: N/A

FOR NEW DRILL OR RE-ENTRY, SURFACE CASING DEPTH DETERMINED BY:

GAU Groundwater Protection Determination		**Depth**	1100.0	**Date**	03/21/2024
SWR 13 Exception		**Depth**	2170.0		

INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION

Date of		**Production**	
Number of hours	24	**Choke**	
Was swab used during this	No	**Oil produced prior to**	

PRODUCTION DURING TEST PERIOD:

Oil		**Gas**	
Gas - Oil	0	**Flowing Tubing**	
Water			

CALCULATED 24-HOUR RATE

Oil		**Gas**	
Oil Gravity - API - 60.:		**Casing**	
Water			

CASING RECORD

Ro	Type of Casing	Casing Size (in.)	Hole Size	Setting Depth	Multi - Stage Tool	Multi - Stage Shoe	Cement Class	Cement Amoun	Slurry Volume (cu.	Top of Cement (ft.)	TOC Determined By
1	Surface	13 3/8	17 1/2	2155			H	1090	2151.0	0	Circulated to Surface
2	Conductor	20	26	120			A	230	274.0	0	Circulated to Surface
3	Conventional Production	9 5/8	12 1/4	8548			H	2015	3815.0	0	Circulated to Surface

LINER RECORD

Ro	Liner Size	Hole Size	Liner Top	Liner Bottom	Cement Class	Cement Amoun	Slurry Volume (cu.	Top of Cement (ft.)	TOC Determined

N/A

TUBING RECORD

Ro	Size (in.)	Depth Size (ft.)	Packer Depth (ft.)/Type
1	7	7283	7283 / WIRELINE SET, PERMANENT

PRODUCING/INJECTION/DISPOSAL INTERVAL

Ro	Open hole?	From (ft.)	To (ft.)
1	No	L 7332	7576.0
2	No	L 7762	7860.0
3	No	L 7946	7986.0

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC.

Was hydraulic fracturing treatment No

Is well equipped with a downhole sleeve? No

If yes, actuation pressure

Production casing test pressure (PSIG) hydraulic fracturing

Actual maximum pressure (PSIG) during fracturin

Has the hydraulic fracturing fluid disclosure been No

Ro	Type of Operation	Amount and Kind of Material Used	Depth Interval (ft.)	
1	Other	PERFORATIONS	7332	7576

FORMATION RECORD

Formations	Encountere	Depth TVD	Depth MD	Is formation	Remarks
LAFAYETTE - DISPOSAL	No			No	MUD LOGGING AND CUTTING SAMPLES WERE NOT COLLECTED IN THE SHALLOW HOLE SECTION. THEREFORE, SHALLOW FORMATIONS ENCOUNTERED COULD NOT BE CONFIRMED AS LAFAYETTE AND/OR PLEISTOCENE.
CAPROCK - DISPOSAL	No			No	NOT ENCOUNTERED
SPINDLETOP SALT DOME - DISPOSAL	No			No	NOT ENCOUNTERED
FANNETT SALT DOME - DISPOSAL	No			No	NOT ENCOUNTERED
BIG HILL SALT DOME - DISPOSAL	No			No	NOT ENCOUNTERED
PLEISTOCENE-LISSIE - DISPOSAL	No			No	MUD LOGGING AND CUTTING SAMPLES WERE NOT COLLECTED IN THE SHALLOW HOLE SECTION. THEREFORE, SHALLOW FORMATIONS ENCOUNTERED COULD NOT BE CONFIRMED AS LAFAYETTE AND/OR PLEISTOCENE.
MIOCENE - DISPOSAL	Yes	3469.0	3469.0	Yes	LOGGED
FRIO - DISPOSAL	Yes	6424.0	6424.0	Yes	LOGGED, PERFORATIONS IN THE LOWER FRIO SAND FROM 7,331.5'-7,985.5'
MARINULINA - DISPOSAL	Yes	6038.5	6039.0	Yes	LOGGED
HETEROSTEGINA - DISPOSAL	Yes	6182.0	6182.0	Yes	LOGGED

Do the producing interval of this well produce H2S with a concentration in excess of 100 ppm No

Is the completion being downhole commingled No

REMARKS

THE WELL WAS PERFORATED AND SHUT IN. THIS WELL HAS NOT PRODUCED.

RRC REMARKS

PUBLIC COMMENTS:

CASING RECORD :

NONE.

TUBING RECORD:

PRODUCING/INJECTION/DISPOSAL INTERVAL :

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC. :

POTENTIAL TEST DATA:

OPERATOR'S CERTIFICATION

Printed	Josh Calkin	**Title:**	
Telephone	(281) 702-5537	**Date**	02/10/2025

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name: Exxon Mobil low Carbon solutions	Operator P-5 No.: 101256
Cementer Name: Halliburton	Cementer P-5 No.: 347151

WELL INFORMATION

District No.: 3	County: Jefferson	
Well No.: 3	API No.: 42-245-32912	Drilling Permit No.: 898450
Lease Name: Bead Farm	Lease No.:	
Field Name: Wild Cat	Field No.:	

I. CASING CEMENTING DATA

Type of casing: ☐ Conductor ☒ Surface ☐ Intermediate ☐ Liner ☐ Production

Drilled hole size (in.): 17 1/2	Depth of drilled hole (ft.): 2170	Est. % wash-out or hole enlargement: 20%
Size of casing in O.D. (in.): 13 3/8	Casing weight (lbs/ft) and grade: 68# J55	No. of centralizers used: 18
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☑ YES ☐ NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 2,155	Top of liner (ft.):
		Setting depth liner (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date: 08/07/2024

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	705	A		1660	2390
2	385	XH		491	653
3					
Total	1090			2151	3043

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth shoe (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date: 07/04/2024

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1		H			
2					
3					
Total	0			0	0

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth tool (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS

EXXONMOBIL BEAD FARM CO #3 SO#0909508176 SLURRY #1 ECONOCEM SLURRY #2 HALCEM

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

MOHAMED MOUNIR MEKAKDA	Halliburton		
Name and title of cementer's representative	Cementing Company	Signature	
4720 Industrial	Bossier City, LA 71112	903-986-5096	08/07/2024
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

James Harvey	Operations Sup		
Typed or printed name of operator's representative	Title	Signature	
22777 Springwoods Village Spring Tx 77389	512	949 8272	8/8/2024
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

A. **What to file:** An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on one form.

The Form W-15 should be filed with the Form W-3, Plugging Record, unless the Form W-3 is signed by the cementing company representative. When reporting dry holes, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.

B. **How to file:** An oil and gas completion report and Form W-15 may be filed online using the Commission's Online System (https://webapps.rrc.state.tx.us/security/login.do) or a paper copy of the form may be mailed to the Commission in Austin (P.O. Box 12967, Austin, Texas 78711-2967).

C. **Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.

To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 (http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.

D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing **and** Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name:	Byrd	Operator P-5 No.:	
Cementer Name:	CUDD Pumping Services	Cementer P-5 No.:	191917

WELL INFORMATION

District No.:		County:	Atacosa		
Well No.:	Bead Farm Co #3	API No.:		Drilling Permit No.:	
Lease Name:	Bead Farm Co #3	Lease No.:			
Field Name:		Field No.:			

I. CASING CEMENTING DATA

Type of casing: [x] Conductor [ ] Surface [ ] Intermediate [ ] Liner [ ] Production

Drilled hole size (in.): 26	Depth of drilled hole (ft.): 120	Est. % wash-out or hole enlargement: 30	
Size of casing in O.D. (in.): 20	Casing weight (lbs/ft) and grade: 78.6 ppf X-52 Welded)	No. of centralizers used:	
Was cement circulated to ground surface (or bottom of cellar) outside casing? [x] YES [ ] NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 120	Top of liner (ft.):	
		Setting depth liner (ft.):	
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.): 0	Cementing date:	7.26.24

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	230	A	See remarks	274	182
2					
3					
4	230			274	182

II. CASING CEMENTING DATA

Type of casing: [ ] Surface [ ] Intermediate [ ] Production [ ] Tapered production [ ] Multi-stage cement shoe [ ] Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:	
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:	
Tapered string drilled hole size (in.) Upper: Lower:		Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:	
Was cement circulated to ground surface (or bottom of cellar) outside casing? [ ] YES [ ] NO		Setting depth shoe (ft.):	
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:	

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

III. CASING CEMENTING DATA

Type of casing: [ ] Surface [ ] Intermediate [ ] Production [ ] Tapered production [ ] Multi-stage cement/DV tool [ ] Multiple parallel strings

Drilled hole size	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:	
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:	
Tapered string drilled hole size (in.) Upper: Lower:		Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:	
Was cement circulated to ground surface (or bottom of cellar) outside casing? [ ] YES [ ] NO		Setting depth tool (ft.):	
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:	

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date				-	-	-	-
Size of hole of pipe (in.)	-	-	-	-	-	-	-
Depth to bottom of tubing or drill pipe (ft.)	-	-	-	-	-	-	-
Cement retainer setting depth (ft.)	-	-	-	-	-	-	-
CIBP setting depth (ft.)	-	-	-	-	-	-	-
Amount of cement on top of CIBP (ft.)	-	-	-	-	-	-	-
Sacks of cement used				-	-	-	-
Slurry volume pumped (cu. ft.)				-	-	-	-
Calculated top of plug (ft.)				-	-	-	-
Measured top of plug, if tagged (ft.)			-	-	-	-	-
Slurry weight (lbs/gal)				-	-	-	-
Class/type of cement				-	-	-	-
Perforate and squeeze (YES/NO)	-	-	-	-	-	-	-

REMARKS

1 **Tail-100% Cl A + 1% SA001**
2
3
4

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

Scott Womelsdorf	Service Supervisor	CUDD Pumping Services	Scott Womelsdorf
Name and title of cementer's representative		Cementing Company	Signature

1434 CR 422	Pleasanton	TX	78064	(830)-254-4200	7.26.24
Address	City,	State, Zip Code		Tel: Area Code Number	Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that the data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

MICHAEL MATHIS	WELL OPERATIONS SUPERVISOR	
Typed or printed name of operator's representative	Title	Signature

				(512) 949-8292	7/26/2024
Address	City,	State, Zip Code		Tel: Area Code Number	Date

Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

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C. **Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.

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D. **Estimated % wash-out:** If the estimated % wash-outis less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing **and** Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

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G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name: ExxonMobil Low Carbon Solution	Operator P-5 No.: 101256
Cementer Name: Halliburton	Cementer P-5 No.: 347151

WELL INFORMATION

District No.: 03	County: Jefferson	
Well No.: 3	API No.: 42-245-32912	Drilling Permit No.: 898450
Lease Name: Bead Farm	Lease No.:	
Field Name: Wildcat	Field No.:	

I. CASING CEMENTING DATA

Type of casing: ☐ Conductor ☐ Surface ☐ Intermediate ☐ Liner ☒ Production

Drilled hole size (in.): 12-1/4"	Depth of drilled hole (ft.): 8565'	Est. % wash-out or hole enlargement: 17%
Size of casing in O.D. (in.): 9-5/8"	Casing weight (lbs/ft) and grade: 47.5/53ppf L80/13Cr/25Cr	No. of centralizers used: 170
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☑ YES ☐ NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 8548'	Top of liner (ft.): / Setting depth liner (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.): 0	Cementing date: 8-27-2024

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	725	H	N/A	1323	691
2	1290	H	N/A	2492	7732
3					
Total	2015			3815	8423

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth shoe (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth tool (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS

EXXONMOBILE, BEAD FARM, #3, PRODUCTION

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JEROD HACK, SERVICE SUPERVISOR	Halliburton		
Name and title of cementer's representative	Cementing Company	Signature	
4720 Industrial	Bossier City, LA 71112	903-986-5096	08-27-2024
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

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MICHAEL MATHIS	WELLS OPERATIONS SUPERVISOR	
Typed or printed name of operator's representative	Title	Signature
		08-27-2024
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

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D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

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G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON | Sperry Drilling

DGR / EWR-P4 / DIR

Powered by INSITE™

1 : 500

MD Phase Attenuation Log

Country : USA
Field : WILDCAT
Location : Lat: 30° 0' 42.40" North Long: 94° 17' 52.29" West
Well : BEAD FARM 3
Company : EXXONMOBIL LOW C SOL ON STOR LL
Rig : NABORS X33

Company	:	EXXONMOBIL LOW C SOL ON STOR LL
Rig	:	NABORS X33
Well	:	BEAD FARM 3
Field	:	WILDCAT
Country	:	USA
API Number	:	4224532912

LOCATION

Latitude : 30° 0' 42.40" North
Longitude : 94° 17' 52.29" West

UTM X = 3,456,312.030 usft
UTM Y = 13,945,353.690 usft

Other Services

Permanent Datum : Ground Level
Elevation : 27.00 ft
Log Measured From : Drill Floor
32.52 ft Above Permanent Datum
Drilling Measured From : Drill Floor

MD LOG

Elev. KB
DF 59.52 ft
GL 27.00 ft
WD

Depth Logged : 120.00 ft To 8,565.00 ft
Date Logged : 05-Aug-24 To 14-Aug-24
Total Depth MD : 8,565.00 ft TVD : 8,564.26 ft
Spud Date : 05-Aug-24

Unit No. : N/A
Job No. : LF-XX-0909035053
Plot Type : Final
Plot Date : 10-Sep-24

Run No.	Borehole Record (MD)			Size	Casing Record (MD)		
	Size	From	To		Weight	From	To
100	17.500 in	120.00 ft	2,170.00 ft	20.000 in	146.64 lbpf	SURFACE	120.00 ft
200	12.250 in	2,170.00 ft	3,333.00 ft	13.375 in	66.10 lbpf	SURFACE	2,155.00 ft
201	12.250 in	3,333.00 ft	3,394.00 ft				
300	12.250 in	3,394.00 ft	3,503.00 ft				
301	12.250 in	3,503.00 ft	3,515.00 ft				
302	12.250 in	3,515.00 ft	3,572.00 ft				
400	12.250 in	3,572.00 ft	7,770.00 ft				
401	12.250 in	7,770.00 ft	7,815.00 ft				
500	12.250 in	7,815.00 ft	8,565.00 ft				

WELL INFORMATION

MWD Run Number	100	200	300	400	500
Date run completed	06-Aug-24	09-Aug-24	10-Aug-24	12-Aug-24	15-Aug-24
Rig Bit Number	100	200	300	400	500
Bit Size (in)	17.500	12.250	12.250	12.250	12.250
Tool Nominal OD (in)	8.000	8.000	8.000	8.000	8.000
Log Start Depth (MD, ft)	120.00	2,170.00	3,394.00	3,572.00	7,815.00
Log End Depth (MD, ft)	2,170.00	3,333.00	3,503.00	7,770.00	8,565.00
Drill or Wipe	Drill	Drill	Drill and Wipe	Drill and Wipe	Drill and Wipe
Drill/Wipe Start Date and Time	05-Aug-24 23:00	08-Aug-24 17:40	10-Aug-24 02:03	11-Aug-24 13:09	14-Aug-24 08:26
Drill/Wipe End Date and Time	06-Aug-24 11:10	09-Aug-24 03:17	10-Aug-24 04:37	12-Aug-24 13:50	14-Aug-24 08:26
Min Inc (deg) @ Depth (MD, ft)	0.13 @ 317.00	0.67 @ 3,304.00	0.92 @ 3,471.00	0.13 @ 7,374.00	0.13 @ 7,754.00
Max Inc (deg) @ Depth (MD, ft)	0.92 @ 2,002.00	1.00 @ 2,568.00	0.98 @ 3,411.00	2.27 @ 3,693.00	0.75 @ 7,949.00
Bit TFA(in2) / Bit Type	1.23 / GT65s	1.23 / HD65s	1.23 / HD65s	1.23 / HD65s	1.23 / HD65s
Flow Rate (gpm)	700.00	750.00	750.00	740.00	689.00
Max AV (fpm) / CV (fpm) @ MWD	80.0 / 46.0	54.0 / 35.0	43.0 / 32.0	45.0 / 32.0	43.0 / 38.0
Fluid Type	Native/Spud Mud	Diesel Mud Base	Diesel Mud Base	Diesel Mud Base	Diesel Mud Base
Density (ppg) / Viscosity (spqt)	9.20 / 34.00	10.35 / 74.00	10.35 / 68.00	10.40 / 65.00	10.40 / 65.00
Filtrate CL (ppm)	1,300.00	61,000.00	64,000.00	66,000.00	60,000.00
pH / API Filtrate (mptm)	8.00 / 8	N/A / 12	N/A / 0	N/A / 0	N/A / 0
PV (cP) / YP (lhf2)	4 / 3.00	24 / 32.00	23 / 21.00	21 / 24.00	16 / 18.00
% Solids / % Sand	4.9 / 0	10.2 / 0	11 / 0	11.4 / .1	11.7 / 0
% Oil / Oil:Water Ratio	0 / 0:100	54 / 62:38	52 / 60:40	55.5 / 65:35	58.5 / 68:32
Rm @ Measured Temp (degF)	0.200 @ 87.00	N/A @ N/A	N/A @ N/A	N/A @ N/A	N/A @ N/A
Rmf @ Measured Temp (degF)	0.200 @ 87.00	N/A @ N/A	N/A @ N/A	N/A @ N/A	N/A @ N/A
Rmc @ Measured Temp (degF)	0.200 @ 87.00	N/A @ N/A	N/A @ N/A	N/A @ N/A	N/A @ N/A
Max Tool Temp (degF) / Source	127.29 / HCIM	152.00 / HCIM	130.82 / HCIM	173.18 / HCIM	169.65 / HCIM
Rm @ Max Tool Temp (degF)	N/A @ 127.29	N/A @ 152.00	N/A @ 130.82	N/A @ 173.18	N/A @ 169.65
Lead MWD Engineer	Nathan Lakin	Nathan Lakin	Nathan Lakin	Nathan Lakin	Nathan Lakin
Customer Representative	N/A	N/A	N/A	N/A	N/A

SENSOR INFORMATION

Downhole Processor Information

Tool Type	HCIM	HCIM	HCIM	HCIM	HCIM
Software Version	98.43	98.43	98.43	98.43	98.43
Sub Serial Number	11432374	11432374	11432374	11432374	11432374
Insert Serial Number	11753209	11753209	11753209	11753209	11753209
Date and Time Initialized	05-Aug-24 19:34	08-Aug-24 10:27	09-Aug-24 22:54	11-Aug-24 06:34	13-Aug-24 21:15
Date and Time Read	07-Aug-24 01:00	09-Aug-24 07:20	12-Aug-24 14:30	12-Aug-24 23:30	14-Aug-24 20:45
ECMB SW Version	N/A	N/A	N/A	N/A	N/A

Directional Sensor Information

Tool Type	PCDC	PCDC	PCDC	PCDC	PCDC
Distance From Bit (ft)	36.08	26.50	26.50	66.33	66.72
Software Version	6.43	6.43	6.43	6.43	6.43
Sub Serial Number	10435619	10435619	10435619	10435619	10435619
Sonde Serial Number	13008879	13008879	13008879	13008879	13008879
Sensor ID Number	N/A	N/A	N/A	N/A	N/A
Toolface Offset (deg)	0.00	0.00	0.00	54.00	276.00

Gamma Ray Sensor Information

Tool Type	DGR	DGR	DGR	DGR	DGR
Distance From Bit (ft)	25.64	16.06	16.06	55.82	56.28
Recorded Sample Period (sec)	4	4	4	4	4
Software Version	N/A	N/A	N/A	N/A	N/A
Sub Serial Number	11654485	11654485	11654485	11654485	11654485
Insert/Sonde Serial Number	11671533	11671533	11671533	11671533	11671533

Resistivity Sensor Information

Tool Type	EWR-P4				
Distance From Bit (ft)	11.55				
Recorded Sample Period (sec)	4				
Software Version	1.51				
Sub Serial Number	10673350				
Receiver Insert Serial Number	11827847				
Transmitter Insert Serial Number	11707807				
Receiver Orientation	Down				

REMARKS

All depths are referenced to the driller's pipe tally.

DGXT - Gamma Ray formation exposure time
EWXT - Resistivity formation exposure time

Default 1:500 Log Smoothing:
Interval Resolution: 0.5ft
Window Interval:(+/-) 0.6ft
Gap Fill: 3.0ft

Archive Name: BEAD_FARM_3_500MD_PHASE_ATTEN_120_8565

Plot Width: 8.25 in

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
Oil and Gas Division

ELECTRIC LOG STATUS REPORT

FORM L-1

Tracking No.: 326180

This facsimile L-1 was generated electronically from data submitted to the RRC.

Instructions

When to File Form L-1:
- with Forms G-1, W-2, and GT-1 for new and deepened gas, oil, and geothermal wells
- with Form W-3 for plugged dry holes
- when sending in a log which was held under a request for confidentiality and the period for confidentiality has not yet expired.

When is Form L-1 NOT required:
- with Forms W-2, G-1, and GT-1 filed for injection wells, disposal wells, water supply wells, service wells, re-test wells, re-classifications, and plugbacks of oil, gas or geothermal wells
- with Form W-3 for plugging of other than a dry hole

Where to File Form L-1:
- with the appropriate Commission district office

Filling out Form L-1:
- Section I and the signature section must be filled out for all wells
- complete only the appropriate part of Section II

Type of log required:
- any wireline survey run for the purpose of obtaining lithology, porosity, or resistivity information
- no more than one such log is required but it must be of the subject well
- if such log is NOT run on the subject well, do NOT substitute any other type of log; just select Section II, Part A below

SECTION I. IDENTIFICATION

Operator Name: EXXONMOBIL LOW C SOL ON STOR LLC	District No. 03	Completion Date: 10/18/2024
Field Name WILDCAT	Drilling Permit No. 898450	
Lease Name BEAD FARM	Lease/ID No. 28200	Well No. 3
County JEFFERSON	API No. 42- 245-32912	

SECTION II. LOG STATUS (Complete either A or B)

☐ A. BASIC ELECTRIC LOG NOT RUN

☒ B. BASIC ELECTRIC LOG RUN. (Select one)

☒ 1. Confidentiality is requested and a copy of the header for each log that has been run on the well is attached.

☐ 2. Confidentiality already granted on basic electric log covering this interval (applicable to deepened wells only).

☐ 3. Basic electric log covering this interval already on file with Commission (applicable to deepened wells only).

☐ 4. Log attached to (select one):

☐ (a) Form L-1 (this form). If the company/lease name on log is different from that shown in Section I, please enter name on log here: _____

Check here if attached log is being submitted after being held confidential. ☐

☐ (b) Form P-7, Application for Discovery Allowable and New Field Designation.

☐ (c) Form W-4, Application for Multiple Completion:

Lease or ID No(s). _____

Well No(s). _____

Josh Calkin
Signature

Title

EXXONMOBIL LOW C SOL ON STOR LLC
Name (print)

(281) 702-5537
Phone

12/18/2024
Date

-FOR RAILROAD COMMISSION USE ONLY-

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON

4607 HWY 90 EAST • BROUSSARD, LA 70518

PHONE 337 837 3061 • FAX 337 837 4400

Jefferson County,
State of Texas

I, **Kristen Killen,** certify that: I am employed by Halliburton Energy Service and that I did on the day(s) of **August 5, 2024 to August 14, 2024** conduct or supervise the taking of Directional Surveys as follow:

- **317' to a depth of 8497' MWD surveys performed by Sperry Drilling MWD**
- **Final survey is projected to a total depth of 8565'**

I certify that the data is true, correct, complete and within the limitations of the tool as set forth by Halliburton Energy Services. I further certify that I am authorized and qualified to make this report, that this survey was conducted at the request of **EXXONMOBIL LOW C SOL ON STOR LLC** for the **BEAD FARM 3** in **Jefferson County, TX,** and that I have reviewed this report and find that it conforms to the principles and procedures set forth by Halliburton Energy Service for quality well surveying.

Kristen Killen, Log Analyst

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON
4607 HWY 90 EAST • BROUSSARD, LA 70518
PHONE 337 837 3061 • FAX 337 837 4400

September 9, 2024

Railroad Commission of Texas
Oil and Gas Division
P.O. Box 12967
Capital Station
Austin, TX 78711

Re: EXXONMOBIL LOW C SOL ON STOR LLC
R.R.C. Operator No. 101256
BEAD FARM 3
Permit No. 898450
Jefferson County, TX
API # 42-245-32912

Attention: Ms. Pam Johns

Enclosed, please find one copy of the survey performed on the above referenced well by Halliburton Energy Services, Inc. Operator #347-151.

Other information required by your office is as follows:

Name & Title of Surveyor	-	Kristen Killen, Log Analyst
Drainhole Number	-	Original
Surveyed Depths	-	317' – 8497' MWD Surveys performed by Sperry Drilling
Dates Performed	-	August 5, 2024 to August 14, 2024
Type of Survey	-	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the listed e-mail address.

Respectfully,

Kristen Killen
Log Analyst
Kristen.Killen@Halliburton.com
Halliburton / Sperry Drilling

Enclosures
RE: LA-MM 909035053

CONFIDENTIAL BUSINESS INFORMATION

ExxonMobil

Jefferson County, Tx_NAD83
Rose Prospect CCS
Bead Farm #3

003 ST00BP00

Design: 003 ST00BP00

Sperry Drilling Services

Geodetic Report

22 August, 2024

Well Coordinates: 13,945,353.69 N, 3,456,312.03 E (30° 00' 42.40" N, 094° 17' 52.29" W)
Ground Level: 27.00 usft

Local Coordinate Origin:	Centered on Well Bead Farm #3
Viewing Datum:	(32.52') Nabors X-33 @ 59.52usft (Plan)
TVDs to System:	N
North Reference:	Grid
Unit System:	API US Survey Feet

Version: 5000.17 Build: 02

HALLIBURTON

Design Report for Bead Farm #3 - 003 ST00BP00

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude (usft)	Geographic Coordinates Longitude (usft)	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	30° 0' 42.403 N	94° 17' 52.286 W	13,945,353.69	3,456,312.03
317.00	0.13	105.78	317.00	-0.10	0.35	30° 0' 42.402 N	94° 17' 52.282 W	13,945,353.59	3,456,312.38
405.00	0.48	59.26	405.00	0.06	0.76	30° 0' 42.403 N	94° 17' 52.277 W	13,945,353.75	3,456,312.79
499.00	0.31	43.43	499.00	0.45	1.27	30° 0' 42.407 N	94° 17' 52.271 W	13,945,354.14	3,456,313.30
593.00	0.18	41.92	593.00	0.74	1.55	30° 0' 42.410 N	94° 17' 52.268 W	13,945,354.43	3,456,313.58
685.00	0.22	50.85	684.99	0.96	1.78	30° 0' 42.412 N	94° 17' 52.265 W	13,945,354.65	3,456,313.81
768.00	0.25	41.72	767.99	1.20	2.02	30° 0' 42.414 N	94° 17' 52.262 W	13,945,354.89	3,456,314.05
865.00	0.18	5.76	864.99	1.51	2.18	30° 0' 42.417 N	94° 17' 52.260 W	13,945,355.20	3,456,314.21
963.00	0.25	336.43	962.99	1.86	2.11	30° 0' 42.421 N	94° 17' 52.261 W	13,945,355.55	3,456,314.14
1,060.00	0.45	349.02	1,059.99	2.43	1.95	30° 0' 42.426 N	94° 17' 52.262 W	13,945,356.12	3,456,313.98
1,157.00	0.39	36.90	1,156.99	3.06	2.08	30° 0' 42.433 N	94° 17' 52.261 W	13,945,356.75	3,456,314.11
1,247.00	0.76	43.05	1,246.98	3.74	2.67	30° 0' 42.439 N	94° 17' 52.254 W	13,945,357.43	3,456,314.70
1,338.00	0.50	80.63	1,337.98	4.25	3.47	30° 0' 42.444 N	94° 17' 52.244 W	13,945,357.94	3,456,315.50
1,436.00	0.38	73.99	1,435.98	4.41	4.21	30° 0' 42.445 N	94° 17' 52.236 W	13,945,358.10	3,456,316.24
1,527.00	0.56	41.34	1,526.97	4.83	4.79	30° 0' 42.449 N	94° 17' 52.229 W	13,945,358.52	3,456,316.82
1,623.00	0.14	230.38	1,622.97	5.10	5.01	30° 0' 42.452 N	94° 17' 52.227 W	13,945,358.79	3,456,317.04
1,720.00	0.88	240.64	1,719.97	4.66	4.27	30° 0' 42.447 N	94° 17' 52.235 W	13,945,358.35	3,456,316.30
1,815.00	0.90	236.11	1,814.96	3.89	3.01	30° 0' 42.440 N	94° 17' 52.250 W	13,945,357.58	3,456,315.05
1,908.00	0.86	241.23	1,907.94	3.15	1.80	30° 0' 42.433 N	94° 17' 52.264 W	13,945,356.84	3,456,313.83
2,002.00	0.92	198.67	2,001.93	2.09	0.94	30° 0' 42.423 N	94° 17' 52.274 W	13,945,355.78	3,456,312.97
2,095.00	0.78	198.22	2,094.92	0.78	0.50	30° 0' 42.411 N	94° 17' 52.280 W	13,945,354.47	3,456,312.53
2,132.00	0.86	199.33	2,131.92	0.28	0.33	30° 0' 42.406 N	94° 17' 52.282 W	13,945,353.97	3,456,312.36
2,181.00	0.97	198.19	2,180.91	-0.46	0.08	30° 0' 42.398 N	94° 17' 52.285 W	13,945,353.23	3,456,312.11
2,278.00	0.94	195.43	2,277.90	-2.01	-0.39	30° 0' 42.383 N	94° 17' 52.291 W	13,945,351.68	3,456,311.64
2,374.00	0.96	190.75	2,373.89	-3.56	-0.75	30° 0' 42.368 N	94° 17' 52.296 W	13,945,350.13	3,456,311.28
2,472.00	0.97	201.76	2,471.87	-5.13	-1.21	30° 0' 42.353 N	94° 17' 52.302 W	13,945,348.56	3,456,310.82
2,568.00	1.00	206.11	2,567.86	-6.64	-1.88	30° 0' 42.338 N	94° 17' 52.310 W	13,945,347.05	3,456,310.15
2,663.00	0.89	206.72	2,662.85	-8.04	-2.58	30° 0' 42.325 N	94° 17' 52.319 W	13,945,345.65	3,456,309.45
2,755.00	0.79	205.85	2,754.84	-9.25	-3.17	30° 0' 42.313 N	94° 17' 52.326 W	13,945,344.44	3,456,308.86
2,847.00	0.75	212.30	2,846.83	-10.33	-3.77	30° 0' 42.302 N	94° 17' 52.333 W	13,945,343.36	3,456,308.26
2,940.00	0.81	208.77	2,939.82	-11.42	-4.41	30° 0' 42.292 N	94° 17' 52.341 W	13,945,342.27	3,456,307.62
3,036.00	0.75	206.15	3,035.81	-12.58	-5.02	30° 0' 42.281 N	94° 17' 52.349 W	13,945,341.11	3,456,307.01
3,133.00	0.81	204.76	3,132.80	-13.77	-5.58	30° 0' 42.269 N	94° 17' 52.356 W	13,945,339.92	3,456,306.45
3,228.00	0.73	204.84	3,227.79	-14.93	-6.12	30° 0' 42.258 N	94° 17' 52.362 W	13,945,338.76	3,456,305.91
3,304.00	0.67	204.58	3,303.79	-15.78	-6.51	30° 0' 42.250 N	94° 17' 52.367 W	13,945,337.91	3,456,305.52
3,411.00	0.98	231.56	3,410.78	-16.91	-7.49	30° 0' 42.239 N	94° 17' 52.379 W	13,945,336.78	3,456,304.54
3,456.95	0.93	232.86	3,456.72	-17.38	-8.09	30° 0' 42.234 N	94° 17' 52.386 W	13,945,336.31	3,456,303.94
3,471.00	0.92	233.29	3,470.77	-17.52	-8.27	30° 0' 42.233 N	94° 17' 52.388 W	13,945,336.17	3,456,303.76
3,693.00	2.27	232.20	3,692.68	-21.28	-13.18	30° 0' 42.198 N	94° 17' 52.445 W	13,945,332.41	3,456,298.85
3,790.00	2.13	234.46	3,789.61	-23.51	-16.16	30° 0' 42.177 N	94° 17' 52.480 W	13,945,330.18	3,456,295.87
3,877.00	2.10	229.32	3,876.55	-25.48	-18.69	30° 0' 42.158 N	94° 17' 52.510 W	13,945,328.21	3,456,293.34
3,973.00	1.87	229.17	3,972.49	-27.66	-21.20	30° 0' 42.138 N	94° 17' 52.539 W	13,945,326.03	3,456,290.83

Design Report for Bead Farm #3 - 003 ST00BP00

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude (usft)	Geographic Coordinates Longitude (usft)	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
4,069.00	1.58	227.05	4,068.45	-29.58	-23.36	30° 0' 42.120 N	94° 17' 52.565 W	13,945,324.11	3,456,288.67
4,166.00	1.18	229.82	4,165.42	-31.14	-25.10	30° 0' 42.105 N	94° 17' 52.585 W	13,945,322.55	3,456,286.93
4,260.00	1.13	222.08	4,259.40	-32.45	-26.46	30° 0' 42.093 N	94° 17' 52.601 W	13,945,321.24	3,456,285.57
4,355.00	1.30	218.12	4,354.38	-33.99	-27.75	30° 0' 42.078 N	94° 17' 52.617 W	13,945,319.70	3,456,284.28
4,545.00	0.88	214.41	4,544.34	-36.89	-29.91	30° 0' 42.050 N	94° 17' 52.643 W	13,945,316.80	3,456,282.12
4,642.00	0.63	222.34	4,641.33	-37.90	-30.69	30° 0' 42.040 N	94° 17' 52.652 W	13,945,315.79	3,456,281.34
4,825.00	0.44	231.95	4,824.33	-39.08	-31.92	30° 0' 42.029 N	94° 17' 52.666 W	13,945,314.61	3,456,280.11
5,018.00	0.36	262.36	5,017.32	-39.61	-33.10	30° 0' 42.024 N	94° 17' 52.680 W	13,945,314.08	3,456,278.93
5,105.00	0.25	225.32	5,104.32	-39.78	-33.51	30° 0' 42.023 N	94° 17' 52.685 W	13,945,313.91	3,456,278.52
5,200.00	0.39	177.91	5,199.32	-40.25	-33.65	30° 0' 42.018 N	94° 17' 52.687 W	13,945,313.44	3,456,278.38
5,391.00	0.31	182.05	5,390.31	-41.42	-33.64	30° 0' 42.007 N	94° 17' 52.687 W	13,945,312.27	3,456,278.39
5,486.00	0.31	169.41	5,485.31	-41.93	-33.60	30° 0' 42.002 N	94° 17' 52.687 W	13,945,311.76	3,456,278.43
5,579.00	0.25	115.14	5,578.31	-42.26	-33.37	30° 0' 41.998 N	94° 17' 52.684 W	13,945,311.43	3,456,278.66
5,675.00	0.19	109.32	5,674.31	-42.40	-33.03	30° 0' 41.997 N	94° 17' 52.681 W	13,945,311.29	3,456,279.00
5,771.00	0.26	142.20	5,770.31	-42.63	-32.75	30° 0' 41.994 N	94° 17' 52.677 W	13,945,311.06	3,456,279.28
5,867.00	0.18	75.89	5,866.31	-42.76	-32.47	30° 0' 41.993 N	94° 17' 52.674 W	13,945,310.93	3,456,279.56
6,047.00	0.14	37.10	6,046.31	-42.52	-32.06	30° 0' 41.995 N	94° 17' 52.670 W	13,945,311.17	3,456,279.97
6,238.00	0.42	17.33	6,237.31	-41.66	-31.71	30° 0' 42.004 N	94° 17' 52.665 W	13,945,312.03	3,456,280.32
6,335.00	0.25	355.92	6,334.31	-41.11	-31.62	30° 0' 42.009 N	94° 17' 52.664 W	13,945,312.58	3,456,280.41
6,430.00	0.25	355.77	6,429.30	-40.70	-31.65	30° 0' 42.013 N	94° 17' 52.664 W	13,945,312.99	3,456,280.38
6,525.00	0.26	299.85	6,524.30	-40.39	-31.85	30° 0' 42.016 N	94° 17' 52.666 W	13,945,313.30	3,456,280.18
6,619.00	0.25	289.02	6,618.30	-40.21	-32.23	30° 0' 42.018 N	94° 17' 52.671 W	13,945,313.48	3,456,279.80
6,809.00	0.40	280.55	6,808.30	-39.96	-33.28	30° 0' 42.021 N	94° 17' 52.682 W	13,945,313.73	3,456,278.75
6,998.00	0.28	240.88	6,997.30	-40.06	-34.33	30° 0' 42.020 N	94° 17' 52.694 W	13,945,313.63	3,456,277.70
7,185.00	0.18	170.15	7,184.30	-40.57	-34.68	30° 0' 42.016 N	94° 17' 52.698 W	13,945,313.12	3,456,277.35
7,282.00	0.25	146.16	7,281.29	-40.90	-34.53	30° 0' 42.012 N	94° 17' 52.697 W	13,945,312.79	3,456,277.50
7,374.00	0.13	148.56	7,373.29	-41.15	-34.37	30° 0' 42.010 N	94° 17' 52.695 W	13,945,312.54	3,456,277.66
7,471.00	0.26	192.80	7,470.29	-41.46	-34.36	30° 0' 42.007 N	94° 17' 52.695 W	13,945,312.23	3,456,277.67
7,563.00	0.38	181.88	7,562.29	-41.97	-34.42	30° 0' 42.002 N	94° 17' 52.696 W	13,945,311.72	3,456,277.61
7,658.00	0.19	175.36	7,657.29	-42.44	-34.41	30° 0' 41.997 N	94° 17' 52.696 W	13,945,311.25	3,456,277.62
7,754.00	0.13	208.60	7,753.29	-42.70	-34.45	30° 0' 41.994 N	94° 17' 52.697 W	13,945,310.99	3,456,277.58
7,850.00	0.53	265.40	7,849.29	-42.83	-34.95	30° 0' 41.993 N	94° 17' 52.703 W	13,945,310.86	3,456,277.08
7,949.00	0.75	264.57	7,948.28	-42.93	-36.05	30° 0' 41.993 N	94° 17' 52.715 W	13,945,310.76	3,456,275.98
8,135.00	0.62	255.66	8,134.27	-43.29	-38.24	30° 0' 41.990 N	94° 17' 52.740 W	13,945,310.40	3,456,273.79
8,321.00	0.38	253.90	8,320.26	-43.71	-39.80	30° 0' 41.987 N	94° 17' 52.758 W	13,945,309.98	3,456,272.23
8,416.00	0.19	261.71	8,415.26	-43.82	-40.26	30° 0' 41.986 N	94° 17' 52.763 W	13,945,309.87	3,456,271.77
8,497.00	0.32	247.32	8,496.26	-43.93	-40.60	30° 0' 41.985 N	94° 17' 52.767 W	13,945,309.76	3,456,271.43
8,565.00	0.32	247.32	8,564.26	-44.08	-40.95	30° 0' 41.983 N	94° 17' 52.771 W	13,945,309.61	3,456,271.08

Design Report for Bead Farm #3 - 003 ST00BP00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
8,565.00	8,564.26	-44.08	-40.95	Proj. to Bit

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	0.00	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
317.00	2,132.00	01 HAL MWD (MagVarMS) 17 1/2" Hole 317' - 2132'	3_MWD+HRGM+MS
2,181.00	8,497.00	02 HAL MWD (MagVarMS) 12 1/4" Hole 2181' - 8497'	3_MWD+HRGM+MS

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
152.50	152.50	20" Conductor Casing	20	20
2,155.00	2,154.92	13-3/8" Surface Casing	13-3/8	17-1/2
8,548.48	8,547.74	9-5/8" Production Casing	9-5/8	12-1/4

Design Targets

Shape	Target Name	TVD ()	Northing ()	Easting ()	+N/-S	+E/-W	Created	Updated

Design Report for Bead Farm #3 - 003 ST00BP00

Directional Difficulty Index

Average Dogleg over Survey:	0.19 °/100usft	Maximum Dogleg over Survey:	0.77 °/100usft at 1,720.00 usft
Net Tortousity applicable to Plans:	0.19 °/100usft	Directional Difficulty Index:	3.170

Audit Info

North Reference Sheet for Rose Prospect CCS - Bead Farm #3 - 003 ST00BP00

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to (32.52') Nabors X-33 @ 59.52usft (Plan). Northing and Easting are relative to Bead Farm #3

Coordinate System is US State Plane 1983, Texas South Central Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is 99° 0' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:30° 17' 0.000 N°

False Easting: 1,968,500.00usft, False Northing: 13,123,333.33usft, Scale Reduction: 0.99993284

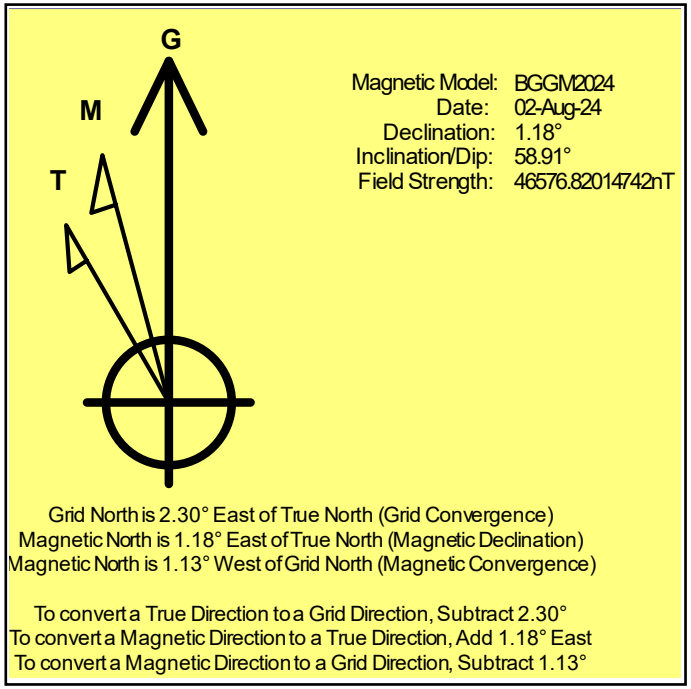
Grid Coordinates of Well: 13,945,353.69 usft N, 3,456,312.03 usft E

Geographical Coordinates of Well: 30° 00' 42.40" N, 094° 17' 52.29" W

Grid Convergence at Surface is: 2.30°

Based upon Minimum Curvature type calculations, at a Measured Depth of 8,565.00usft

the Bottom Hole Displacement is 60.17usft in the Direction of 222.90° (Grid).
Magnetic Convergence at surface is: 1.13° (2 August 2024, , BGGM2024)



CONFIDENTIAL BUSINESS INFORMATION

Railroad Commission of Texas

PERMIT TO DRILL, RE-COMPLETE, OR RE-ENTER ON REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

CONDITIONS AND INSTRUCTIONS

Permit Invalidation. It is the operator's responsibility to make sure that the permitted location complies with Commission density and spacing rules in effect on the spud date. The permit becomes invalid automatically if, because of a field rule change or the drilling of another well, the stated location is not in compliance with Commission field rules on the spud date. If this occurs, application for an exception to Statewide Rules 37 and 38 must be made and a special permit granted prior to spudding. Failure to do so may result in an allowable not being assigned and/or enforcement procedures being initiated.

Notice Requirements. Per H.B 630, signed May 8, 2007, the operator is required to provide notice to the surface owner no later than the 15th business day after the Commission issues a permit to drill. Please refer to subchapter Q Sec. 91.751-91.755 of the Texas Natural Resources Code for applicability.

Permit expiration. This permit expires two (2) years from the date of issuance shown on the original permit. The permit period will not be extended.

Drilling Permit Number. The drilling permit number shown on the permit MUST be given as a reference with any notification to the district (see below), correspondence, or application concerning this permit.

Rule 37 Exception Permits. This Statewide Rule 37 exception permit is granted under either provision Rule 37 (h)(2)(A) or 37(h)(2)(B). Be advised that a permit granted under Rule 37(h)(2)(A), notice of application, is subject to the General Rules of Practice and Procedures and if a protest is received under Section 1.3, "Filing of Documents," and/or Section 1.4, "Computation of Time," the permit may be deemed invalid.

Before Drilling

Fresh Water Sand Protection. The operator must set and cement sufficient surface casing to protect all usable-quality water, as defined by the Railroad Commission of Texas (RRC) Groundwater Advisory Unit (GWAU). Before drilling a well, the operator must obtain a letter from the Railroad Commission of Texas stating the depth to which water needs protection, Write: Railroad Commission of Texas, Groundwater Advisory Unit (GWAU), P.O. Box 12967, Austin, TX 78711-3087. File a copy of the letter with the appropriate district office.

Accessing the Well Site. If an OPERATOR, well equipment TRANSPORTER or WELL service provider must access the well site from a roadway on the state highway system (Interstate, U.S. Highway, State Highway, Farm-to-Market Road, Ranch-to-Market Road, etc.), an access permit is required from TxDOT. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

Water Transport to Well Site. If an operator intends to transport water to the well site through a temporary pipeline laid above ground on the state's right-of-way, an additional TxDOT permit is required. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

*NOTIFICATION

The operator is **REQUIRED** to notify the district office when setting surface casing, intermediate casing, and production casing, or when plugging a dry hole. The district office **MUST** also be notified if the operator intends to re-enter a plugged well or re-complete a well into a different regulatory field. Time requirements are given below. The drilling permit number **MUST** be given with such notifications.

During Drilling

Permit at Drilling Site. A copy of the Form W-1 Drilling Permit Application, the location plat, a copy of Statewide Rule 13 alternate surface casing setting depth approval from the district office, if applicable, and this drilling permit must be kept at the permitted well site throughout drilling operations.

***Notification of Setting Casing.** The operator MUST call in notification to the appropriate district office (phone number shown the on permit) a minimum of eight (8) hours prior to the setting of surface casing, intermediate casing, AND production casing. The individual giving notification MUST be able to advise the district office of the drilling permit number.

***Notification of Re-completion/Re-entry.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of eight (8) hours prior to the initiation of drilling or re-completion operations. The individual giving notification MUST be able to advise the district office of the drilling permit number.

Completion and Plugging Reports

Hydraulic Fracture Stimulation using Diesel Fuel: Most operators in Texas do not use diesel fuel in hydraulic fracturing fluids. Section 322 of the Energy Policy Act of 2005 amended the Underground Injection Control (UIC) portion of the federal Safe Drinking Water Act (42 USC 300h(d)) to define "underground Injection" to *EXCLUDE* " ...the underground injection of fluids or propping agents (*other than diesel fuels*) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities." (italic and underlining added.) Therefore, hydraulic fracturing may be subject to regulation under the federal UIC regulations if diesel fuel is injected or used as a propping agent. EPA defined "diesel fuel" using the following five (5) Chemical Abstract Service numbers: 68334-30-5 Primary Name: Fuels, diesel; 68476-34-6 Primary Name: Fuels, diesel, No. 2; 68476-30-2 Primary Name: Fuel oil No. 2; 68476-31-3 Primary Name: Fuel oil, No. 4; and 8008-20-6 Primary Name: Kerosene. As a result, an injection well permit would be required before performing hydraulic fracture stimulation using diesel fuel as defined by EPA on any well in Texas. Hydraulic fracture stimulation using diesel fuel as defined by EPA on a well in Texas without an injection well permit could result in enforcement action.

Producing Well. Statewide Rule 16 states that the operator of a well shall file with the Commission the appropriate completion report within ninety (90) days after completion of the well or within one hundred and fifty (150) days after the date on which the drilling operation is completed, whichever is earlier. Completion of the well in a field authorized by this permit voids the permit for all other fields included in the permit unless the operator indicates on the initial completion report that the well is to be a dual or multiple completion and promptly submits an application for multiple completion. All zones are required to be completed before the expiration date on the existing permit. Statewide Rule 40(d) requires that upon successful completion of a well in the same reservoir as any other well previously assigned the same acreage, proration plats and P-15s or P-16s (if required) or a lease plat and P-16 must be submitted with no double assignment of acreage unless authorized by rule.

Dry or Noncommercial Hole. Statewide Rule 14(b)(2) prohibits suspension of operations on each dry or non-commercial well without plugging unless the hole is cased and the casing is cemented in compliance with Commission rules. If properly cased, Statewide Rule 14(b)(2) requires that plugging operations must begin within a period of one (1) year after drilling or operations have ceased. Plugging operations must proceed with due diligence until completed. An extension to the one-year plugging requirement may be granted under the provisions stated in Statewide Rule 14(b)(2).

Intention to Plug. The operator must file a Form W-3A (Notice of Intention to Plug and Abandon) with the district office at least five (5) days prior to beginning plugging operations. If, however, a drilling rig is already at work on location and ready to begin plugging operations, the district director or the director's delegate may waive this requirement upon request, and verbally approve the proposed plugging procedures.

***Notification of Plugging a Dry Hole.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of four (4) hours prior to beginning plugging operations. The individual giving the notification MUST be able to advise the district office of the drilling permit number and all water protection depths for that location as stated in the Groundwater Advisory Unit letter.

DIRECT INQUIRIES TO: DRILLING PERMIT SECTION, OIL AND GAS DIVISION

PHONE
(512) 463-6751

MAIL:
PO Box 12967
Austin, Texas, 78711-2967

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER	DATE PERMIT ISSUED OR AMENDED	DISTRICT
898450	Apr 17, 2024	* 03
API NUMBER	FORM W-1 RECEIVED	COUNTY
42-245-32912	Mar 27, 2024	JEFFERSON
TYPE OF OPERATION	WELLBORE PROFILE(S)	ACRES
NEW DRILL	Vertical	650

OPERATOR 101256

EXXONMOBIL LOW C SOL ON STOR LLC

ATTN EDWARD E GRAHAM
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389

NOTICE
This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored.
District Office Telephone No:
(713) 869-5001

LEASE NAME	WELL NUMBER
BEAD FARM	3
LOCATION	TOTAL DEPTH
3.35 miles SE direction from CHINA	10000

Section, Block and/or Survey

SECTION 8 BLOCK ABSTRACT 658

SURVEY HT&B RR CO/TURNER, D C

DISTANCE TO SURVEY LINES	DISTANCE TO NEAREST LEASE LINE
1742 ft. WEST 2937 ft. NORTH	ft.
DISTANCE TO LEASE LINES	DISTANCE TO NEAREST WELL ON LEASE
1742 ft. WEST 2937 ft. NORTH	See FIELD(s) Below

FIELD(s) and LIMITATIONS:

* SEE FIELD DISTRICT FOR REPORTING PURPOSES *

FIELD NAME / LEASE NAME	ACRES / NEAREST LEASE	DEPTH	WELL # / NEAREST WE	DIST
WILDCAT	650.00	8,600	3	03
BEAD FARM			0	

RESTRICTIONS: For exploratory test only

THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS

This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.

This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

SWR #13 Formation Data

JEFFERSON (245) County

Formation	Remarks	Geological Order	Effective Date
LAFAYETTE	disposal	1	12/17/2013
CAPROCK	disposal	2	12/17/2013
SPINDLETOP SALT DOME	disposal	3	12/17/2013
FANNETT SALT DOME	disposal	4	12/17/2013
BIG HILL SALT DOME	disposal	5	12/17/2013
PLEISTOCENE-LISSIE	disposal	6	12/17/2013
MIOCENE	disposal	7	12/17/2013
FRIO	disposal	8	12/17/2013
MARINULINA	disposal	9	12/17/2013
HETEROSTEGINA	disposal	10	12/17/2013

The above list may not be all inclusive, and may also include formations that do not intersect all wellbores. The listing order of the Formation information reflects the general stratigraphic order and relative geologic age. This is a dynamic list subject to updates and revisions. It is the operator's responsibility to make sure that at the time of spudding the well the most current list is being referenced. Refer to the RRC website at the following address for the most recent information.
http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info

CONFIDENTIAL BUSINESS INFORMATION

WELL LOCATION PLAT
EXXONMOBIL LOW CARBON SOLUTIONS
BEAD FARM #3
D.C. TURNER SURVEY, A-658
JEFFERSON COUNTY, TEXAS

1000' 500' 0 1000'

SURVEYING & MAPPING INC.
TBPELS Firm No. 10032700
21072 FM 2493 / Bullard, Texas 75757 / 903-581-7759

G.M. EAST SURVEY
A-823

H.T. & B. R.R. CO. SURVEY
A-150

BHL: ST00
MD: 8497.00
TVD: 8496.26
From Surf Location:
41.985 N
52.767 W

2937' Sc.

D.C. TURNER SURVEY
A-658

GRID N

SPERRY DRILLING JOB NO. 909035053
DATE SURVEYED August 14, 2024
SURVEYED FROM 317' TO 8497'
TIE-ON COORDINATES FROM Surface
BHL AT 8565.00 FT. (MD) = 60.17 FT.
AT 222.90° * Grid
FROM SURFACE LOCATION NW
BHL ____ = TO NW LEASE LINE

1742' Sc.

BEAD FARM #3
Y=13,945,353.69'
X=3,456,312.03'
LAT.=30°00'42.40"
LONG.=-94°17'52.29"

H.T. & B. R.R. CO. SURVEY
A-149

T.& N.O. R.R. CO. SURVEY
A-142

Bead Farm Co.
Vol. 879, Pg. 564
D.R.J.C.T.

T.& N.O. R.R. CO. SURVEY
A-694

W.L. CLARK SURVEY
A-874

T.& N.O. R.R. CO. SURVEY
A-266

T.& N.O. R.R. CO. SURVEY
A-869

SHL	TRACT CALLS	SURVEY CALLS	ELEV.
BEAD FARM #3	2937' Sc. FNL 1742' Sc. FWL	2937' Sc. FNL 1742' Sc. FWL	23.0'

STATE OF TEXAS
REGISTERED
JIM G. GLASS
5262
PROFESSIONAL
LAND SURVEYOR

Location is approximately
10.8 miles SW of Beaumont, Tx.
"CHINA" Quadrangle

Driving Directions:
From the Intersection of I10 and Smith Road near Cheek, TX, go Northwest on Smith Road, .8 miles turn left (West) Kidd Road. Go 1.6 miles turn right (North) on Boyt Road. Go 1.1 miles stay straight (West) on Lawhon Rd. Go 2.8 miles turn right (North) on Green Pond Gully Road Go 0.8 miles. Turn Left (Northwest). Drive on location.

DATE SURVEYED: 8/23/2023-8/28/2023

Location is staked from tract lines as evidenced by occupation, information obtained from the Tx. R.R.C and provided deed records. Distances shown are not intended to be definitive in establishing actual title boundaries. The deed data and tract acreages shown hereon were furnished by others. This is not a title survey. Vesting documents may not have been provided. Bearings and distances are based on the Texas State Plane Coordinate System N.A.D. 83 (2011) (South Central Zone) derived from GPS Observations.

LEGEND
= TRACT LINE
= SURVEY LINE
= PROPOSED WELL

FOR THE EXCLUSIVE USE OF
EXXONMOBIL LOW CARBON SOLUTIONS

STATE OF TEXAS - - - COUNTY OF SMITH
I, Jim G. Glass, Registered Professional Land Surveyor, do hereby certify the above plat to be true and correct to the best of my knowledge.
Date: April 9, 2024 Bullard, Texas
E.L.S. Surveying & Mapping, Inc.

Registered Professional Land Surveyor No. 5262

Drafter: ECJ FB 2744/88-97 Job No. 430923 Map No. J-0923-LOC-INJ3C

CONFIDENTIAL BUSINESS INFORMATION

CHRISTI CRADDICK, CHAIRMAN
WAYNE CHRISTIAN, COMMISSIONER
JIM WRIGHT, COMMISSIONER

DANNY SORRELLS
DIRECTOR, OIL AND GAS DIVISION
PETER FISHER, P.G.
DISTRICT DIRECTOR

RAILROAD COMMISSION OF TEXAS

OIL AND GAS DIVISION

OPERATOR Name:	EXXONMOBIL LOW C SOL ON	**RE:**	**Lease:**	Bead Farm Co.
Address1:	ATTN EDWARD E GRAHAM W1.2B.02			
Address2:	22777 SPRINGWOODS VILLAGE PKWY	**Well No:**	3	
City:	SPRING	**Sec:**	8	**Block:**
State:	TX	**County:**	JEFFERSON	
		Survey Name:	HT&B RR CO/TURNER, D C	

SWR13EX Application Number: 130364 **Drilling Permit No:**

SWR 13 CASING EXCEPTION APPLICATION/ALTERNATIVE REQUEST APPROVED

The Proposed Casing and Cementing Program submitted for **LEASE** Bead Farm Co. ;
WELL 3 has been approved by the Railroad Commission of Texas District Office.

a. A copy of this approved letter must be kept on location during all phases of drilling and/or plugging operations. Once approved, changes CANNOT be made to the Proposed Casing Program on the original application without additional approval from the Railroad Commission of Texas District Office.

b. Any substantive modifications to the cement program require prior approval from the Railroad Commission of Texas District Office, and may require re-submission of the SWR 13 (Statewide Rule 13) Alternate Surface Casing Application. Contact the Railroad Commission of Texas District Office for more information.

c. The tail slurry must be sufficient to fill the Zone of Critical Cement as described in Statewide Rule 13(b)(1)(H)(i). In addition, all cement slurries must be mixed on location as described in Application for Alternate Surface Casing Program.

d. The casing and cement program shall adhere to the following specifications:

Set 2170 feet of surface casing and circulate cement from the shoe to the ground surface.

DP 898450 - Exxonmobil, Bead Farm Co. Lease Well 3 (245 32912)

IF CEMENT IS NOT CIRCULATED TO THE GROUND SURFACE AS REQUIRED BY THIS EXCEPTION, YOU MUST CONTACT THE RAILROAD COMMISSION OF TEXAS DISTRICT OFFICE IMMEDIATELY AND FOLLOW THE PROCEDURES SET OUT IN RULE 13(b)(1)(H)(iii) OR AS REQUIRED BY THE RAILROAD COMMISSION OF TEXAS DISTRICT OFFICE.

You must comply with all other provisions of SWR 13 (Statewide Rule 13) and a representative of the cementing company who performs the cementing job for the protection of usable quality water strata must sign the Form W-15 attesting to the information regarding cementing operations performed; including circulation of cement. (Note: If surface casing is set below the approved depth, this can result in denial of future Statewide Rule 13(b)(1)(H)(i) requests.) A condition of the approved drilling permit requires notification to the Railroad Commission of Texas District Office eight (8) hours prior to the time casing is to be set/cemented in the well. If your exception request was submitted after the subject well has been drilled and completed, the operator may be referred for enforcement action.

This authorization shall expire within five (5) years from the date the Groundwater Protection Determination was issued, or at the expiration of the drilling permit (if the well is not spudded prior to expiration) for the referenced well, whichever occurs first. Furthermore, this authorization supersedes any prior authorizations issued for the referenced well.

This exception is based on information provided when the application was submitted 05/20/2024 .
If any information has changed, you must contact the appropriate Railroad Commission of Texas District Office, and submit a new application if applicable. If you have questions, please contact the appropriate Oil and Gas District office.

RRC APPROVAL BY: AUDREY KUKLENZ DATE: 05/20/2024

PETER FISHER, P.G.

DISTRICT DIRECTOR

CONFIDENTIAL BUSINESS INFORMATION

4224532908 Bead Farm Co. #1 (Stratigraphic Well and Above-Zone Monitoring Well)

CONFIDENTIAL BUSINESS INFORMATION

API No. 42-245-32908

Drilling Permit # 891726

SWR Exception Case/Docket No.

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

APPLICATION FOR PERMIT TO DRILL, RECOMPLETE, OR RE-ENTER

This facsimile W-1 was generated electronically from data submitted to the RRC.
A certification of the automated data is available in the RRC's Austin office.

FORM W-1 07/2004

Permit Status: Approved

1. RRC Operator No.: 101256

2. Operator's Name (as shown on form P-5, Organization Report): EXXONMOBIL LOW C SOL ON STOR LLC

3. Operator Address (include street, city, state, zip): ATTN EDWARD E GRAHAM W1.2B.02, 22777 SPRINGWOODS VILLAGE PKWY, SPRING, TX 77389

4. Lease Name: BEAD FARM CO.

5. Well No.: 1

GENERAL INFORMATION

6. Purpose of filing (mark ALL appropriate boxes): [X] New Drill [ ] Recompletion [ ] Reclass [ ] Field Transfer [ ] Re-Enter [ ] Amended [ ] Amended as Drilled (BHL) (Also File Form W-1D)

7. Wellbore Profile (mark ALL appropriate boxes): [X] Vertical [ ] Horizontal (Also File Form W-1H) [ ] Directional (Also File Form W-1D) [ ] Sidetrack

8. Total Depth: 8700

9. Do you have the right to develop the minerals under any right-of-way ? [X] Yes [ ] No

10. Is this well subject to Statewide Rule 36 (hydrogen sulfide area)? [ ] Yes [X] No

SURFACE LOCATION AND ACREAGE INFORMATION

11. RRC District No.: 03

12. County: JEFFERSON

13. Surface Location [X] Land [ ] Bay/Estuary [ ] Inland Waterway [ ] Offshore

14. This well is to be located 18 miles in a E direction from Cleveland which is the nearest town in the county of the well site.

15. Section: 41

16. Block:

17. Survey: T&NO RR CO

18. Abstract No.: A-266

19. Distance to nearest lease line: ft.

20. Number of contiguous acres in lease, pooled unit, or unitized tract: 642.2

21. Lease Perpendiculars: 1475 ft from the N line and 1817 ft from the W line.

22. Survey Perpendiculars: 1475 ft from the N line and 1817 ft from the W line.

23. Is this a pooled unit? [ ] Yes [X] No

24. Unitization Docket No:

25. Are you applying for Substandard Acreage Field? [ ] Yes (attach Form W-1A) [X] No

FIELD INFORMATION — List all fields of anticipated completion including Wildcat. List one zone per line.

26. RRC District No.	27. Field No.	28. Field Name (exactly as shown in RRC records)	29. Well Type	30. Completion Depth	31. Distance to Nearest Well in this Reservoir	32. Number of Wells on this lease in this Reservoir
03	00006001	WILDCAT	Exploratory Test Well	8495	0.00	1

BOTTOMHOLE LOCATION INFORMATION is required for DIRECTIONAL, HORIZONTAL, AND AMENDED AS DRILLED PERMIT APPLICATIONS

Remarks

See W1 Comments attached

Certificate:

I certify that information stated in this application is true and complete, to the best of my knowledge.

Leslie Sincler — Name of filer

Jun 28, 2023 — Date submitted

(832)654-3475 — Phone

leslie@exxonmobil.com — E-mail Address (OPTIONAL)

RRC Use Only Data Validation Time Stamp: Aug 18, 2023 6:27 PM('As Approved' Version)

CONFIDENTIAL BUSINESS INFORMATION

Permit Status: Approved

The RRC has not approved this application. Duplication or distribution of information is at the user's own risk.

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

APPLICATION FOR PERMIT TO DRILL, RECOMPLETE, OR RE-ENTER

This facsimile W-1 was generated electronically from data submitted to the RRC.
A certification of the automated data is available in the RRC's Austin office.

W-1 Comments

Permit # 891726

Approved Date: Aug 18, 2023

[FILER Jun 28, 2023 2:17 PM]: Proposed well is an exploratory test well. Well completions tests are planned to include up to an estimated 21,000 bbls of salt and water solution. Tests will be completed at three intervals over the course of up to an estimated three weeks.; [RRC STAFF Jun 29, 2023 5:43 PM]: W-1 coordinates changed to match plat.; [RRC STAFF Jun 30, 2023 4:13 PM]: There have been problems identified with this permit (see problem letter attachment). Notification sent.; [RRC STAFF Jun 30, 2023 4:14 PM]: W-1 is being held until it is determined if Financial Assurance is needed for carbon capture.; [RRC STAFF Jul 6, 2023 10:40 AM]: There have been problems identified with this permit (see problem letter attachment). Notification sent.; [RRC STAFF Aug 17, 2023 2:09 PM]: Financial Assurance has been submitted and is currently being processed. The status is currently Pending, when it updates to Approved, the W-1 can be approved.; [RRC STAFF Aug 18, 2023 6:26 PM]: Financial Assurance has been updated to approved.; [RRC STAFF Aug 18, 2023 6:26 PM]: Problems identified with this permit are resolved.

CONFIDENTIAL BUSINESS INFORMATION

GROUNDWATER PROTECTION DETERMINATION

Form GW-2

Groundwater Advisory Unit

Date Issued:	19 June 2023	**GAU Number:**	368887

Attention:	EXXONMOBIL LOW C SOL ON ATTN EDWARD E GRAHAM SPRING, TX 77389	**API Number:**	
		County:	JEFFERSON
		Lease Name:	BEAD FARM CO
		Lease Number:	
Operator No.:	101256	**Well Number:**	1
		Total Vertical	8500
		Latitude:	29.999222
		Longitude:	-94.297364
		Datum:	NAD27

Purpose: New Production Well

Location: Survey-T&NO RR CO; Abstract-266; Section-41

To protect usable-quality groundwater at this location, the Groundwater Advisory Unit of the Railroad Commission of Texas recommends:

Usable-quality water occurs from the land surface to a depth of 1100 feet. Moreover, the interval from the land surface to a depth of 700 feet contains water of superior quality which must be isolated from water in underlying beds.

Also, isolation to prevent migration must be effected at a depth of 600 feet.

This recommendation is applicable for all wells drilled in this Lease.

Please send a shallow GR/SP/RES log of this well when it is available.

Note: Unless stated otherwise, this recommendation is intended to apply to all wells drilled within 200 feet of the subject well. Unless stated otherwise, this recommendation is for normal drilling, production, and plugging operations only.

This determination is based on information provided when the application was submitted on 06/15/2023. If the location information has changed, you must contact the Groundwater Advisory Unit, and submit a new application if necessary. If you have questions, please contact us at 512-463-2741 or gau@rrc.texas.gov.

Groundwater Advisory Unit, Oil and Gas Division

CONFIDENTIAL BUSINESS INFORMATION

Railroad Commission of Texas

PERMIT TO DRILL, RE-COMPLETE, OR RE-ENTER ON REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

CONDITIONS AND INSTRUCTIONS

Permit Invalidation. It is the operator's responsibility to make sure that the permitted location complies with Commission density and spacing rules in effect on the spud date. The permit becomes invalid automatically if, because of a field rule change or the drilling of another well, the stated location is not in compliance with Commission field rules on the spud date. If this occurs, application for an exception to Statewide Rules 37 and 38 must be made and a special permit granted prior to spudding. Failure to do so may result in an allowable not being assigned and/or enforcement procedures being initiated.

Notice Requirements. Per H.B 630, signed May 8, 2007, the operator is required to provide notice to the surface owner no later than the 15th business day after the Commission issues a permit to drill. Please refer to subchapter Q Sec. 91.751-91.755 of the Texas Natural Resources Code for applicability.

Permit expiration. This permit expires two (2) years from the date of issuance shown on the original permit. The permit period will not be extended.

Drilling Permit Number. The drilling permit number shown on the permit MUST be given as a reference with any notification to the district (see below), correspondence, or application concerning this permit.

Rule 37 Exception Permits. This Statewide Rule 37 exception permit is granted under either provision Rule 37 (h)(2)(A) or 37(h)(2)(B). Be advised that a permit granted under Rule 37(h)(2)(A), notice of application, is subject to the General Rules of Practice and Procedures and if a protest is received under Section 1.3, "Filing of Documents," and/or Section 1.4, "Computation of Time," the permit may be deemed invalid.

Before Drilling

Fresh Water Sand Protection. The operator must set and cement sufficient surface casing to protect all usable-quality water, as defined by the Railroad Commission of Texas (RRC) Groundwater Advisory Unit (GWAU). Before drilling a well, the operator must obtain a letter from the Railroad Commission of Texas stating the depth to which water needs protection, Write: Railroad Commission of Texas, Groundwater Advisory Unit (GWAU), P.O. Box 12967, Austin, TX 78711-3087. File a copy of the letter with the appropriate district office.

Accessing the Well Site. If an OPERATOR, well equipment TRANSPORTER or WELL service provider must access the well site from a roadway on the state highway system (Interstate, U.S. Highway, State Highway, Farm-to-Market Road, Ranch-to-Market Road, etc.), an access permit is required from TxDOT. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

Water Transport to Well Site. If an operator intends to transport water to the well site through a temporary pipeline laid above ground on the state's right-of-way, an additional TxDOT permit is required. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

***NOTIFICATION**

The operator is **REQUIRED** to notify the district office when setting surface casing, intermediate casing, and production casing, or when plugging a dry hole. The district office **MUST** also be notified if the operator intends to re-enter a plugged well or re-complete a well into a different regulatory field. Time requirements are given below. The drilling permit number **MUST** be given with such notifications.

During Drilling

Permit at Drilling Site. A copy of the Form W-1 Drilling Permit Application, the location plat, a copy of Statewide Rule 13 alternate surface casing setting depth approval from the district office, if applicable, and this drilling permit must be kept at the permitted well site throughout drilling operations.

***Notification of Setting Casing.** The operator MUST call in notification to the appropriate district office (phone number shown the on permit) a minimum of eight (8) hours prior to the setting of surface casing, intermediate casing, AND production casing. The individual giving notification MUST be able to advise the district office of the drilling permit number.

***Notification of Re-completion/Re-entry.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of eight (8) hours prior to the initiation of drilling or re-completion operations. The individual giving notification MUST be able to advise the district office of the drilling permit number.

Completion and Plugging Reports

Hydraulic Fracture Stimulation using Diesel Fuel: Most operators in Texas do not use diesel fuel in hydraulic fracturing fluids. Section 322 of the Energy Policy Act of 2005 amended the Underground Injection Control (UIC) portion of the federal Safe Drinking Water Act (42 USC 300h(d)) to define "underground Injection" to *EXCLUDE* " ...the underground injection of fluids or propping agents (*other than diesel fuels*) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities." (italic and underlining added.) Therefore, hydraulic fracturing may be subject to regulation under the federal UIC regulations if diesel fuel is injected or used as a propping agent. EPA defined "diesel fuel" using the following five (5) Chemical Abstract Service numbers: 68334-30-5 Primary Name: Fuels, diesel; 68476-34-6 Primary Name: Fuels, diesel, No. 2; 68476-30-2 Primary Name: Fuel oil No. 2; 68476-31-3 Primary Name: Fuel oil, No. 4; and 8008-20-6 Primary Name: Kerosene. As a result, an injection well permit would be required before performing hydraulic fracture stimulation using diesel fuel as defined by EPA on any well in Texas. Hydraulic fracture stimulation using diesel fuel as defined by EPA on a well in Texas without an injection well permit could result in enforcement action.

Producing Well. Statewide Rule 16 states that the operator of a well shall file with the Commission the appropriate completion report within ninety (90) days after completion of the well or within one hundred and fifty (150) days after the date on which the drilling operation is completed, whichever is earlier. Completion of the well in a field authorized by this permit voids the permit for all other fields included in the permit unless the operator indicates on the initial completion report that the well is to be a dual or multiple completion and promptly submits an application for multiple completion. All zones are required to be completed before the expiration date on the existing permit. Statewide Rule 40(d) requires that upon successful completion of a well in the same reservoir as any other well previously assigned the same acreage, proration plats and P-15s or P-16s (if required) or a lease plat and P-16 must be submitted with no double assignment of acreage unless authorized by rule.

Dry or Noncommercial Hole. Statewide Rule 14(b)(2) prohibits suspension of operations on each dry or non-commercial well without plugging unless the hole is cased and the casing is cemented in compliance with Commission rules. If properly cased, Statewide Rule 14(b)(2) requires that plugging operations must begin within a period of one (1) year after drilling or operations have ceased. Plugging operations must proceed with due diligence until completed. An extension to the one-year plugging requirement may be granted under the provisions stated in Statewide Rule 14(b)(2).

Intention to Plug. The operator must file a Form W-3A (Notice of Intention to Plug and Abandon) with the district office at least five (5) days prior to beginning plugging operations. If, however, a drilling rig is already at work on location and ready to begin plugging operations, the district director or the director's delegate may waive this requirement upon request, and verbally approve the proposed plugging procedures.

***Notification of Plugging a Dry Hole.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of four (4) hours prior to beginning plugging operations. The individual giving the notification MUST be able to advise the district office of the drilling permit number and all water protection depths for that location as stated in the Groundwater Advisory Unit letter.

DIRECT INQUIRIES TO: DRILLING PERMIT SECTION, OIL AND GAS DIVISION

PHONE
(512) 463-6751

MAIL:
PO Box 12967
Austin, Texas, 78711-2967

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER	DATE PERMIT ISSUED OR AMENDED	DISTRICT
891726	Aug 18, 2023	* 03
API NUMBER	**FORM W-1 RECEIVED**	**COUNTY**
42-245-32908	Jun 28, 2023	JEFFERSON
TYPE OF OPERATION	**WELLBORE PROFILE(S)**	**ACRES**
NEW DRILL	Vertical	642.2

OPERATOR 101256

EXXONMOBIL LOW C SOL ON STOR LLC

ATTN EDWARD E GRAHAM W1.2B.02
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389

NOTICE
This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored.
District Office Telephone No:
(713) 869-5001

LEASE NAME	WELL NUMBER
BEAD FARM CO.	1
LOCATION	**TOTAL DEPTH**
18 miles E direction from CLEVELAND	8700

Section, Block and/or Survey

SECTION 41 BLOCK ABSTRACT 266

SURVEY T&NO RR CO

DISTANCE TO SURVEY LINES	DISTANCE TO NEAREST LEASE LINE
1475 ft. N 1817 ft. W	ft.
DISTANCE TO LEASE LINES	**DISTANCE TO NEAREST WELL ON LEASE**
1475 ft. N 1817 ft. W	See FIELD(s) Below

FIELD(s) and LIMITATIONS:

* SEE FIELD DISTRICT FOR REPORTING PURPOSES *

FIELD NAME / LEASE NAME	ACRES / NEAREST LEASE	DEPTH	WELL # / NEAREST WE	DIST
WILDCAT	642.20	8,495	1	03
BEAD FARM CO.			0	

RESTRICTIONS: For exploratory test only

THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS

This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.

This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

SWR #13 Formation Data

JEFFERSON (245) County

Formation	Remarks	Geological Order	Effective Date
LAFAYETTE	disposal	1	12/17/2013
CAPROCK	disposal	2	12/17/2013
SPINDLETOP SALT DOME	disposal	3	12/17/2013
FANNETT SALT DOME	disposal	4	12/17/2013
BIG HILL SALT DOME	disposal	5	12/17/2013
PLEISTOCENE-LISSIE	disposal	6	12/17/2013
MIOCENE	disposal	7	12/17/2013
FRIO	disposal	8	12/17/2013
MARINULINA	disposal	9	12/17/2013
HETEROSTEGINA	disposal	10	12/17/2013

The above list may not be all inclusive, and may also include formations that do not intersect all wellbores. The listing order of the Formation information reflects the general stratigraphic order and relative geologic age. This is a dynamic list subject to updates and revisions. It is the operator's responsibility to make sure that at the time of spudding the well the most current list is being referenced. Refer to the RRC website at the following address for the most recent information.
http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info

CONFIDENTIAL BUSINESS INFORMATION

Form W-1: Review

Status # 891726 **API #** 245-32908	**OP # 101256 - EXXONMOBIL LOW C SOL ON STOR LLC** Approved ,**Issued:** 08/18/2023 ,**Filed:** Online	**BEAD FARM CO. - Well # 1** 03 - JEFFERSON County	**New Drill** Vertical
Problems identified with this permit are (08/18/2023 06:26:52 PM)			

Status:

Back to Public Query Search Results

View Current W-1 | View Current Permit | View SWR 13 Formations

General / Location Information

Basic Information:

Filing Purpose	Welbore Profiles	Lease Name	Well #	SWR	Total Depth	Horizontal Wellbore	Stacked Lateral Parent Well DP #
New Drill	Vertical	BEAD FARM CO.	1		8700		

Surface Location Information:

API #	Distance from Nearest Town	Direction from Nearest Town	Nearest Town	Surface Location Type
245-32908	18.0 miles	E	Cleveland	Land

GPS Coordinates - Datum: NAD 27
Latitude: 29.999222 **Longitude:** -94.297363

Survey/Legal Location Information:

Section	Block	Survey	Abstract #	County
41		T&NO RR CO	266	JEFFERSON

Township	League	Labor	Porcion	Share	Tract	Lot

Perpendicular surface location from two nearest designated reference lines:

Perpendiculars	Distance	Direction	Distance	Direction
Survey Lines	1475.0 feet	from the N line and	1817.0 feet	from the W line

Permit Restrictions:

Code	Description
29	This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.

Fields

District	Field Name	Field #	Completion Depth	Lease Name	Well #	Well Type	Acres	Distance to Nearest Well	Distance to Nearest Lease Line from Surface Location	SWR	Pooled/ Unitized
03	**WILDCAT** **Primary Field**	00006001	8495	BEAD FARM CO.	1	Exploratory Test Well	642.2		1475.0		N

Perpendiculars	Distance	Direction	Distance	Direction
Surface Lease Lines	1475.0 feet	from the N line and	1817.0 feet	from the W line

Field Restrictions:

Code	Description
05	For exploratory test only

Comments

Remark	Date Entered	Entered By
Proposed well is an exploratory test well. Well completions tests are planned to include up to an estimated 21,000 bbls of salt and water solution. Tests will be completed at three intervals over the course of up to an estimated three weeks.	06/28/2023 02:17:14 PM	FILER
W-1 coordinates changed to match plat.	06/29/2023 05:43:39 PM	RRC STAFF
There have been problems identified with this permit (see problem letter attachment). Notification sent.	06/30/2023 04:13:51 PM	RRC STAFF
W-1 is being held until it is determined if Financial Assurance is needed for carbon capture.	06/30/2023 04:14:30 PM	RRC STAFF
There have been problems identified with this permit (see problem letter attachment). Notification sent.	07/06/2023 10:40:00 AM	RRC STAFF
Financial Assurance has been submitted and is currently being processed. The status is currently Pending, when it updates to Approved, the W-1 can be approved.	08/17/2023 02:09:11 PM	RRC STAFF

CONFIDENTIAL BUSINESS INFORMATION

Financial Assurance has been updated to approved.	08/18/2023 06:26:41 PM	RRC STAFF
Problems identified with this permit are resolved.	08/18/2023 06:26:52 PM	RRC STAFF

Attachments

Attachment Type	File Path	Associated Fields and/or Plats
As Approved W-1	AsApprovedW1-8-18-2023.pdf	
As Approved Permit	AsApprovedPermit-8-18-2023.pdf	
As Submitted W-1	AsSubmittedW1-6-28-2023.pdf	
Other	GW2 - 368887.pdf	
PLAT #1(**Paper Size : LGL**)	LO_TX245_BEAD_FARM_CO_1_S (1).pdf	WILDCAT
Permit Problem Letter	problem_letter_7-6-2023.pdf	

CONFIDENTIAL BUSINESS INFORMATION

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
481 WINSCOTT ROAD, Ste. 200 • BENBROOK, TEXAS 76126
TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
TEXAS FIRM REGISTRATION NO. 10042504
WWW.TOPOGRAPHIC.COM

JEFFERSON COUNTY, TEXAS

SECTION 41, T. & N.O.R.R. CO. SURVEY, A-266

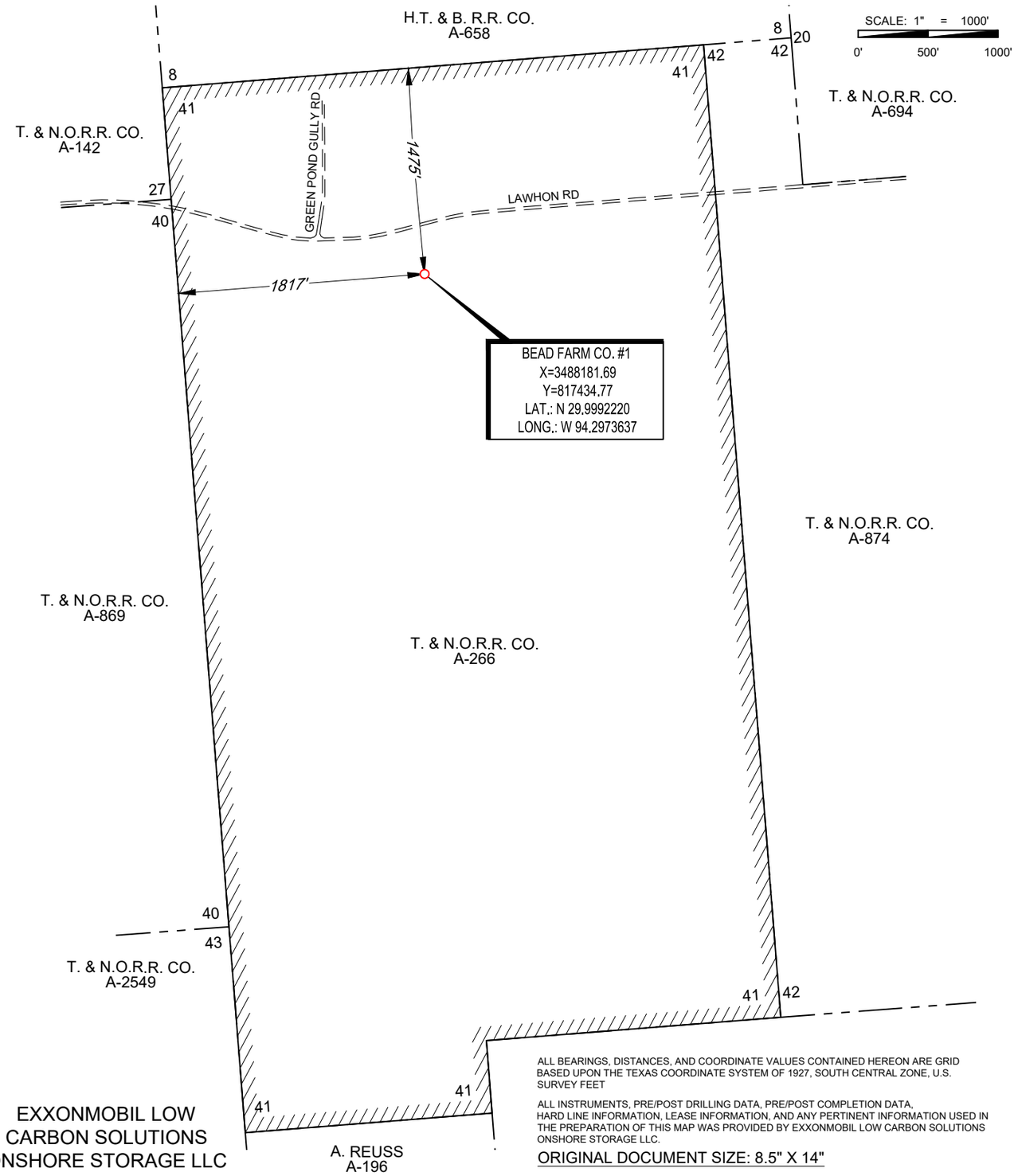
LEGEND

- UNIT/LEASE BOUNDARY
- SECTION LINE
- ROAD
- PROPOSED WELL

UNIT/LEASE		SURVEY
S.H.L.	1817' FWL 1475' FNL	T. & N.O.R.R. CO., A-266 1817' FWL & 1475' FNL

N

SCALE: 1" = 1000'
0' 500' 1000'



EXXONMOBIL LOW CARBON SOLUTIONS ONSHORE STORAGE LLC

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE TEXAS COORDINATE SYSTEM OF 1927, SOUTH CENTRAL ZONE, U.S. SURVEY FEET

ALL INSTRUMENTS, PRE/POST DRILLING DATA, PRE/POST COMPLETION DATA, HARD LINE INFORMATION, LEASE INFORMATION, AND ANY PERTINENT INFORMATION USED IN THE PREPARATION OF THIS MAP WAS PROVIDED BY EXXONMOBIL LOW CARBON SOLUTIONS ONSHORE STORAGE LLC.

ORIGINAL DOCUMENT SIZE: 8.5" X 14"

LEASE NAME & WELL NO.: BEAD FARM CO. #1 LEASE ACREAGE: CALLED 642.2 DATE OF SURVEY: APRIL 21, 2023

LOCATED: ±12 MILES SOUTHWEST OF BEAUMONT, TX GROUND ELEVATION: 23'

BEST ACCESSIBILITY TO LOCATION: ±0.02 MILES TO A POINT ±225 FEET NORTHWEST FROM LOCATION

DISTANCE & DIRECTION
FROM HWY JCT. OR TOWN: FROM THE INTERSECTION OF LAWHON RD AND GREEN POND GULLY RD, HEAD EAST

ON LAWHON RD 650 FEET, TURNING SOUTH, HEAD 350 FEET TO SURFACE LOCATION

STATE OF TEXAS
REGISTERED
JEFFREY N. LUEDERS
6512
PROFESSIONAL
LAND SURVEYOR

CERTIFICATION:

I, JEFFREY N. LUEDERS, A REGISTERED PROFESSIONAL LAND SURVEYOR, AND AN AUTHORIZED AGENT OF TOPOGRAPHIC LAND SURVEYORS, DO HEREBY CERTIFY THAT THE ABOVE DESCRIBED "PRE-CONSTRUCTION" PROPOSED WELL LOCATION WAS SURVEYED AND STAKED ON THE GROUND AS SHOWN HEREIN.

FILE NAME LO_TX245_BEAD_FARM_CO_1
DRH

DATE CERTIFIED: 05/16/2023 TEXAS REG. NO. 6512

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

Form W-2

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

Status: Approved
Date: 05/10/2024
Tracking No.: 307853

OIL WELL POTENTIAL TEST, COMPLETION OR RECOMPLETION REPORT,

OPERATOR INFORMATION

Operator EXXONMOBIL LOW C SOL ON STOR LLC **Operator** 101256
Operator ATTN EDWARD E GRAHAM 22777 SPRINGWOODS VILLAGE PKWY SPRING, TX 77389-

WELL INFORMATION

API 42-245-32908 **County:** JEFFERSON
Well No.: 1 **RRC District** 03
Lease BEAD FARM CO. **Field** WILDCAT
RRC Lease 28125 **Field No.:** 00006001
Location Section: 41, Block: , Survey: T&NO RR CO, Abstract: 266

Latitude 29.999222 **Longitud** -94.297363
This well is 18 **miles in a** E
direction from CLEVELAND,
which is the nearest town in the

FILING INFORMATION

Purpose of Well Record Only
Type of New Well
Well Type: Shut-In Producer **Completion or Recompletion** 12/03/2023

Type of Permit	Date	Permit No.
Permit to Drill, Plug Back, or	08/18/2023	891726
Rule 37 Exception		
Fluid Injection		
O&G Waste Disposal		
Other:		

COMPLETION INFORMATION

Spud 10/15/2023 **Date of first production after rig** 12/03/2023
Date plug back, deepening, drilling operation 10/15/2023 **Date plug back, deepening, recompletion, drilling operation** 12/03/2023
Number of producing wells on this lease this field (reservoir) including this 0 **Distance to nearest well in lease & reservoir** 0.0
Total number of acres in 642.20 **Elevation** 23 GL
Total depth TVD 8664 **Total depth MD**
Plug back depth TVD 4087 **Plug back depth MD**
Was directional survey made other inclination (Form W- No **Rotation time within surface casing Is Cementing Affidavit (Form W-15)** 94.0 Yes
Recompletion or No **Multiple** No
Type(s) of electric or other log(s) Gamma Ray (MWD)
Electric Log Other Description:
Location of well, relative to nearest lease of lease on which this well is 1475.0 **Feet from the** North **Line and** 1817.0 **Feet from the** West **Line of the** BEAD FARM CO. **Lease.** **Off Lease :** No

FORMER FIELD (WITH RESERVOIR) & GAS ID OR OIL LEASE NO.

Field & Reservoir	Gas ID or Oil Lease	Well No.	Prior Service Type

PACKET: N/A

W2: N/A

FOR NEW DRILL OR RE-ENTRY, SURFACE CASING DEPTH DETERMINED BY:

GAU Groundwater Protection Determination		**Depth**	1100.0	**Date**	06/19/2023
SWR 13 Exception		**Depth**	2200.0		

INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION

Date of		**Production**	
Number of hours	24	**Choke**	
Was swab used during this	No	**Oil produced prior to**	

PRODUCTION DURING TEST PERIOD:

Oil		**Gas**	
Gas - Oil	0	**Flowing Tubing**	
Water			

CALCULATED 24-HOUR RATE

Oil		**Gas**	
Oil Gravity - API - 60.:		**Casing**	
Water			

CASING RECORD

Ro	Type of Casing	Casing Size (in.)	Hole Size	Setting Depth	Multi - Stage Tool	Multi - Stage Shoe	Cement Class	Cement Amoun	Slurry Volume (cu.	Top of Cement (ft.)	TOC Determined By
2	Surface	13 3/8	17 1/2	2175			H	1470	3037.0	0	Circulated to Surface
3	Conductor	20	26	120			A	185	220.0	0	Circulated to Surface
4	Conventional Production	9 5/8	12 1/4	8656			H	1855	2893.0	353	Calculation

LINER RECORD

Ro	Liner Size	Hole Size	Liner Top	Liner Bottom	Cement Class	Cement Amoun	Slurry Volume (cu.	Top of Cement (ft.)	TOC Determined

N/A

TUBING RECORD

Ro	Size (in.)	Depth Size (ft.)	Packer Depth (ft.)/Type
			/

N/A

PRODUCING/INJECTION/DISPOSAL INTERVAL

Ro	Open hole?	From (ft.)	To (ft.)
		L	

N/A

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC.

Was hydraulic fracturing treatment No

Is well equipped with a downhole sleeve? No

If yes, actuation pressure

Production casing test pressure (PSIG)

Actual maximum pressure (PSIG) during hydraulic fracturing

fracturin

Has the hydraulic fracturing fluid disclosure been No

Ro	Type of Operation	Amount and Kind of Material Used	Depth Interval (ft.)

1	Cast Iron Bridge Plug	CAST IRON BRIDGE PLUG PLUS 3.4 CU FT CEMENT CLASS H	6290	6299
2	Cast Iron Bridge Plug	CAST IRON BRIDGE PLUG PLUS 3.4 CU FT CEMENT CLASS H	4992	5001
3	Cast Iron Bridge Plug	CAST IRON BRIDGE PLUG PLUS 3.4 CU FT CEMENT CLASS H	4087	4096

FORMATION RECORD

Formations	Encountere	Depth TVD	Depth MD	Is formation	Remarks
LAFAYETTE - DISPOSAL	No			No	
CAPROCK - DISPOSAL	No			No	
SPINDLETOP SALT DOME - DISPOSAL	No			No	
FANNETT SALT DOME - DISPOSAL	No			No	
BIG HILL SALT DOME - DISPOSAL	No			No	
PLEISTOCENE-LISSIE - DISPOSAL	No			No	
MIOCENE - DISPOSAL	Yes	3522.0	3520.0	Yes	LOGGED
FRIO - DISPOSAL	Yes	6527.0	6523.0	Yes	LOGGED
MARINULINA - DISPOSAL	No			No	
HETEROSTEGINA - DISPOSAL	Yes	6274.0	6270.0	Yes	LOGGED

Do the producing interval of this well produce H2S with a concentration in excess of 100 ppm No

Is the completion being downhole commingled No

REMARKS

THE WELL WAS PERFORATED, TESTED, AND TEMPORARILY ABANDONED. THIS IS A TEST WELL AND HAS NOT PRODUCED.

RRC REMARKS

PUBLIC COMMENTS:

[RRC Staff 2024-02-23 08:49:28.617] EXPLORATORY WELL ONLY

CASING RECORD :

NONE.

TUBING RECORD:

A STRATIGRAPHIC WELL UTILIZED INJECTIVITY TEST VIA CASING.

PRODUCING/INJECTION/DISPOSAL INTERVAL :

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC. :

PERFORATED BETWEEN X AND X - ALL ISOLATED WITH PLUGS AND CEMENT.

POTENTIAL TEST DATA:

OPERATOR'S CERTIFICATION			
Printed	Josh Calkin	**Title:**	
Telephone	(281) 702-5537	**Date**	04/22/2024

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

Form W-15
Rev. 08/2014

CEMENTING REPORT

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name:	Operator P-5 No.:
Cementer Name: Halliburton	Cementer P-5 No.: 347151

WELL INFORMATION

District No.: 3	County: Jefferson
Well No.: 1	API No.: 42 - 245 - 32908 Drilling Permit No.: 891726
Lease Name: Bead Farm Company	Lease No.:
Field Name: Wildcat	Field No.:

I. CASING CEMENTING DATA

Type of casing: ☐ Conductor ☐ Surface ☐ Intermediate ☐ Liner ☒ Production

Drilled hole size (in.): 12-1/4"	Depth of drilled hole (ft.): 8,671 MD	Est. % wash-out or hole enlargement: 3%
Size of casing in O.D. (in.): 9-5/8"	Casing weight (lbs/ft) and grade: 53.5 L-80	No. of centralizers used: 52
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☑ NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 8,658 ft	Top of liner (ft.):
		Setting depth liner (ft.):
Hrs. waiting on cement before drill-out: N/A	Calculated top of cement (ft.): 305	Cementing date: 11/8/2023

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	1855	H	45 SCR100	2893	8366
2					
3					
Total	1855			2893	8,366

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth shoe (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth tool (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date	11/24/2023	11/27/2023	11/30/2023				
Size of hole or pipe (in.)	9.625"	9.625"	9.625"				
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)	n/a	n/a	n/a				
CIBP setting depth (ft.)	6299	5001	4096				
Amount of cement on top of CIBP (ft.)	8.25	8.25	8.25				
Sacks of cement used							
Slurry volume pumped (cu. ft.)	3.4	3.4	3.4				
Calculated top of plug (ft.)	6290.75	4992.75	4087.75				
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)	17	17	17				
Class/type of cement	H	H	H				
Perforate and squeeze (YES/NO)	No	No	No				

REMARKS

Patrick Hart

EXXON, BEAD FARM CO, #1, PRODUCTION

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

JEROD HACK, SERVICE SUPERVISOR	Halliburton		
Name and title of cementer's representative	Cementing Company	Signature	
4720 Industrial	Bossier City, LA 71112	903-986-5096	11/08/2023
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

Timothy L Greene	Well Operations Supv.	
Typed or printed name of operator's representative	Title	Signature

4763 Oak Knoll Ln.	Montgomery	TX 77316	281-732-1469	11/03/23
Address	City, State, Zip Code	Tel: Area Code	Number	Date: mo. day yr.

Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

A. **What to file:** An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on one form.

The Form W-15 should be filed with the Form W-3, Plugging Record, unless the Form W-3 is signed by the cementing company representative. When reporting dry holes, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.

B. **How to file:** An oil and gas completion report and Form W-15 may be filed online using the Commission's Online System (https://webapps.rrc.state.tx.us/security/login.do) or a paper copy of the form may be mailed to the Commission in Austin (P.O. Box 12967, Austin, Texas 78711-2967).

C. **Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.

To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 (http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.

D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing and Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

G. Slurry data: If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

CEMENTING REPORT

OPERATOR INFORMATION

Operator Name: XOM Low Carbon Solutions	Operator P-5 No.: 101256
Cementer Name: Halliburton	Cementer P-5 No.: 347151

WELL INFORMATION

District No.: 3	County: Jefferson		
Well No.: 1	API No.: 42-245-32908	Drilling Permit No.: 891726	
Lease Name: Bend Farm Company	Lease No.:		
Field Name: Wildcat	Field No.:		

I. CASING CEMENTING DATA

Type of casing: ☐ Conductor ☒ Surface ☐ Intermediate ☐ Liner ☐ Production

Drilled hole size (in.): 17-1/2"	Depth of drilled hole (ft.): 2,185	Est. % wash-out or hole enlargement: 27%	
Size of casing in O.D. (in.): 13-3/8"	Casing weight (lbs/ft) and grade: 54.5	No. of centralizers used: 18	
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☑ YES ☐ NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 2,175	Top of liner (ft.):	
		Setting depth liner (ft.):	
Hrs. waiting on cement before drill-out: 34	Calculated top of cement (ft.): 0	Cementing date: 10/18/2023	

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	1015	A	SEE REMARKS	2395	1359
2	455	H	SEE REMARKS	642	816
3					
Total	1470			3037	2175

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth shoe (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth tool (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS
SLURRY 1-ECONOCEM (TM) SLURRY 2-EXTENDACEM (TM)

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

ZACHARY HOWARD-SERVICE SUPERVISOR	Halliburton		
Name and title of cementer's representative	Cementing Company	Signature	
4720 Industrial	Bossier City, LA 71112	903-986-5096	10/18/2023
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

James A. Reavis	Drilling Eng.	
Typed or printed name of operator's representative	Title	Signature

22777 Springwood Village Pkwy	TX 77389	701-978-8939	4/3/2024
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

Wellness 3 Room 3A.591

Instructions for Form W-15, Cementing Report

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To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 (http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.

D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing and Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967
CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name:	~~Byrd Oilfield Services~~ XOM Low Carb Solutions	Operator P-5 No.:	101256
Cementer Name:	Cudd Pumping Services	Cementer P-5 No.:	191917

WELL INFORMATION

District No.:	3	County:	Jefferson
Well No.:	1	API No.:	42-245-32708 Drilling Permit No.: 791726
Lease Name:	Bead Farm Company	Lease No.:	
Field Name:	Wildcat	Field No.:	

I CASING CEMENTING DATA

Type of casing: [X] Conductor [ ] Surface [ ] Intermediate [ ] Liner [ ] Production

Drilled hole size (in.): 26	Depth of drilled hole (ft.): 120	Est. % wash-out or hole enlargement:	
Size of casing in O.D. (in.): 20	Casing weight (lbs/ft) and grade: 78.6 ppf X-52	No. of centralizers used:	
Was cement circulated to ground surface (or bottom of cellar) outside casing? [X] Yes [ ] No If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 120	Top of liner (ft.):	
		Setting depth liner (ft.):	
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.): 0	Cementing date: 9/11/2023	

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu.ft.)	Height (ft.)
1	185	A	1% SA001	220.0	145
2					
3					
Total	185			220.0	145

II CASING CEMENTING DATA

Type of casing: [ ] Surface [ ] Intermediate [ ] Production [ ] Tapered production [ ] Multi-stage cement shoe [ ] Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? [ ] Yes [ ] No		Setting depth tool (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu.ft.)	Height (ft.)
1					
2					
3					
Total					

III CASING CEMENTING DATA

Type of casing: [ ] Surface [ ] Intermediate [ ] Production [ ] Tapered production [ ] Multi-stage cement/DV tool [ ] Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? [ ] Yes [ ] No		Setting depth tool (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu.ft.)	Height (ft.)
1					
2					
3					
Total					

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

Artemio Rivera Service Supervisor	Cudd Pumping Services	
Name and title of cementer's representative	Cementing Company	Signature

1434 CR 422	Pleasanton	TX	78064	1830-254-4200	September 11, 2023
Address	City,	State,	Zip Code	Tel: Area Code Number	Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data

James Harvey	Operations Supt.	
Type or printed name of operator's representative	Title	Signature

				512 749 8222	9/11/23
Address	City,	State,	Zip Code	Tel: Area Code Number	Date: mo. day yr.

Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

A. **What to file:** An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on one form.
The Form W-15 should be filed with the Form W-3, Plugging Record, unless the Form W-3 is signed by the cementing company representative. When reporting dry holes, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.

B. **How to file:** An oil and gas completion report and Form W-15 may be filed online using the Commission's Online System (https://webapps.rrc.state.tx.us/security/login.do) or a paper copy of the form may be mailed to the Commission in Austin (P.O. Box 12967, Austin, Texas 78711-2967).

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To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 (http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.

D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing and Multi-stage cement shoe. The operator must report the multi-stage cement tool in II. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
Oil and Gas Division
Tracking No.: 307853

ELECTRIC LOG STATUS REPORT

This facsimile L-1 was generated electronically from data submitted to the RRC.

FORM L-1

Instructions

When to File Form L-1:
- with Forms G-1, W-2, and GT-1 for new and deepened gas, oil, and geothermal wells
- with Form W-3 for plugged dry holes
- when sending in a log which was held under a request for confidentiality and the period for confidentiality has not yet expired.

When is Form L-1 NOT required:
- with Forms W-2, G-1, and GT-1 filed for injection wells, disposal wells, water supply wells, service wells, re-test wells, re-classifications, and plugbacks of oil, gas or geothermal wells
- with Form W-3 for plugging of other than a dry hole

Where to File Form L-1:
- with the appropriate Commission district office

Filling out Form L-1:
- Section I and the signature section must be filled out for all wells
- complete only the appropriate part of Section II

Type of log required:
- any wireline survey run for the purpose of obtaining lithology, porosity, or resistivity information
- no more than one such log is required but it must be of the subject well
- if such log is NOT run on the subject well, do NOT substitute any other type of log; just select Section II, Part A below

SECTION I. IDENTIFICATION

Operator Name: EXXONMOBIL LOW C SOL ON STOR LLC	District No. 03	Completion Date: 12/03/2023
Field Name WILDCAT	Drilling Permit No. 891726	
Lease Name BEAD FARM CO.	Lease/ID No. 28125	Well No. 1
County JEFFERSON	API No. 42- 245-32908	

SECTION II. LOG STATUS (Complete either A or B)

☐ A. BASIC ELECTRIC LOG NOT RUN

☒ B. BASIC ELECTRIC LOG RUN. (Select one)

☒ 1. Confidentiality is requested and a copy of the header for each log that has been run on the well is attached.

☐ 2. Confidentiality already granted on basic electric log covering this interval (applicable to deepened wells only).

☐ 3. Basic electric log covering this interval already on file with Commission (applicable to deepened wells only).

☐ 4. Log attached to (select one):

☐ (a) Form L-1 (this form). If the company/lease name on log is different from that shown in Section I, please enter name on log here: _____

Check here if attached log is being submitted after being held confidential. ☐

☐ (b) Form P-7, Application for Discovery Allowable and New Field Designation.

☐ (c) Form W-4, Application for Multiple Completion:

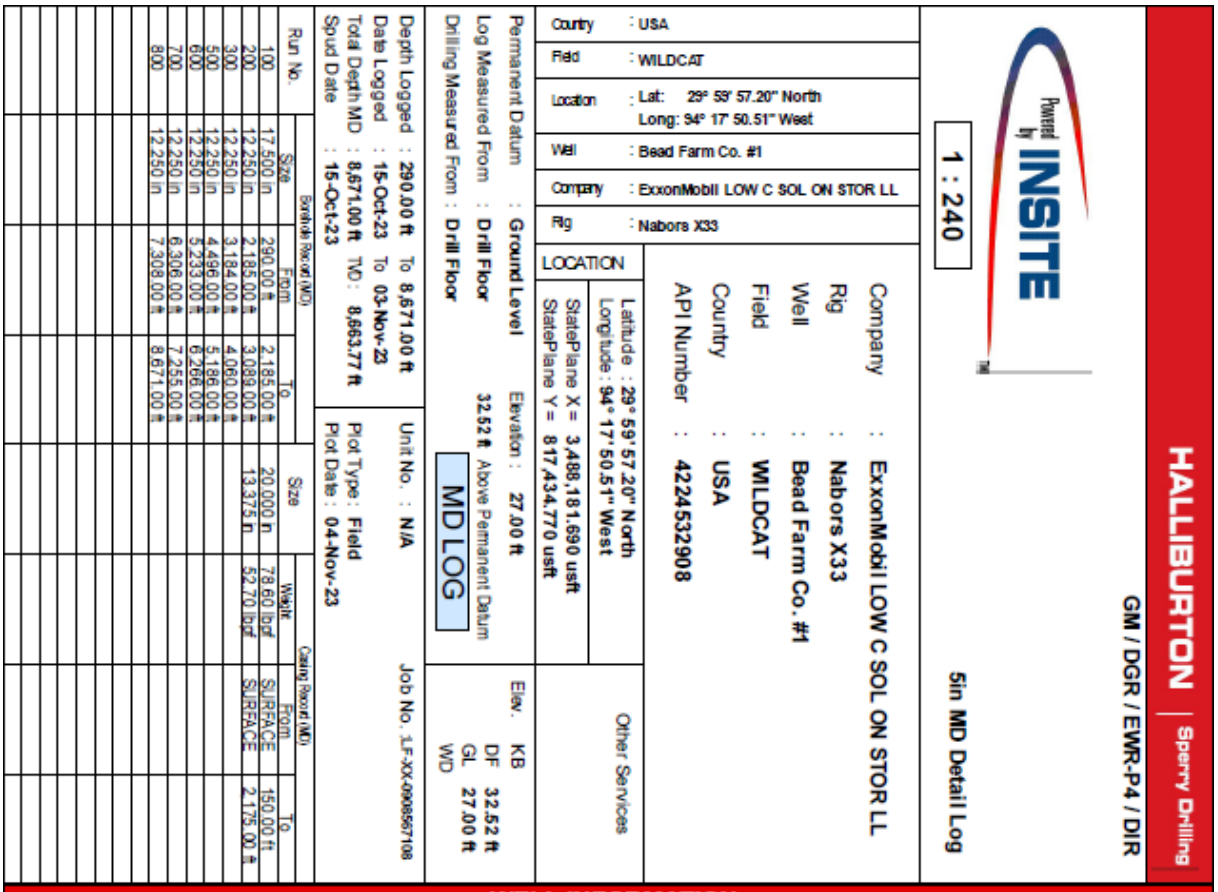
Lease or ID No(s). _____

Well No(s). _____

Josh Calkin Signature	Title
EXXONMOBIL LOW C SOL ON STOR LLC Name (print)	(281) 702-5537 Phone 02/08/2024 Date

-FOR RAILROAD COMMISSION USE ONLY-

CONFIDENTIAL BUSINESS INFORMATION



WELL INFORMATION

MWD Run Number	100	200	300	400	500
Date run completed	16-Oct-23	20-Oct-23	23-Oct-23	25-Oct-23	27-Oct-23
Rig Bit Number	100	200	300	400	500
Bit Size (in)	17.500	12.250	12.250	12.250	12.250
Tool Nominal OD (in)	8.000	8.000	8.000	8.000	8.000
Log Start Depth (MD, ft)	152.00	2,185.00	3,200.00	4,122.00	4,496.00
Log End Depth (MD, ft)	2,185.00	3,089.00	4,060.00	4,460.00	5,186.00
Drill or Wipe	Drill	Drill	Drill	Drill	Drill
Drill/Wipe Start Date and Time	15-Oct-23 09:45	20-Oct-23 06:40	23-Oct-23 02:15	24-Oct-23 22:21	26-Oct-23 16:09
Drill/Wipe End Date and Time	16-Oct-23 03:55	20-Oct-23 15:15	23-Oct-23 12:24	25-Oct-23 02:14	27-Oct-23 05:09
Min Inc (deg) @ Depth (MD, ft)	0.19 @385.00	2.41 @2,263.00	2.29 @3,868.00	1.37 @4,344.00	1.66 @4,527.00
Max Inc (deg) @ Depth (MD, ft)	2.24 @2,113.00	3.81 @3,015.00	4.09 @3,112.00	2.65 @4,056.00	2.54 @5,110.00
Bit TFA(in2) / Bit Type	0.91 / PDC	0.91 / PDC	0.91 / PDC	0.91 / PDC	0.91 / PDC
Flow Rate (gpm)	700.00	600.00	605.00	605.00	600.00
Max AV (fpm) / CV (fpm) @ MWD	80.0 / 85.6	175.0 / 172.0	175.0 / 180.0	195.3 / 0.0	171.3 / 180.0
Fluid Type	Native/Spud Mud	Mineral Oil Bas	Mineral Oil Bas	Mineral Oil Bas	Mineral Oil Bas
Density (ppg) / Viscosity (spqt)	9.00 / 33.00	9.10 / 48.00	10.00 / 72.00	10.50 / 67.00	10.50 / 59.00
Filtrate CL (ppm)	1,100.00	32,500.00	75,000.00	74,000.00	69,000.00
pH / API Filtrate (mptm)	8.00 / 14	N/A / 0	N/A / 0	N/A / 0	N/A / 0
PV (cP) / YP (lhf2)	10 / 5.00	9 / 7.00	23 / 17.00	23 / 18.00	21 / 24.00
% Solids / % Sand	4.9 / .01	7.2 / 0	9.3 / 0	10.5 / 0	11.8 / 0
% Oil / Oil:Water Ratio	0 / 0:100	74.73 / 75:25	53 / 60:40	52 / 60:40	54 / 64:36
Rm @ Measured Temp (degF)	0.100 @70.00	N/A@N/A	N/A@N/A	N/A@N/A	N/A@N/A
Rmf @ Measured Temp (degF)	0.10 @70.00	N/A@N/A	N/A@N/A	N/A@N/A	N/A@N/A
Rmc @ Measured Temp (degF)	0.100 @70.00	N/A@N/A	N/A@N/A	N/A@N/A	N/A@N/A
Max Tool Temp (degF) / Source	102.20 / TM	130.82 / HDM	137.88 / HDM	141.41 / HDM	152.00 / HDM
Rm @ Max Tool Temp (degF)	0.0705 @ 102.20	N/A @ 130.82	N/A @ 137.88	N/A @ 141.41	N/A @ 152.00
Lead MWD Engineer	Alex Killgore	Alex Killgore	Alex Killgore	Alex Killgore	Jason Anderson
Customer Representative	N/A	N/A	N/A	N/A	N/A

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON
4607 HWY 90 EAST • BROUSSARD, LA 70518
PHONE 337 837 3061 • FAX 337 837 4400

November 9, 2023

Railroad Commission of Texas
Oil and Gas Division
P.O. Box 12967
Capital Station
Austin, TX 78711

Re: EXXONMOBIL LOW C SOL ON STOR LLC
R.R.C. Operator No. 101256
BEAD FARM CO. 1
Permit No. 891726
Jefferson County, TX
API # 42-245-32908

Attention: Ms. Pam Johns

Enclosed, please find one copy of the survey performed on the above referenced well by Halliburton Energy Services, Inc. Operator #347-151.

Other information required by your office is as follows:

Name & Title of Surveyor	-	Coy Lorraine, M/LWD Service Quality
Drainhole Number	-	Original
Surveyed Depths	-	210' – 8598' MWD Surveys performed by Sperry Drilling
Dates Performed	-	October 15, 2023 to November 3, 2023
Type of Survey	-	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the listed e-mail address.

Respectfully,

Kristen
Log Analyst
Kristen.Killen@Halliburton.com
Halliburton / Sperry Drilling

Enclosures
RE: LA-MM 908567108

CONFIDENTIAL BUSINESS INFORMATION

ExxonMobil

Jefferson County, Tx
Rose Prospect CCS
Bead Farm Co. #1

001 ST00BP00

Design: 001 ST00BP00

Sperry Drilling Services

Geodetic Report

15 November, 2023

Well Coordinates: 817,434.77 N, 3,488,181.69 E (29° 59' 57.20" N, 094° 17' 50.51" W)
Ground Level: 27.00 usft

Local Coordinate Origin:	Centered on Well Bead Farm Co. #1
Viewing Datum:	(32.52') Nabors X-33 @ 59.52usft (Rig on Loc)
TVDs to System:	N
North Reference:	Grid
Unit System:	API US Survey Feet

Version: 5000.17 Build: 02

HALLIBURTON

Design Report for Bead Farm Co. #1 - 001 ST00BP00

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude (usft)	Geographic Coordinates Longitude (usft)	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	29° 59' 57.199 N	94° 17' 50.509 W	817,434.77	3,488,181.69
210.00	0.37	164.70	210.00	-0.65	0.18	29° 59' 57.193 N	94° 17' 50.508 W	817,434.12	3,488,181.87
303.00	0.22	187.45	303.00	-1.12	0.24	29° 59' 57.188 N	94° 17' 50.507 W	817,433.65	3,488,181.92
385.00	0.19	234.94	385.00	-1.35	0.10	29° 59' 57.186 N	94° 17' 50.509 W	817,433.42	3,488,181.79
576.00	0.29	216.67	576.00	-1.92	-0.44	29° 59' 57.180 N	94° 17' 50.515 W	817,432.85	3,488,181.24
757.00	0.56	181.75	756.99	-3.18	-0.75	29° 59' 57.168 N	94° 17' 50.519 W	817,431.59	3,488,180.94
854.00	0.34	176.13	853.99	-3.94	-0.74	29° 59' 57.161 N	94° 17' 50.520 W	817,430.83	3,488,180.95
945.00	0.82	187.51	944.98	-4.85	-0.81	29° 59' 57.152 N	94° 17' 50.521 W	817,429.92	3,488,180.88
1,133.00	0.74	222.83	1,132.97	-7.08	-1.81	29° 59' 57.130 N	94° 17' 50.533 W	817,427.69	3,488,179.88
1,326.00	0.83	215.12	1,325.95	-9.13	-3.46	29° 59' 57.110 N	94° 17' 50.553 W	817,425.64	3,488,178.23
1,512.00	0.59	246.91	1,511.93	-10.61	-5.12	29° 59' 57.096 N	94° 17' 50.572 W	817,424.16	3,488,176.57
1,705.00	0.67	215.11	1,704.92	-11.92	-6.68	29° 59' 57.084 N	94° 17' 50.591 W	817,422.85	3,488,175.01
1,888.00	1.47	212.95	1,887.89	-14.77	-8.57	29° 59' 57.057 N	94° 17' 50.613 W	817,420.00	3,488,173.12
2,083.00	1.95	211.16	2,082.80	-19.71	-11.65	29° 59' 57.009 N	94° 17' 50.651 W	817,415.06	3,488,170.04
2,113.00	2.24	206.92	2,112.78	-20.67	-12.18	29° 59' 57.000 N	94° 17' 50.657 W	817,414.10	3,488,169.51
2,263.00	2.41	205.91	2,262.66	-26.12	-14.88	29° 59' 56.947 N	94° 17' 50.690 W	817,408.65	3,488,166.81
2,360.00	2.56	206.53	2,359.57	-29.89	-16.74	29° 59' 56.910 N	94° 17' 50.713 W	817,404.88	3,488,164.95
2,457.00	2.68	206.96	2,456.47	-33.85	-18.74	29° 59' 56.872 N	94° 17' 50.738 W	817,400.92	3,488,162.95
2,553.00	2.83	208.18	2,552.36	-37.94	-20.87	29° 59' 56.832 N	94° 17' 50.764 W	817,396.83	3,488,160.81
2,649.00	3.06	209.03	2,648.23	-42.27	-23.24	29° 59' 56.790 N	94° 17' 50.793 W	817,392.50	3,488,158.45
2,828.00	3.68	211.90	2,826.92	-51.32	-28.59	29° 59' 56.703 N	94° 17' 50.858 W	817,383.45	3,488,153.10
2,922.00	3.78	213.09	2,920.72	-56.48	-31.88	29° 59' 56.653 N	94° 17' 50.897 W	817,378.29	3,488,149.81
3,015.00	3.81	212.63	3,013.51	-61.65	-35.22	29° 59' 56.603 N	94° 17' 50.938 W	817,373.12	3,488,146.47
3,112.00	4.09	213.44	3,110.28	-67.25	-38.86	29° 59' 56.549 N	94° 17' 50.982 W	817,367.52	3,488,142.83
3,206.00	3.90	216.01	3,204.06	-72.63	-42.59	29° 59' 56.498 N	94° 17' 51.026 W	817,362.14	3,488,139.10
3,302.00	3.43	220.91	3,299.86	-77.44	-46.39	29° 59' 56.452 N	94° 17' 51.072 W	817,357.33	3,488,135.30
3,396.00	3.08	227.55	3,393.71	-81.27	-50.09	29° 59' 56.415 N	94° 17' 51.116 W	817,353.50	3,488,131.60
3,493.00	2.63	238.21	3,490.59	-84.21	-53.91	29° 59' 56.388 N	94° 17' 51.160 W	817,350.56	3,488,127.78
3,681.00	3.03	236.09	3,678.36	-89.25	-61.70	29° 59' 56.341 N	94° 17' 51.251 W	817,345.52	3,488,119.99
3,773.00	3.07	236.39	3,770.23	-91.97	-65.77	29° 59' 56.316 N	94° 17' 51.299 W	817,342.80	3,488,115.92
3,868.00	2.29	245.55	3,865.12	-94.16	-69.61	29° 59' 56.295 N	94° 17' 51.343 W	817,340.61	3,488,112.08
3,961.00	2.48	247.19	3,958.04	-95.71	-73.16	29° 59' 56.282 N	94° 17' 51.384 W	817,339.06	3,488,108.53
3,987.00	2.58	248.05	3,984.02	-96.15	-74.22	29° 59' 56.278 N	94° 17' 51.397 W	817,338.62	3,488,107.47
4,056.00	2.65	247.41	4,052.95	-97.34	-77.13	29° 59' 56.267 N	94° 17' 51.430 W	817,337.43	3,488,104.56
4,152.00	2.07	251.51	4,148.86	-98.75	-80.83	29° 59' 56.255 N	94° 17' 51.473 W	817,336.02	3,488,100.86
4,246.00	1.39	261.83	4,242.82	-99.45	-83.56	29° 59' 56.249 N	94° 17' 51.504 W	817,335.32	3,488,098.12
4,344.00	1.37	260.60	4,340.79	-99.81	-85.90	29° 59' 56.246 N	94° 17' 51.531 W	817,334.96	3,488,095.79
4,386.00	1.49	262.00	4,382.78	-99.96	-86.93	29° 59' 56.245 N	94° 17' 51.543 W	817,334.81	3,488,094.76
4,434.00	1.58	261.67	4,430.76	-100.15	-88.21	29° 59' 56.244 N	94° 17' 51.557 W	817,334.62	3,488,093.48
4,527.00	1.66	264.88	4,523.73	-100.45	-90.82	29° 59' 56.242 N	94° 17' 51.587 W	817,334.32	3,488,090.87
4,624.00	1.76	264.59	4,620.68	-100.72	-93.70	29° 59' 56.240 N	94° 17' 51.620 W	817,334.05	3,488,087.99
4,718.00	1.77	268.05	4,714.64	-100.90	-96.59	29° 59' 56.240 N	94° 17' 51.653 W	817,333.87	3,488,085.10

Design Report for Bead Farm Co. #1 - 001 ST00BP00

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude	Geographic Coordinates Longitude	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
4,813.00	1.97	270.81	4,809.59	-100.93	-99.69	29° 59' 56.240 N	94° 17' 51.688 W	817,333.84	3,488,082.00
4,908.00	2.18	273.99	4,904.52	-100.78	-103.12	29° 59' 56.243 N	94° 17' 51.727 W	817,333.99	3,488,078.57
5,001.00	2.30	275.15	4,997.45	-100.49	-106.74	29° 59' 56.248 N	94° 17' 51.768 W	817,334.28	3,488,074.94
5,097.00	2.45	274.72	5,093.37	-100.15	-110.71	29° 59' 56.253 N	94° 17' 51.813 W	817,334.62	3,488,070.98
5,110.00	2.54	275.19	5,106.36	-100.10	-111.27	29° 59' 56.253 N	94° 17' 51.820 W	817,334.67	3,488,070.42
5,283.00	2.66	275.59	5,279.18	-99.36	-119.08	29° 59' 56.264 N	94° 17' 51.908 W	817,335.41	3,488,062.60
5,378.00	2.82	274.34	5,374.07	-98.97	-123.61	29° 59' 56.269 N	94° 17' 51.959 W	817,335.80	3,488,058.08
5,472.00	1.88	278.50	5,467.99	-98.57	-127.44	29° 59' 56.275 N	94° 17' 52.003 W	817,336.20	3,488,054.25
5,569.00	1.35	294.54	5,564.95	-97.86	-130.05	29° 59' 56.283 N	94° 17' 52.032 W	817,336.91	3,488,051.64
5,661.00	1.18	310.30	5,656.93	-96.80	-131.76	29° 59' 56.294 N	94° 17' 52.051 W	817,337.97	3,488,049.93
5,755.00	1.30	312.59	5,750.91	-95.45	-133.28	29° 59' 56.308 N	94° 17' 52.068 W	817,339.32	3,488,048.40
5,948.00	1.22	7.87	5,943.87	-91.93	-134.61	29° 59' 56.343 N	94° 17' 52.081 W	817,342.84	3,488,047.07
6,040.00	1.46	19.21	6,035.84	-89.85	-134.09	29° 59' 56.364 N	94° 17' 52.074 W	817,344.92	3,488,047.59
6,135.00	1.92	28.48	6,130.80	-87.31	-132.94	29° 59' 56.388 N	94° 17' 52.060 W	817,347.46	3,488,048.75
6,150.66	1.94	29.14	6,146.45	-86.85	-132.68	29° 59' 56.393 N	94° 17' 52.057 W	817,347.92	3,488,049.01
6,228.00	2.06	32.16	6,223.75	-84.53	-131.30	29° 59' 56.415 N	94° 17' 52.040 W	817,350.24	3,488,050.38
6,325.00	2.10	31.84	6,320.68	-81.54	-129.44	29° 59' 56.444 N	94° 17' 52.017 W	817,353.23	3,488,052.25
6,422.00	2.19	29.54	6,417.62	-78.42	-127.59	29° 59' 56.474 N	94° 17' 51.995 W	817,356.35	3,488,054.10
6,513.00	2.21	30.12	6,508.55	-75.39	-125.85	29° 59' 56.504 N	94° 17' 51.974 W	817,359.38	3,488,055.84
6,515.93	2.21	30.12	6,511.48	-75.29	-125.79	29° 59' 56.504 N	94° 17' 51.973 W	817,359.48	3,488,055.89
6,607.00	2.23	29.44	6,602.48	-72.23	-124.04	29° 59' 56.534 N	94° 17' 51.952 W	817,362.54	3,488,057.65
6,701.00	2.29	28.78	6,696.40	-68.99	-122.24	29° 59' 56.565 N	94° 17' 51.930 W	817,365.78	3,488,059.45
6,796.00	2.36	28.05	6,791.33	-65.60	-120.41	29° 59' 56.598 N	94° 17' 51.908 W	817,369.17	3,488,061.28
6,892.00	2.46	31.47	6,887.24	-62.10	-118.40	29° 59' 56.632 N	94° 17' 51.883 W	817,372.67	3,488,063.29
6,985.00	2.60	29.02	6,980.15	-58.55	-116.33	29° 59' 56.666 N	94° 17' 51.858 W	817,376.22	3,488,065.35
7,079.00	2.71	27.06	7,074.05	-54.71	-114.29	29° 59' 56.704 N	94° 17' 51.833 W	817,380.06	3,488,067.40
7,141.00	2.79	26.24	7,135.98	-52.05	-112.96	29° 59' 56.729 N	94° 17' 51.817 W	817,382.72	3,488,068.73
7,266.00	2.85	26.77	7,260.83	-46.55	-110.21	29° 59' 56.783 N	94° 17' 51.783 W	817,388.22	3,488,071.48
7,363.00	2.99	25.96	7,357.70	-42.12	-108.02	29° 59' 56.826 N	94° 17' 51.756 W	817,392.65	3,488,073.67
7,459.00	3.01	26.60	7,453.57	-37.61	-105.79	29° 59' 56.869 N	94° 17' 51.729 W	817,397.16	3,488,075.90
7,555.00	2.97	25.12	7,549.44	-33.11	-103.61	29° 59' 56.913 N	94° 17' 51.702 W	817,401.66	3,488,078.08
7,651.00	3.04	23.94	7,645.31	-28.53	-101.52	29° 59' 56.957 N	94° 17' 51.676 W	817,406.24	3,488,080.17
7,748.00	3.11	23.38	7,742.17	-23.76	-99.43	29° 59' 57.004 N	94° 17' 51.650 W	817,411.01	3,488,082.26
7,837.00	3.11	21.92	7,831.04	-19.31	-97.57	29° 59' 57.047 N	94° 17' 51.627 W	817,415.46	3,488,084.12
7,931.00	3.13	22.72	7,924.90	-14.58	-95.63	29° 59' 57.093 N	94° 17' 51.603 W	817,420.19	3,488,086.06
8,026.00	3.28	22.62	8,019.75	-9.68	-93.58	29° 59' 57.141 N	94° 17' 51.577 W	817,425.09	3,488,088.11
8,123.00	3.29	23.34	8,116.59	-4.56	-91.41	29° 59' 57.190 N	94° 17' 51.550 W	817,430.21	3,488,090.28
8,215.00	3.21	22.93	8,208.44	0.24	-89.36	29° 59' 57.237 N	94° 17' 51.525 W	817,435.01	3,488,092.33
8,309.00	3.25	23.97	8,302.29	5.10	-87.26	29° 59' 57.284 N	94° 17' 51.499 W	817,439.87	3,488,094.43
8,404.00	3.23	26.22	8,397.14	9.96	-84.98	29° 59' 57.332 N	94° 17' 51.470 W	817,444.73	3,488,096.71
8,498.00	3.05	26.32	8,491.00	14.58	-82.70	29° 59' 57.376 N	94° 17' 51.442 W	817,449.35	3,488,098.99
8,528.63	3.02	25.60	8,521.59	16.03	-81.99	29° 59' 57.390 N	94° 17' 51.434 W	817,450.80	3,488,099.70

Design Report for Bead Farm Co. #1 - 001 ST00BP00

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude (usft)	Geographic Coordinates Longitude (usft)	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
8,598.00	2.96	23.92	8,590.86	19.32	-80.47	29° 59' 57.422 N	94° 17' 51.415 W	817,454.09	3,488,101.22
8,671.00	2.96	23.92	8,663.76	22.77	-78.94	29° 59' 57.456 N	94° 17' 51.396 W	817,457.54	3,488,102.74

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	0.00	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
210.00	2,113.00	01 HAL MWD (MagVarMS) 17 1/2" Hole 210' - 2113'	3_MWD+HRGM+MS
2,263.00	8,598.00	02 HAL MWD (MagVarMS) 12 1/4" Hole 2263' - 8598'	3_MWD+HRGM+MS

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
100.00	100.00	20" Conductor Casing	20	20

Design Targets

Shape	Target Name	TVD ()	Northing ()	Easting ()	+N/-S	+E/-W	Created	Updated

Design Report for Bead Farm Co. #1 - 001 ST00BP00

Directional Difficulty Index

Average Dogleg over Survey:	0.24 °/100usft	Maximum Dogleg over Survey:	1.10 °/100usft at 2,113.00 usft
Net Tortousity applicable to Plans:	0.24 °/100usft	Directional Difficulty Index:	3.816

Audit Info

HALLIBURTON

ExxonMobil

Jefferson County, Tx

North Reference Sheet for Rose Prospect CCS - Bead Farm Co. #1 - 001 ST00BP00

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to (32.52') Nabors X-33 @ 59.52usft (Rig on Loc). Northing and Easting are relative to Bead Farm Co. #1

Coordinate System is US State Plane 1927 (Exact solution), Texas South Central 4204 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is 99° 0' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:30° 17' 0.000 N°

False Easting: 2,000,000.00usft, False Northing: 0.00usft, Scale Reduction: 0.99993028

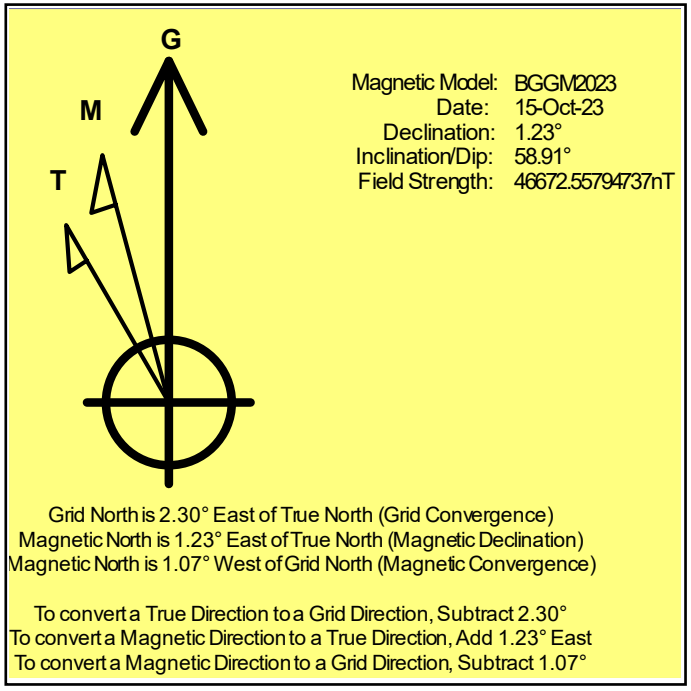
Grid Coordinates of Well: 817,434.77 usft N, 3,488,181.69 usft E

Geographical Coordinates of Well: 29° 59' 57.20" N, 094° 17' 50.51" W

Grid Convergence at Surface is: 2.30°

Based upon Minimum Curvature type calculations, at a Measured Depth of 8,671.00usft

the Bottom Hole Displacement is 82.16usft in the Direction of 286.09° (Grid).
Magnetic Convergence at surface is: 1.07° (15 October 2023, , BGGM2023)



CONFIDENTIAL BUSINESS INFORMATION

Railroad Commission of Texas

PERMIT TO DRILL, RE-COMPLETE, OR RE-ENTER ON REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

CONDITIONS AND INSTRUCTIONS

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*NOTIFICATION

The operator is **REQUIRED** to notify the district office when setting surface casing, intermediate casing, and production casing, or when plugging a dry hole. The district office **MUST** also be notified if the operator intends to re-enter a plugged well or re-complete a well into a different regulatory field. Time requirements are given below. The drilling permit number **MUST** be given with such notifications.

During Drilling

Permit at Drilling Site. A copy of the Form W-1 Drilling Permit Application, the location plat, a copy of Statewide Rule 13 alternate surface casing setting depth approval from the district office, if applicable, and this drilling permit must be kept at the permitted well site throughout drilling operations.

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Completion and Plugging Reports

Hydraulic Fracture Stimulation using Diesel Fuel: Most operators in Texas do not use diesel fuel in hydraulic fracturing fluids. Section 322 of the Energy Policy Act of 2005 amended the Underground Injection Control (UIC) portion of the federal Safe Drinking Water Act (42 USC 300h(d)) to define "underground Injection" to *EXCLUDE* " ...the underground injection of fluids or propping agents (*other than diesel fuels*) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities." (italic and underlining added.) Therefore, hydraulic fracturing may be subject to regulation under the federal UIC regulations if diesel fuel is injected or used as a propping agent. EPA defined "diesel fuel" using the following five (5) Chemical Abstract Service numbers: 68334-30-5 Primary Name: Fuels, diesel; 68476-34-6 Primary Name: Fuels, diesel, No. 2; 68476-30-2 Primary Name: Fuel oil No. 2; 68476-31-3 Primary Name: Fuel oil, No. 4; and 8008-20-6 Primary Name: Kerosene. As a result, an injection well permit would be required before performing hydraulic fracture stimulation using diesel fuel as defined by EPA on any well in Texas. Hydraulic fracture stimulation using diesel fuel as defined by EPA on a well in Texas without an injection well permit could result in enforcement action.

Producing Well. Statewide Rule 16 states that the operator of a well shall file with the Commission the appropriate completion report within ninety (90) days after completion of the well or within one hundred and fifty (150) days after the date on which the drilling operation is completed, whichever is earlier. Completion of the well in a field authorized by this permit voids the permit for all other fields included in the permit unless the operator indicates on the initial completion report that the well is to be a dual or multiple completion and promptly submits an application for multiple completion. All zones are required to be completed before the expiration date on the existing permit. Statewide Rule 40(d) requires that upon successful completion of a well in the same reservoir as any other well previously assigned the same acreage, proration plats and P-15s or P-16s (if required) or a lease plat and P-16 must be submitted with no double assignment of acreage unless authorized by rule.

Dry or Noncommercial Hole. Statewide Rule 14(b)(2) prohibits suspension of operations on each dry or non-commercial well without plugging unless the hole is cased and the casing is cemented in compliance with Commission rules. If properly cased, Statewide Rule 14(b)(2) requires that plugging operations must begin within a period of one (1) year after drilling or operations have ceased. Plugging operations must proceed with due diligence until completed. An extension to the one-year plugging requirement may be granted under the provisions stated in Statewide Rule 14(b)(2).

Intention to Plug. The operator must file a Form W-3A (Notice of Intention to Plug and Abandon) with the district office at least five (5) days prior to beginning plugging operations. If, however, a drilling rig is already at work on location and ready to begin plugging operations, the district director or the director's delegate may waive this requirement upon request, and verbally approve the proposed plugging procedures.

***Notification of Plugging a Dry Hole.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of four (4) hours prior to beginning plugging operations. The individual giving the notification MUST be able to advise the district office of the drilling permit number and all water protection depths for that location as stated in the Groundwater Advisory Unit letter.

DIRECT INQUIRIES TO: DRILLING PERMIT SECTION, OIL AND GAS DIVISION

PHONE
(512) 463-6751

MAIL:
PO Box 12967
Austin, Texas, 78711-2967

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER	DATE PERMIT ISSUED OR AMENDED	DISTRICT
891726	Aug 18, 2023	* 03
API NUMBER	FORM W-1 RECEIVED	COUNTY
42-245-32908	Jun 28, 2023	JEFFERSON
TYPE OF OPERATION	WELLBORE PROFILE(S)	ACRES
NEW DRILL	Vertical	642.2

OPERATOR 101256

EXXONMOBIL LOW C SOL ON STOR LLC

ATTN EDWARD E GRAHAM W1.2B.02
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389

NOTICE
This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored.
District Office Telephone No:
(713) 869-5001

LEASE NAME	WELL NUMBER
BEAD FARM CO.	1
LOCATION	TOTAL DEPTH
18 miles E direction from CLEVELAND	8700

Section, Block and/or Survey

SECTION 41 BLOCK ABSTRACT 266

SURVEY T&NO RR CO

DISTANCE TO SURVEY LINES	DISTANCE TO NEAREST LEASE LINE
1475 ft. N 1817 ft. W	ft.
DISTANCE TO LEASE LINES	DISTANCE TO NEAREST WELL ON LEASE
1475 ft. N 1817 ft. W	See FIELD(s) Below

FIELD(s) and LIMITATIONS:

* SEE FIELD DISTRICT FOR REPORTING PURPOSES *

FIELD NAME / LEASE NAME	ACRES	DEPTH	WELL #	DIST
	NEAREST LEASE		NEAREST WE	
WILDCAT	642.20	8,495	1	03
BEAD FARM CO.			0	

RESTRICTIONS: For exploratory test only

THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS

This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.

This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

SWR #13 Formation Data

JEFFERSON (245) County

Formation	Remarks	Geological Order	Effective Date
LAFAYETTE	disposal	1	12/17/2013
CAPROCK	disposal	2	12/17/2013
SPINDLETOP SALT DOME	disposal	3	12/17/2013
FANNETT SALT DOME	disposal	4	12/17/2013
BIG HILL SALT DOME	disposal	5	12/17/2013
PLEISTOCENE-LISSIE	disposal	6	12/17/2013
MIOCENE	disposal	7	12/17/2013
FRIO	disposal	8	12/17/2013
MARINULINA	disposal	9	12/17/2013
HETEROSTEGINA	disposal	10	12/17/2013

The above list may not be all inclusive, and may also include formations that do not intersect all wellbores. The listing order of the Formation information reflects the general stratigraphic order and relative geologic age. This is a dynamic list subject to updates and revisions. It is the operator's responsibility to make sure that at the time of spudding the well the most current list is being referenced. Refer to the RRC website at the following address for the most recent information.
http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info

CONFIDENTIAL BUSINESS INFORMATION

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
481 WINSCOTT ROAD, Ste. 200 • BENBROOK, TEXAS 76126
TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
TEXAS FIRM REGISTRATION NO. 10042504
WWW.TOPOGRAPHIC.COM

JEFFERSON COUNTY, TEXAS

SECTION 41, T. & N.O.R.R. CO. SURVEY, A-266

LEGEND

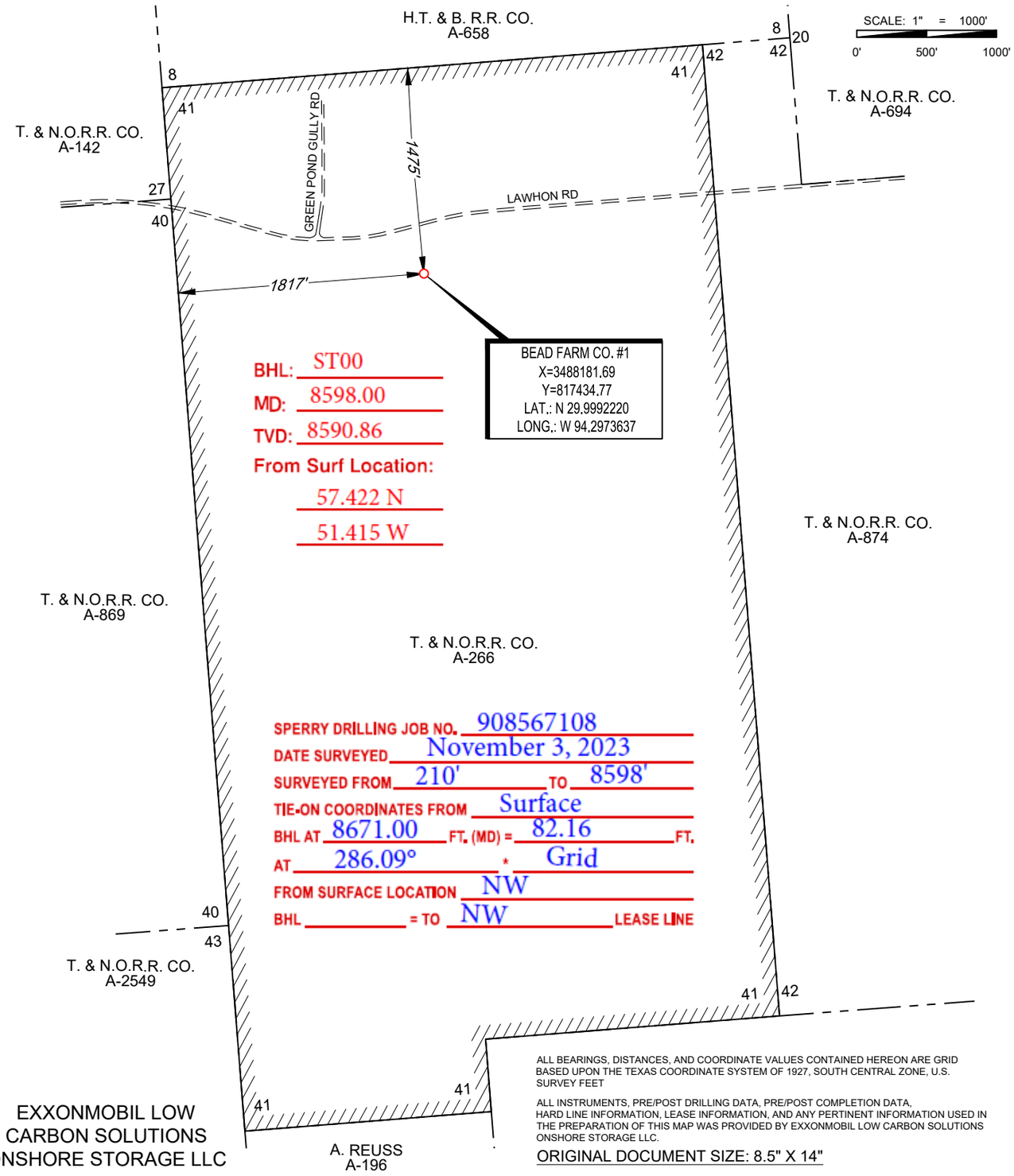
- UNIT/LEASE BOUNDARY
- SECTION LINE
- ROAD
- PROPOSED WELL

UNIT/LEASE SURVEY

S.H.L.	1817' FWL 1475' FNL	T. & N.O.R.R. CO., A-266 1817' FWL & 1475' FNL

N

SCALE: 1" = 1000'
0' 500' 1000'



BEAD FARM CO. #1
X=3488181.69
Y=817434.77
LAT.: N 29.9992220
LONG.: W 94.2973637

BHL: ST00
MD: 8598.00
TVD: 8590.86
From Surf Location:
57.422 N
51.415 W

SPERRY DRILLING JOB NO. 908567108
DATE SURVEYED November 3, 2023
SURVEYED FROM 210' TO 8598'
TIE-ON COORDINATES FROM Surface
BHL AT 8671.00 FT. (MD) = 82.16 FT.
AT 286.09° * Grid
FROM SURFACE LOCATION NW
BHL _____ = TO NW LEASE LINE

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE TEXAS COORDINATE SYSTEM OF 1927, SOUTH CENTRAL ZONE, U.S. SURVEY FEET

ALL INSTRUMENTS, PRE/POST DRILLING DATA, PRE/POST COMPLETION DATA, HARD LINE INFORMATION, LEASE INFORMATION, AND ANY PERTINENT INFORMATION USED IN THE PREPARATION OF THIS MAP WAS PROVIDED BY EXXONMOBIL LOW CARBON SOLUTIONS ONSHORE STORAGE LLC.

ORIGINAL DOCUMENT SIZE: 8.5" X 14"

EXXONMOBIL LOW CARBON SOLUTIONS ONSHORE STORAGE LLC

LEASE NAME & WELL NO.: BEAD FARM CO. #1 LEASE ACREAGE: CALLED 642.2 DATE OF SURVEY: APRIL 21, 2023

LOCATED: ±12 MILES SOUTHWEST OF BEAUMONT, TX GROUND ELEVATION: 23'

BEST ACCESSIBILITY TO LOCATION: ±0.02 MILES TO A POINT ±225 FEET NORTHWEST FROM LOCATION

DISTANCE & DIRECTION
FROM HWY JCT. OR TOWN: FROM THE INTERSECTION OF LAWHON RD AND GREEN POND GULLY RD, HEAD EAST

ON LAWHON RD 650 FEET, TURNING SOUTH, HEAD 350 FEET TO SURFACE LOCATION

STATE OF TEXAS
REGISTERED
JEFFREY N. LUEDERS
6512
PROFESSIONAL
LAND SURVEYOR

CERTIFICATION:

I, JEFFREY N. LUEDERS, A REGISTERED PROFESSIONAL LAND SURVEYOR, AND AN AUTHORIZED AGENT OF TOPOGRAPHIC LAND SURVEYORS, DO HEREBY CERTIFY THAT THE ABOVE DESCRIBED "PRE-CONSTRUCTION" PROPOSED WELL LOCATION WAS SURVEYED AND STAKED ON THE GROUND AS SHOWN HEREIN.

FILE NAME LO_TX245_BEAD_FARM_CO_1
DRH

DATE CERTIFIED: 05/16/2023 TEXAS REG. NO. 6512

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON

4607 HWY 90 EAST • BROUSSARD, LA 70518

PHONE 337 837 3061 • FAX 337 837 4400

Jefferson County,
State of Texas

I, **Coy Lorraine,** certify that: I am employed by Halliburton Energy Service and that I did on the day(s) of **October 15, 2023 to November 3, 2023** conduct or supervise the taking of Directional Surveys as follow:

- **210' to a depth of 8598' MWD surveys performed by Sperry Drilling MWD**
- **Final survey is projected to a total depth of 8671'**

I certify that the data is true, correct, complete and within the limitations of the tool as set forth by Halliburton Energy Services. I further certify that I am authorized and qualified to make this report, that this survey was conducted at the request of **EXXONMOBIL LOW C SOL ON STOR LLC** for the **BEAD FARM CO. 1** in **Jefferson County, TX,** and that I have reviewed this report and find that it conforms to the principles and procedures set forth by Halliburton Energy Service for quality well surveying.

Coy Lorraine

Coy Lorraine, M/LWD Service Quality

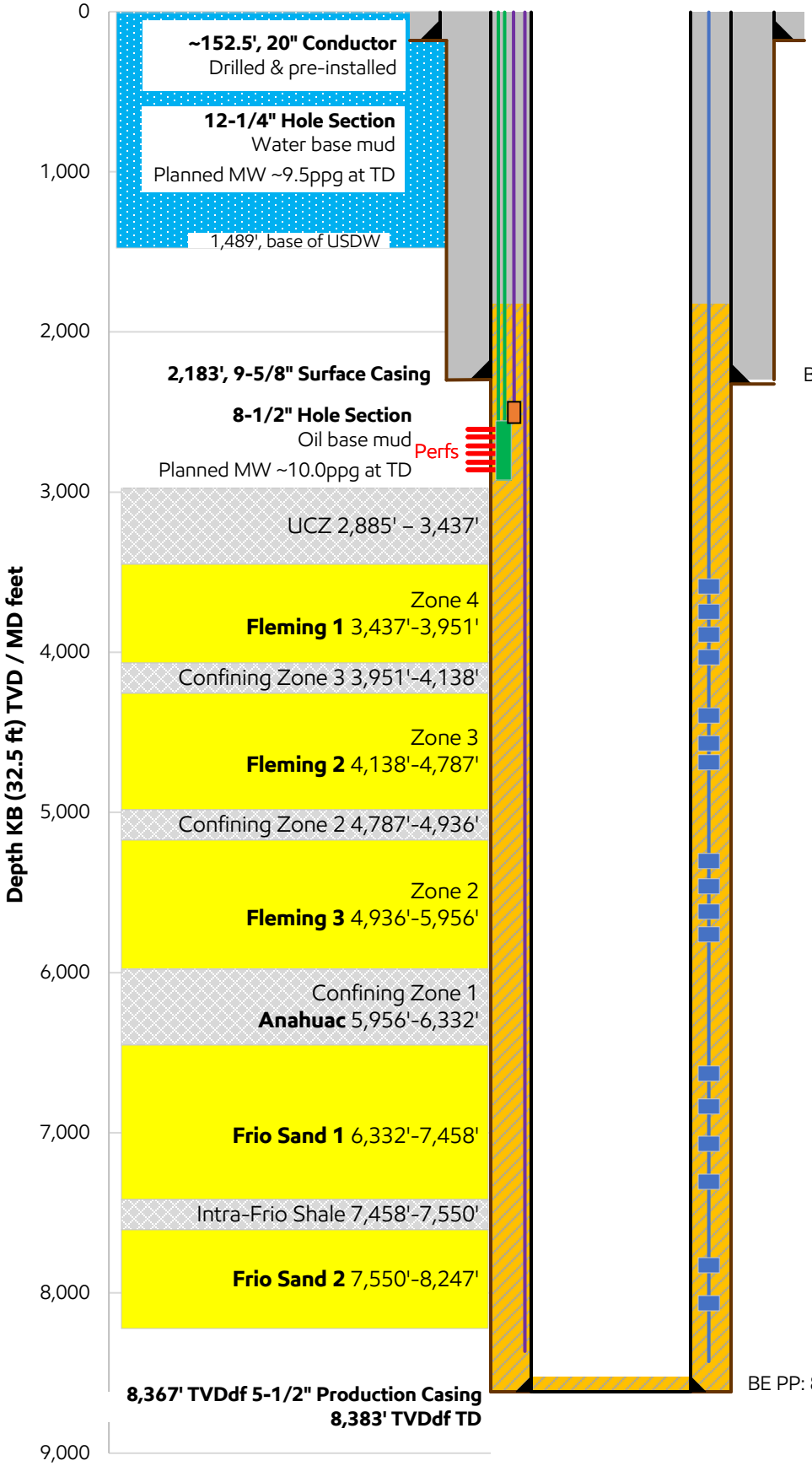
CONFIDENTIAL BUSINESS INFORMATION

4224532914 Bead Farm Co. #4 (In-Zone Monitoring Well No. 01)

CONFIDENTIAL BUSINESS INFORMATION

Rose CCS Project Bead Farm Company #4

Wellbore Schematic



20" Conductor
78.6 ppf, X-52, Welded
0.375" WT, 19.25" ID
Burst: 1,950, Collapse: 320 psi, Tensile: 1,202 kips

9-5/8" Surface casing, 40 ppf, J-55, BTC, from surface to 2,183'
0.395" WT, 8.835" ID, 8.679" Drift
Burst: 3,950 psi, Collapse: 2,570 psi, Tensile: 630 kips

Cement:
Lead Cmt – 12.0 ppg, Surface—1,780'
Tail Cmt – 15.0 ppg, 1,700'—2,183'

BE PP: 8.52ppg, BE FG: 12.85ppg BHST: 104°F

U-tube (2,466') + Perfs gun: Fluid sampling in permeable formation above UCZ – from 2491' to 2501'
Complete with Weatherford fiber optic P/T gauge

5-1/2", 20 ppf, L80, BTC from surface to 2,873'
0.361" WT, 4.778" ID, 4.653" Drift
Burst: 9,190 psi, Collapse: 8,830 psi, 466 kips
5-1/2", 23ppf, 22Cr125, VAM TOP from 2,873' to 3,472'
0.415" WT, 4.670" ID, 4.545" Drift
Burst: 16,980 psi, Collapse: 16,070 psi, 829 kips
5-1/2", 20 ppf, 13Cr-80, VAM21 from 3,472' to 8,234"
0.361" WT, 4.778" ID, 4.653" Drift
Burst: 9,190 psi, Collapse: 8,830 psi, 466 kips
5-1/2", 20 ppf, L80, BTC from 8,234' to 8,367'
0.361" WT, 4.778" ID, 4.653" Drift
Burst: 9,190 psi, Collapse: 8,830 psi, 466 kips

Cement:
Lead 12.5 ppg, from surface to 1,893'
Tail 13.5 ppg CO2 compatible cement, from 1,893' to 8,383'

Fiber Optic to 8,234'

TEC: P/T 17 sensors spread across 4 injection zones and permeable formation below UCZ:

Top: 3,427' 3,530' 3,692' 3,829' 4,145' 4,186' 4,696' 5,002' 5,309' 5,501' 5,795' 6,660' 6,857' 7,047' 7,267' 7,657' 7,787' MD (0.6' thickness)

BE PP: 8.62ppg, BE FG: 14.16ppg BHST: 194°F

CONFIDENTIAL BUSINESS INFORMATION

API No. 42-245-32914

Drilling Permit # 901180

SWR Exception

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

APPLICATION FOR PERMIT TO DRILL, RECOMPLETE, OR RE-ENTER

This facsimile W-1 was generated electronically from data submitted to the RRC.
A certification of the automated data is available in the RRC's Austin office.

FORM W-1 07/2004

Permit Status: Approved

1. RRC Operator No.: 101256

2. Operator's Name (as shown on form P-5, Organization Report): EXXONMOBIL LOW C SOL ON STOR LLC

3. Operator Address (include street, city, state, zip): ATTN EDWARD E GRAHAM, 22777 SPRINGWOODS VILLAGE PKWY, SPRING, TX 77389-0000

4. Lease Name: BEAD FARM COMPANY

5. Well No.: 4

GENERAL INFORMATION

6. Purpose of filing (mark ALL appropriate boxes): [X] New Drill [ ] Recompletion [ ] Reclass [ ] Field Transfer [ ] Re-Enter [ ] Amended [ ] Amended as Drilled (BHL) (Also File Form W-1D)

7. Wellbore Profile (mark ALL appropriate boxes): [X] Vertical [ ] Horizontal (Also File Form W-1H) [ ] Directional (Also File Form W-1D) [ ] Sidetrack

8. Total Depth: 10000

9. Do you have the right to develop the minerals under any right-of-way ? [ ] Yes [X] No

10. Is this well subject to Statewide Rule 36 (hydrogen sulfide area)? [ ] Yes [X] No

SURFACE LOCATION AND ACREAGE INFORMATION

11. RRC District No.: 03

12. County: JEFFERSON

13. Surface Location [X] Land [ ] Bay/Estuary [ ] Inland Waterway [ ] Offshore

14. This well is to be located 3 miles in a SE direction from China, TX which is the nearest town in the county of the well site.

15. Section: 7

16. Block:

17. Survey: HT&B RR CO

18. Abstract No.: A-150

19. Distance to nearest lease line: ft.

20. Number of contiguous acres in lease, pooled unit, or unitized tract: 454

21. Lease Perpendiculars: 522 ft from the SOUTH line and 1434 ft from the EAST line.

22. Survey Perpendiculars: 522 ft from the SOUTH line and 1434 ft from the EAST line.

23. Is this a pooled unit? [ ] Yes [X] No

24. Unitization Docket No:

25. Are you applying for Substandard Acreage Field? [ ] Yes (attach Form W-1A) [X] No

FIELD INFORMATION — List all fields of anticipated completion including Wildcat. List one zone per line.

26. RRC District No.	27. Field No.	28. Field Name (exactly as shown in RRC records)	29. Well Type	30. Completion Depth	31. Distance to Nearest Well in this Reservoir	32. Number of Wells on this lease in this Reservoir
03	00006001	WILDCAT	Exploratory Test Well	10000	0.00	1

BOTTOMHOLE LOCATION INFORMATION is required for DIRECTIONAL, HORIZONTAL, AND AMENDED AS DRILLED PERMIT APPLICATIONS

Remarks

Certificate:

I certify that information stated in this application is true and complete, to the best of my knowledge.

Josh Calkin — Name of filer

Jul 10, 2024 — Date submitted

(281)702-5537 — Phone

Josh.Calkin@erm.com — E-mail Address (OPTIONAL)

RRC Use Only Data Validation Time Stamp: Mar 27, 2025 2:00 PM(Current Version)

CONFIDENTIAL BUSINESS INFORMATION

Railroad Commission of Texas

PERMIT TO DRILL, RE-COMPLETE, OR RE-ENTER ON REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

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***Notification of Re-completion/Re-entry.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of eight (8) hours prior to the initiation of drilling or re-completion operations. The individual giving notification MUST be able to advise the district office of the drilling permit number.

Completion and Plugging Reports

Hydraulic Fracture Stimulation using Diesel Fuel: Most operators in Texas do not use diesel fuel in hydraulic fracturing fluids. Section 322 of the Energy Policy Act of 2005 amended the Underground Injection Control (UIC) portion of the federal Safe Drinking Water Act (42 USC 300h(d)) to define "underground Injection" to *EXCLUDE* " ...the underground injection of fluids or propping agents (*other than diesel fuels*) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities." (italic and underlining added.) Therefore, hydraulic fracturing may be subject to regulation under the federal UIC regulations if diesel fuel is injected or used as a propping agent. EPA defined "diesel fuel" using the following five (5) Chemical Abstract Service numbers: 68334-30-5 Primary Name: Fuels, diesel; 68476-34-6 Primary Name: Fuels, diesel, No. 2; 68476-30-2 Primary Name: Fuel oil No. 2; 68476-31-3 Primary Name: Fuel oil, No. 4; and 8008-20-6 Primary Name: Kerosene. As a result, an injection well permit would be required before performing hydraulic fracture stimulation using diesel fuel as defined by EPA on any well in Texas. Hydraulic fracture stimulation using diesel fuel as defined by EPA on a well in Texas without an injection well permit could result in enforcement action.

Producing Well. Statewide Rule 16 states that the operator of a well shall file with the Commission the appropriate completion report within ninety (90) days after completion of the well or within one hundred and fifty (150) days after the date on which the drilling operation is completed, whichever is earlier. Completion of the well in a field authorized by this permit voids the permit for all other fields included in the permit unless the operator indicates on the initial completion report that the well is to be a dual or multiple completion and promptly submits an application for multiple completion. All zones are required to be completed before the expiration date on the existing permit. Statewide Rule 40(d) requires that upon successful completion of a well in the same reservoir as any other well previously assigned the same acreage, proration plats and P-15s or P-16s (if required) or a lease plat and P-16 must be submitted with no double assignment of acreage unless authorized by rule.

Dry or Noncommercial Hole. Statewide Rule 14(b)(2) prohibits suspension of operations on each dry or non-commercial well without plugging unless the hole is cased and the casing is cemented in compliance with Commission rules. If properly cased, Statewide Rule 14(b)(2) requires that plugging operations must begin within a period of one (1) year after drilling or operations have ceased. Plugging operations must proceed with due diligence until completed. An extension to the one-year plugging requirement may be granted under the provisions stated in Statewide Rule 14(b)(2).

Intention to Plug. The operator must file a Form W-3A (Notice of Intention to Plug and Abandon) with the district office at least five (5) days prior to beginning plugging operations. If, however, a drilling rig is already at work on location and ready to begin plugging operations, the district director or the director's delegate may waive this requirement upon request, and verbally approve the proposed plugging procedures.

***Notification of Plugging a Dry Hole.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of four (4) hours prior to beginning plugging operations. The individual giving the notification MUST be able to advise the district office of the drilling permit number and all water protection depths for that location as stated in the Groundwater Advisory Unit letter.

DIRECT INQUIRIES TO: DRILLING PERMIT SECTION, OIL AND GAS DIVISION

PHONE
(512) 463-6751

MAIL:
PO Box 12967
Austin, Texas, 78711-2967

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER	DATE PERMIT ISSUED OR AMENDED	DISTRICT
901180	Jul 11, 2024	* 03
API NUMBER	**FORM W-1 RECEIVED**	**COUNTY**
42-245-32914	Jul 10, 2024	JEFFERSON
TYPE OF OPERATION	**WELLBORE PROFILE(S)**	**ACRES**
NEW DRILL	Vertical	454

OPERATOR 101256

EXXONMOBIL LOW C SOL ON STOR LLC

ATTN EDWARD E GRAHAM
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389-0000

NOTICE

This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored.

District Office Telephone No:
(713) 869-5001

LEASE NAME	WELL NUMBER
BEAD FARM COMPANY	4
LOCATION	**TOTAL DEPTH**
3 miles SE direction from CHINA, TX	10000

Section, Block and/or Survey

SECTION 7 BLOCK ABSTRACT 150

SURVEY HT&B RR CO

DISTANCE TO SURVEY LINES	DISTANCE TO NEAREST LEASE LINE
522 ft. SOUTH 1434 ft. EAST	ft.
DISTANCE TO LEASE LINES	**DISTANCE TO NEAREST WELL ON LEASE**
522 ft. SOUTH 1434 ft. EAST	See FIELD(s) Below

FIELD(s) and LIMITATIONS:

* SEE FIELD DISTRICT FOR REPORTING PURPOSES *

FIELD NAME / LEASE NAME	ACRES / NEAREST LEASE	DEPTH	WELL # / NEAREST WE	DIST
WILDCAT	454.00	10,000	4	03
BEAD FARM COMPANY			0	

RESTRICTIONS: For exploratory test only

THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS

This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.

This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

SWR #13 Formation Data

JEFFERSON (245) County

Formation	Remarks	Geological Order	Effective Date
LAFAYETTE	disposal	1	12/17/2013
CAPROCK	disposal	2	12/17/2013
SPINDLETOP SALT DOME	disposal	3	12/17/2013
FANNETT SALT DOME	disposal	4	12/17/2013
BIG HILL SALT DOME	disposal	5	12/17/2013
PLEISTOCENE-LISSIE	disposal	6	12/17/2013
MIOCENE	disposal	7	12/17/2013
FRIO	disposal	8	12/17/2013
MARINULINA	disposal	9	12/17/2013
HETEROSTEGINA	disposal	10	12/17/2013

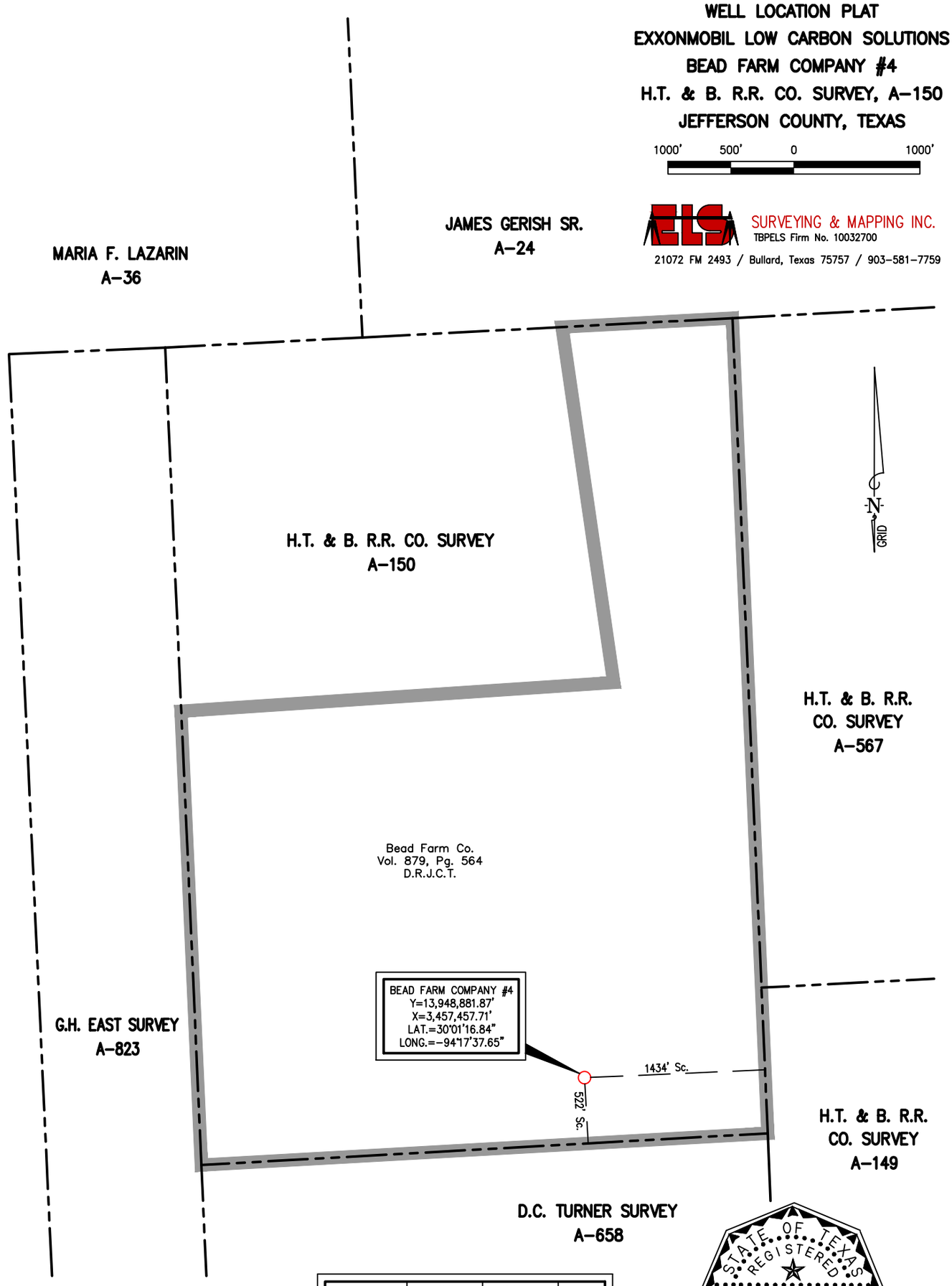
The above list may not be all inclusive, and may also include formations that do not intersect all wellbores. The listing order of the Formation information reflects the general stratigraphic order and relative geologic age. This is a dynamic list subject to updates and revisions. It is the operator's responsibility to make sure that at the time of spudding the well the most current list is being referenced. Refer to the RRC website at the following address for the most recent information.
http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info

CONFIDENTIAL BUSINESS INFORMATION

WELL LOCATION PLAT
EXXONMOBIL LOW CARBON SOLUTIONS
BEAD FARM COMPANY #4
H.T. & B. R.R. CO. SURVEY, A-150
JEFFERSON COUNTY, TEXAS

1000' 500' 0 1000'

ELS SURVEYING & MAPPING INC.
TBPELS Firm No. 10032700
21072 FM 2493 / Bullard, Texas 75757 / 903-581-7759



SHL	TRACT CALLS	SURVEY CALLS	ELEV.
BEAD FARM COMPANY #4	522' Sc. FSL 1434' Sc. FEL	522' Sc. FSL 1434' Sc. FEL	24.0'

Location is approximately
12.3 miles SW of Beaumont, Tx.
"CHINA" Quadrangle

Driving Directions:
From the Intersection of I10 and Smith Road near Cheek, TX, go Northwest on Smith Road, .8 miles turn left (West) Kidd Road. Go 1.6 miles turn right (North) on Boyt Road. Go 1.1 miles stay straight (West) on Lawhon Rd. Go 2.8 miles turn right (North) on Green Pond Gully Road Go 1.5 miles. Turn Left (Northwest). Drive on location.

DATE SURVEYED: 5/20/2024

Location is staked from tract lines as evidenced by occupation, information obtained from the Tx. R.R.C and provided deed records. Distances shown are not intended to be definitive in establishing actual title boundaries. The deed data shown hereon was furnished by others. This is not a title survey. Vesting documents may not have been provided. Bearings and distances are based on the Texas State Plane Coordinate System N.A.D. 83 (2011) (South Central Zone) derived from GPS Observations.

LEGEND
= TRACT LINE
= SURVEY LINE
= PROPOSED WELL

STATE OF TEXAS REGISTERED
JIM G. GLASS
5262
PROFESSIONAL LAND SURVEYOR

FOR THE EXCLUSIVE USE OF
EXXONMOBIL LOW CARBON SOLUTIONS

STATE OF TEXAS – – – COUNTY OF SMITH
I, Jim G. Glass, Registered Professional Land Surveyor, do hereby certify the above plat to be true and correct to the best of my knowledge.
Date: May 30, 2024 Bullard, Texas
E.L.S. Surveying & Mapping, Inc.

Registered Professional Land Surveyor No. 5262

Drafter: BWT/ECJ FB 2747/36-37 Job No. 430923 Map No. J-0923-LOC-MON2

CONFIDENTIAL BUSINESS INFORMATION

GROUNDWATER PROTECTION DETERMINATION

Form GW-2

Groundwater Advisory Unit

Date Issued:	27 June 2024	**GAU Number:**	382934

Attention:	EXXONMOBIL LOW C SOL ON ATTN EDWARD E GRAHAM SPRING, TX 77389	**API Number:**	
		County:	JEFFERSON
		Lease Name:	Bead Farm Company
		Lease Number:	
Operator No.:	101256	**Well Number:**	
		Total Vertical	10000
		Latitude:	30.021130
		Longitude:	-94.293605
		Datum:	NAD27

Purpose: Test Well

Location: Survey-HT&B RR CO; Abstract-150; Section-7

To protect usable-quality groundwater at this location, the Groundwater Advisory Unit of the Railroad Commission of Texas recommends:

Usable-quality water occurs from the land surface to a depth of 1,100 feet. Moreover, the interval from the land surface to a depth of 700 feet contains water of superior quality which must be isolated from water in underlying beds.

This recommendation is applicable to all wells within a radius of 2,000 feet of this location.

Note: Unless stated otherwise, this recommendation is intended to apply to all wells drilled within 200 feet of the subject well. Unless stated otherwise, this recommendation is for normal drilling, production, and plugging operations only.

This determination is based on information provided when the application was submitted on 06/27/2024. If the location information has changed, you must contact the Groundwater Advisory Unit, and submit a new application if necessary. If you have questions, please contact us at 512-463-2741 or gau@rrc.texas.gov.

Groundwater Advisory Unit, Oil and Gas Division

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

Form W-2

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

Status: Approved
Date: 01/30/2025
Tracking No.: 326182

OIL WELL POTENTIAL TEST, COMPLETION OR RECOMPLETION REPORT,

OPERATOR INFORMATION

Operator EXXONMOBIL LOW C SOL ON STOR LLC **Operator** 101256
Operator ATTN EDWARD E GRAHAM 22777 SPRINGWOODS VILLAGE PKWY SPRING, TX 77389-0000

WELL INFORMATION

API 42-245-32914 **County:** JEFFERSON
Well No.: 4 **RRC District** 03
Lease BEAD FARM COMPANY **Field** WILDCAT
RRC Lease 28194 **Field No.:** 00006001
Location Section: 7, Block: , Survey: HT&B RR CO, Abstract: 150

Latitude 30 **Longitud** -94
This well is 3 **miles in a** SE
direction from CHINA, TX,
which is the nearest town in the

FILING INFORMATION

Purpose of Well Record Only
Type of New Well
Well Type: Shut-In Producer **Completion or Recompletion** 10/07/2024

Type of Permit	Date	Permit No.
Permit to Drill, Plug Back, or	07/11/2024	901180
Rule 37 Exception		
Fluid Injection		
O&G Waste Disposal		
Other:		

COMPLETION INFORMATION

Spud 09/01/2024 **Date of first production after rig** 10/07/2024
Date plug back, deepening, drilling operation 09/01/2024 **Date plug back, deepening, recompletion, drilling operation** 10/07/2024
Number of producing wells on this lease this field (reservoir) including this 0 **Distance to nearest well in lease & reservoir** 0.0
Total number of acres in 454.00 **Elevation** 24 GL
Total depth TVD 8383 **Total depth MD**
Plug back depth TVD 8283 **Plug back depth MD**
Was directional survey made other inclination (Form W- No **Rotation time within surface casing Is Cementing Affidavit (Form W-15)** 25.8 Yes
Recompletion or No **Multiple** No
Type(s) of electric or other log(s) Gamma Ray (MWD)
Electric Log Other Description:
Location of well, relative to nearest lease of lease on which this well is 522.0 **Feet from the** South **Line and** 1434.0 **Feet from the** East **Line of the** BEAD FARM COMPANY **Lease.** **Off Lease :** No

FORMER FIELD (WITH RESERVOIR) & GAS ID OR OIL LEASE NO.

Field & Reservoir	Gas ID or Oil Lease	Well No.	Prior Service Type

PACKET: N/A

W2: N/A

FOR NEW DRILL OR RE-ENTRY, SURFACE CASING DEPTH DETERMINED BY:

GAU Groundwater Protection Determination		**Depth**	1100.0	**Date**	06/27/2024
SWR 13 Exception		**Depth**	2350.0		

INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION

Date of		**Production**	
Number of hours	24	**Choke**	
Was swab used during this	No	**Oil produced prior to**	

PRODUCTION DURING TEST PERIOD:

Oil		**Gas**	
Gas - Oil	0	**Flowing Tubing**	
Water			

CALCULATED 24-HOUR RATE

Oil		**Gas**	
Oil Gravity - API - 60.:		**Casing**	
Water			

CASING RECORD

Ro	Type of Casing	Casing Size (in.)	Hole Size	Setting Depth	Multi - Stage Tool	Multi - Stage Shoe	Cement Class	Cement Amoun	Slurry Volume (cu.	Top of Cement (ft.)	TOC Determined By
1	Surface	9 5/8	12 1/4	2184			H	548	1108.0	0	Circulated to Surface
2	Conventional Production	5 1/2	8 1/2	8367			H	1360	2573.5	0	Circulated to Surface

LINER RECORD

Ro	Liner Size	Hole Size	Liner Top	Liner Bottom	Cement Class	Cement Amoun	Slurry Volume (cu.	Top of Cement (ft.)	TOC Determined

N/A

TUBING RECORD

Ro	Size (in.)	Depth Size (ft.)	Packer Depth (ft.)/Type
			/

N/A

PRODUCING/INJECTION/DISPOSAL INTERVAL

Ro	Open hole?	From (ft.)	To (ft.)
1	No	L 2491	2501.0

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC.

Was hydraulic fracturing treatment No

Is well equipped with a downhole sleeve? No

If yes, actuation pressure

Production casing test pressure (PSIG)

Actual maximum pressure (PSIG) during hydraulic fracturing

fracturin

Has the hydraulic fracturing fluid disclosure been No

Ro	Type of Operation	Amount and Kind of Material Used	Depth Interval (ft.)

N/A

FORMATION RECORD

Formations	Encountere	Depth TVD	Depth MD	Is formation	Remarks
LAFAYETTE - DISPOSAL	No			No	
CAPROCK - DISPOSAL	No			No	
SPINDLETOP SALT DOME - DISPOSAL	No			No	
FANNETT SALT DOME - DISPOSAL	No			No	
BIG HILL SALT DOME - DISPOSAL	No			No	
PLEISTOCENE-LISSIE - DISPOSAL	No			No	
MIOCENE - DISPOSAL	Yes	3436.0	3437.0	Yes	LOGGED
FRIO - DISPOSAL	Yes	6331.0	6332.0	Yes	LOGGED
MARINULINA - DISPOSAL	No			No	
HETEROSTEGINA - DISPOSAL	Yes	6030.0	6091.0	Yes	LOGGED

Do the producing interval of this well produce H2S with a concentration in excess of 100 ppm No

Is the completion being downhole commingled No

REMARKS

THE WELL WAS SHUT-IN. THIS WELL HAS NOT PRODUCED.

RRC REMARKS

PUBLIC COMMENTS:

CASING RECORD :

CEMENT PUMPING WAS NOT REQUIRED TO SET THE CONDUCTOR CASING, AS THE CONDUCTOR WAS SUCCESSFULLY SET WITHOUT THE USE OF MUD. THE WELL WAS COMPLETED WITHOUT PUMPING OR MUD CIRCULATION. CLASS A 4000 PSI CEMENT, COMBINED WITH 5/8-INCH PEA GRAVEL AND MANUFACTURED SAND, WAS POURED DOWN THE BACKSIDE TO SECURE THE CONDUCTOR.

TUBING RECORD:

PURPOSE OF WELL TO MONITOR PRESSURE AND FLUID TRENDS. U-TUBE SAMPLER, FIBER AND TEC LINE MOUNTED ON BACKSIDE OF CASING.

PRODUCING/INJECTION/DISPOSAL INTERVAL :

U-TUBE FLUID SAMPLER WITH CASING MOUNTED GUNS ON THE BACKSIDE OF THE CASING. FLUID SAMPLING INTERVAL IS FROM 2,491 FEET MD TO 2,501 FEET MD.

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC. :

POTENTIAL TEST DATA:

OPERATOR'S CERTIFICATION

Printed	Josh Calkin	**Title:**	
Telephone	(281) 702-5537	**Date**	01/09/2025

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name: ExxonMobil Low Carbon Solutions	**Operator P-5 No.:** 101256
Cementer Name: Halliburton	**Cementer P-5 No.:** 347151

WELL INFORMATION

District No.: 3	**County:** Jefferson	
Well No.: Bead Farm Company #4	**API No.:** 42-245-32914	**Drilling Permit No.:** 901180
Lease Name: Bead Farm Company #4	**Lease No.:**	
Field Name: Wildcat	**Field No.:**	

I. CASING CEMENTING DATA

Type of casing: ☐ Conductor ☒ Surface ☐ Intermediate ☐ Liner ☐ Production

Drilled hole size (in.): 12-1/4"	**Depth of drilled hole (ft.):** 2,199'	**Est. % wash-out or hole enlargement:** 10%
Size of casing in O.D. (in.): 9-5/8"	**Casing weight (lbs/ft) and grade:**	**No. of centralizers used:**
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☒ NO **If no for surface casing, explain in Remarks.**	**Setting depth shoe (ft.):** 2,184'	**Top of liner (ft.):** / **Setting depth liner (ft.):**
Hrs. waiting on cement before drill-out:	**Calculated top of cement (ft.):**	**Cementing date:** September 2, 2024

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	372.02	A	See Remarks	883.74	~~484~~ 1,780
2	175.85	~~X~~ H	See Remarks	224.30	1,~~780~~ 404
3					
Total	547.87			1,108.04	2,184

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	**Depth of drilled hole (ft.):**	**Est. % wash-out or hole enlargement:**
Size of casing in O.D. (in.):	**Casing weight (lbs/ft) and grade:**	**No. of centralizers used:**
Tapered string drilled hole size (in.) Upper: Lower:	**Tapered string depth of drilled hole (ft.)** Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	**Tapered string casing weight(lbs/ft) and grade** Upper: Lower:	**Tapered string no. of centralizers used** Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		**Setting depth shoe (ft.):**
Hrs. waiting on cement before drill-out:	**Calculated top of cement (ft.):**	**Cementing date:**

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	**Depth of drilled hole (ft.):**	**Est. % wash-out or hole enlargement:**
Size of casing in O.D. (in.):	**Casing weight (lbs/ft) and grade:**	**No. of centralizers used:**
Tapered string drilled hole size (in.) Upper: Lower:	**Tapered string depth of drilled hole (ft.)** Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	**Tapered string casing weight(lbs/ft) and grade** Upper: Lower:	**Tapered string no. of centralizers used** Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		**Setting depth tool (ft.):**
Hrs. waiting on cement before drill-out:	**Calculated top of cement (ft.):**	**Cementing date:**

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS

Primary surface cement job confirmed TOC @ 120' (via temp log and CBL conducted within 24 hrs). Top-off job perfomed with cement returns to surface. (DP 901180)

EXXONMOBIL LOW CARBON-EBUS, Bead Farm Company #4, Surface: SLURRY 1: ExtendaCem , SLURRY 2: HALCem

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

Name and title of cementer's representative	Cementing Company	Signature
Cole Folsom SERVICE Leader	Halliburton	

Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.
4920 Industrial Dr	Bossier City LA 71111	701-421-3299	9/2/24

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

Typed or printed name of operator's representative	Title	Signature
James Harvey	Operations Supervisor	James Harvey

Address	City,	State,	Zip Code	Tel: Area Code	Number	Date: mo. day yr.
22777 Springwoods Village Parkway	Spring	TX	77389	9189164340		9/2/2024

Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

A. **What to file:** An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on one form.

The Form W-15 should be filed with the Form W-3, Plugging Record, unless the Form W-3 is signed by the cementing company representative. When reporting dry holes, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.

B. **How to file:** An oil and gas completion report and Form W-15 may be filed online using the Commission's Online System (https://webapps.rrc.texas.gov/security/login.do) or a paper copy of the form may be mailed to the Commission in Austin (P.O. Box 12967, Austin, Texas 78711-2967).

C. **Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.

To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 (http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.

D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing **and** Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

Form W-15
Rev. 08/2014

CEMENTING REPORT

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name: Exxon Mobil low Carbon Solutions	Operator P-5 No.:
Cementer Name: Halliburton	Cementer P-5 No.: 347151

WELL INFORMATION

District No.: 03	County: Jefferson
Well No.: B 4	API No.: 42-245-32914 Drilling Permit No.: 901180
Lease Name: Bead Farm Company	Lease No.:
Field Name: Wildcat	Field No.:

I. CASING CEMENTING DATA

Type of casing: ☐ Conductor ☐ Surface ☐ Intermediate ☐ Liner ☑ Production

Drilled hole size (in.): 8 1/2	Depth of drilled hole (ft.): 8383	Est. % wash-out or hole enlargement: 10%
Size of casing in O.D. (in.): 5 1/2	Casing weight (lbs/ft) and grade: ~~23~~ 20, 13CR	No. of centralizers used: 188
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☑ YES ☐ NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 8367	Top of liner (ft.):
		Setting depth liner (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date: 9/8/2024

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	505	H	SEE RAMARKS	921.62	1323
2	855	H	SEE REMARKS	1651.86	7047
3					
Total	1360			2573.48	8370

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth shoe (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth tool (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS

EXXONMOBIL CORPORATION-EBUS,BEAD FARM CO,4,PRODUCTION:
SLURRY 1:CorossaCem , SLURRY 2:CorossaLOCK

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

ZOUHIR ROUBACHE	Halliburton		
Name and title of cementer's representative	Cementing Company	Signature	
4720 Industrial	Bossier City, LA 71112	903-986-5096	9/8/2024
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

James Harvey	Operations Supervisor		
Typed or printed name of operator's representative	Title	Signature	
22777 Springwood Village	Spring, TX 77389	512 949 8272	9/10/24
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

A. **What to file:** An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on one form.

The Form W-15 should be filed with the Form W-3, Plugging Record, unless the Form W-3 is signed by the cementing company representative. When reporting dry holes, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.

B. **How to file:** An oil and gas completion report and Form W-15 may be filed online using the Commission's Online System (https://webapps.rrc.state.tx.us/security/login.do) or a paper copy of the form may be mailed to the Commission in Austin (P.O. Box 12967, Austin, Texas 78711-2967).

C. **Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.

To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 (http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.

D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing **and** Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON | Sperry Drilling

DGR / DIR

Powered by INSITE™

1 : 500

MD Detail Log

Country : USA
Field : WILDCAT
Location : Lat: 30° 1' 16.85" North Long: 94° 17' 37.65" West
Well : BEAD FARM COMPANY 4
Company : EXXONMOBIL LOW C SOL ON STOR LL
Rig : NABORS X33

Company	:	EXXONMOBIL LOW C SOL ON STOR LL
Rig	:	NABORS X33
Well	:	BEAD FARM COMPANY 4
Field	:	WILDCAT
Country	:	USA
API Number	:	4224532914

LOCATION

Latitude : 30° 1' 16.85" North
Longitude : 94° 17' 37.65" West

UTM X = 3,457,457.710 usft
UTM Y = 13,948,881.870 usft

Other Services

Permanent Datum : Ground Level
Elevation : 27.90 ft
Log Measured From : Drill Floor
32.52 ft Above Permanent Datum
Drilling Measured From : Drill Floor

MD LOG

Elev. KB
DF 60.42 ft
GL 27.90 ft
WD

Depth Logged : 152.50 ft To 8,383.00 ft
Date Logged : 01-Sep-24 To 05-Sep-24
Total Depth MD : 8,383.00 ft TVD : 8,381.10 ft
Spud Date : 01-Sep-24

Unit No. : N/A
Job No. : LF-XX-0909035812
Plot Type : Final
Plot Date : 20-Sep-24

Run No.	Borehole Record (MD)			Size	Casing Record (MD)		
	Size	From	To		Weight	From	To
100	12.250 in	152.50 ft	2,199.00 ft	20.000 in	78.60 lbpf	SURFACE	152.50 ft
200	8.500 in	2,199.00 ft	8,383.00 ft	9.625 in	40.00 lbpf	SURFACE	2,183.00 ft

WELL INFORMATION

MWD Run Number	100	200			
Date run completed	01-Sep-24	05-Sep-24			
Rig Bit Number	100	200			
Bit Size (in)	12.250	8.500			
Tool Nominal OD (in)	8.150	6.750			
Log Start Depth (MD, ft)	152.50	2,199.00			
Log End Depth (MD, ft)	2,199.00	8,383.00			
Drill or Wipe	Drill	Drill			
Drill/Wipe Start Date and Time	01-Sep-24 02:40	04-Sep-24 01:10			
Drill/Wipe End Date and Time	01-Sep-24 13:26	05-Sep-24 05:17			
Min Inc (deg) @ Depth (MD, ft)	0.18 @ 1,432.00	0.62 @ 2,928.00			
Max Inc (deg) @ Depth (MD, ft)	1.28 @ 1,717.00	2.38 @ 7,271.00			
Bit TFA(in2) / Bit Type	1.23 / HD65s	1.05 / HD65s			
Flow Rate (gpm)	700.00	600.00			
Max AV (fpm) / CV (fpm) @ MWD	80.0 / 46.0	171.0 / 350.0			
Fluid Type	Diesel Mud Base	Diesel Mud Base			
Density (ppg) / Viscosity (spqt)	9.30 / 32.00	10.25 / 67.00			
Filtrate CL (ppm)	1,300.00	57,000.00			
pH / API Filtrate (mptm)	8.10 / 8	N/A / 2			
PV (cP) / YP (lhf2)	4 / 4.00	22 / 29.00			
% Solids / % Sand	5.9 / 0	10.7 / 0			
% Oil / Oil:Water Ratio	0 / 0:100	56 / 65:35			
Rm @ Measured Temp (degF)	0.200 @ 87.00	N/A @ N/A			
Rmf @ Measured Temp (degF)	0.200 @ 87.00	N/A @ N/A			
Rmc @ Measured Temp (degF)	0.200 @ 87.00	N/A @ N/A			
Max Tool Temp (degF) / Source	113.18 / HCIM	173.18 / HCIM			
Rm @ Max Tool Temp (degF)	N/A @ 113.18	N/A @ 173.18			
Lead MWD Engineer	Daniel Nalin	Daniel Nalin			
Customer Representative	N/A	N/A			

SENSOR INFORMATION

Downhole Processor Information

Tool Type	HCIM	HCIM			
Software Version	98.43	98.43			
Sub Serial Number	11432374	13172015			
Insert Serial Number	11753209	250429			
Date and Time Initialized	31-Aug-24 18:21	03-Sep-24 17:42			
Date and Time Read	01-Sep-24 19:40	05-Sep-24 18:56			
ECMB SW Version	N/A	N/A			

Directional Sensor Information

Tool Type	PCDC	PCDC			
Distance From Bit (ft)	19.63	58.07			
Software Version	6.43	6.43			
Sub Serial Number	11233637	11112526			
Sonde Serial Number	11902241	11902011			
Sensor ID Number	N/A	N/A			
Toolface Offset (deg)	0.00	310.00			

Gamma Ray Sensor Information

Tool Type	DGR	DGR			
Distance From Bit (ft)	9.58	46.35			
Recorded Sample Period (sec)	4	4			
Software Version	N/A	N/A			
Sub Serial Number	11654485	12444096			
Insert/Sonde Serial Number	11671533	263646			

REMARKS

All depths are referenced to the driller's pipe tally.

DGXT - Gamma Ray formation exposure time

Default 1:500 Log Smoothing:
Interval Resolution: 0.5ft
Window Interval:(+/-) 0.6ft
Gap Fill: 3.0ft

Archive Name: BEAD_FARM_COMPANY_4_500MD_DETAIL_152_8383

Plot Width: 8.25 in

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
Oil and Gas Division

ELECTRIC LOG STATUS REPORT

FORM L-1

Tracking No.: 326182

This facsimile L-1 was generated electronically from data submitted to the RRC.

Instructions

When to File Form L-1:
- with Forms G-1, W-2, and GT-1 for new and deepened gas, oil, and geothermal wells
- with Form W-3 for plugged dry holes
- when sending in a log which was held under a request for confidentiality and the period for confidentiality has not yet expired.

When is Form L-1 NOT required:
- with Forms W-2, G-1, and GT-1 filed for injection wells, disposal wells, water supply wells, service wells, re-test wells, re-classifications, and plugbacks of oil, gas or geothermal wells
- with Form W-3 for plugging of other than a dry hole

Where to File Form L-1:
- with the appropriate Commission district office

Filling out Form L-1:
- Section I and the signature section must be filled out for all wells
- complete only the appropriate part of Section II

Type of log required:
- any wireline survey run for the purpose of obtaining lithology, porosity, or resistivity information
- no more than one such log is required but it must be of the subject well
- if such log is NOT run on the subject well, do NOT substitute any other type of log; just select Section II, Part A below

SECTION I. IDENTIFICATION

Operator Name: EXXONMOBIL LOW C SOL ON STOR LLC	District No. 03	Completion Date: 10/07/2024
Field Name WILDCAT	Drilling Permit No. 901180	
Lease Name BEAD FARM COMPANY	Lease/ID No. 28194	Well No. 4
County JEFFERSON	API No. 42- 245-32914	

SECTION II. LOG STATUS (Complete either A or B)

☐ A. BASIC ELECTRIC LOG NOT RUN

☒ B. BASIC ELECTRIC LOG RUN. (Select one)

☒ 1. Confidentiality is requested and a copy of the header for each log that has been run on the well is attached.

☐ 2. Confidentiality already granted on basic electric log covering this interval (applicable to deepened wells only).

☐ 3. Basic electric log covering this interval already on file with Commission (applicable to deepened wells only).

☐ 4. Log attached to (select one):

☐ (a) Form L-1 (this form). If the company/lease name on log is different from that shown in Section I, please enter name on log here: _____

Check here if attached log is being submitted after being held confidential. ☐

☐ (b) Form P-7, Application for Discovery Allowable and New Field Designation.

☐ (c) Form W-4, Application for Multiple Completion:

Lease or ID No(s). _____

Well No(s). _____

Josh Calkin
Signature

Title

EXXONMOBIL LOW C SOL ON STOR LLC
Name (print)

(281) 702-5537
Phone

12/18/2024
Date

-FOR RAILROAD COMMISSION USE ONLY-

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON

4607 HWY 90 EAST • BROUSSARD, LA 70518

PHONE 337 837 3061 • FAX 337 837 4400

Jefferson County,
State of Texas

I, **Kristen Killen,** certify that: I am employed by Halliburton Energy Service and that I did on the day(s) of **September 1, 2024 to September 5, 2024** conduct or supervise the taking of Directional Surveys as follow:

- **306' to a depth of 8320' MWD surveys performed by Sperry Drilling MWD**
- **Final survey is projected to a total depth of 8383'**

I certify that the data is true, correct, complete and within the limitations of the tool as set forth by Halliburton Energy Services. I further certify that I am authorized and qualified to make this report, that this survey was conducted at the request of **EXXONMOBIL LOW C SOL ON STOR LLC** for the **BEAD FARM COMPANY 4** in **Jefferson County, TX,** and that I have reviewed this report and find that it conforms to the principles and procedures set forth by Halliburton Energy Service for quality well surveying.

Kristen Killen, Log Analyst

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON
4607 HWY 90 EAST • BROUSSARD, LA 70518
PHONE 337 837 3061 • FAX 337 837 4400

September 20, 2024

Railroad Commission of Texas
Oil and Gas Division
P.O. Box 12967
Capital Station
Austin, TX 78711

Re: EXXONMOBIL LOW C SOL ON STOR LLC
R.R.C. Operator No. 101256
BEAD FARM COMPANY 4
Permit No. 901180
Jefferson County, TX
API # 42-245-32914

Attention: Ms. Pam Johns

Enclosed, please find one copy of the survey performed on the above referenced well by Halliburton Energy Services, Inc. Operator #347-151.

Other information required by your office is as follows:

Name & Title of Surveyor	-	Kristen Killen, Log Analyst
Drainhole Number	-	Original
Surveyed Depths	-	306' – 8320' MWD Surveys performed by Sperry Drilling
Dates Performed	-	September 1, 2024 to September 5, 2024
Type of Survey	-	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the listed e-mail address.

Respectfully,

Kristen Killen
Log Analyst
Kristen.Killen@Halliburton.com
Halliburton / Sperry Drilling

Enclosures
RE: LA-MM 909035812

CONFIDENTIAL BUSINESS INFORMATION

ExxonMobil

Jefferson County, Tx_NAD83
Rose Prospect CCS
Bead Farm Company 4
4224532914
004 ST00BP00 Monitor

Design: 004 ST00BP00

Sperry Drilling Services

Geodetic Report

16 September, 2024

Well Coordinates: 4,251,627.70 N, 1,053,835.22 E (30° 01' 16.84" N, 094° 17' 37.65" W)
Ground Level: 27.90 ft

Local Coordinate Origin:	Centered on Well Bead Farm Company 4
Viewing Datum:	(32.52') Nabors X-33 @ 60.4ft (Spud)
TVDs to System:	N
North Reference:	Grid
Unit System:	API

Version: 5000.17 Build: 04

HALLIBURTON

Design Report for Bead Farm Company 4 - 004 ST00BP00

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Geographic Coordinates Latitude (ft)	Geographic Coordinates Longitude (ft)	UTM Coordinates Northing (m)	UTM Coordinates Easting (m)
0.0	0.00	0.00	0.0	0.0	0.0	30° 1' 16.845 N	94° 17' 37.650 W	4,251,627.70	1,053,835.22
306.0	0.32	198.12	306.0	-0.8	-0.3	30° 1' 16.837 N	94° 17' 37.654 W	4,251,627.45	1,053,835.14
414.0	0.47	222.63	414.0	-1.4	-0.7	30° 1' 16.831 N	94° 17' 37.658 W	4,251,627.26	1,053,835.02
502.0	0.50	238.67	502.0	-1.9	-1.2	30° 1' 16.827 N	94° 17' 37.665 W	4,251,627.12	1,053,834.84
610.0	0.56	223.44	610.0	-2.5	-2.0	30° 1' 16.821 N	94° 17' 37.674 W	4,251,626.93	1,053,834.61
684.0	0.73	217.70	684.0	-3.2	-2.5	30° 1' 16.815 N	94° 17' 37.681 W	4,251,626.74	1,053,834.45
774.0	0.71	220.18	774.0	-4.0	-3.2	30° 1' 16.806 N	94° 17' 37.689 W	4,251,626.47	1,053,834.23
862.0	0.57	228.82	862.0	-4.7	-3.9	30° 1' 16.800 N	94° 17' 37.697 W	4,251,626.25	1,053,834.02
956.0	0.64	221.03	956.0	-5.4	-4.6	30° 1' 16.793 N	94° 17' 37.705 W	4,251,626.04	1,053,833.81
1,053.0	0.68	235.33	1,053.0	-6.2	-5.5	30° 1' 16.786 N	94° 17' 37.715 W	4,251,625.81	1,053,833.56
1,149.0	0.43	209.78	1,149.0	-6.8	-6.1	30° 1' 16.780 N	94° 17' 37.723 W	4,251,625.62	1,053,833.36
1,243.0	0.31	224.36	1,243.0	-7.3	-6.5	30° 1' 16.775 N	94° 17' 37.727 W	4,251,625.47	1,053,833.25
1,335.0	0.37	83.65	1,335.0	-7.4	-6.3	30° 1' 16.774 N	94° 17' 37.726 W	4,251,625.43	1,053,833.29
1,432.0	0.18	65.07	1,432.0	-7.3	-5.9	30° 1' 16.775 N	94° 17' 37.720 W	4,251,625.46	1,053,833.43
1,527.0	0.25	159.60	1,527.0	-7.5	-5.7	30° 1' 16.773 N	94° 17' 37.718 W	4,251,625.42	1,053,833.49
1,620.0	0.57	127.86	1,620.0	-8.0	-5.2	30° 1' 16.768 N	94° 17' 37.713 W	4,251,625.27	1,053,833.62
1,717.0	1.28	135.35	1,716.9	-9.0	-4.1	30° 1' 16.757 N	94° 17' 37.701 W	4,251,624.95	1,053,833.97
1,815.0	1.23	141.72	1,814.9	-10.6	-2.7	30° 1' 16.741 N	94° 17' 37.686 W	4,251,624.46	1,053,834.40
1,907.0	1.11	133.32	1,906.9	-12.0	-1.4	30° 1' 16.727 N	94° 17' 37.672 W	4,251,624.04	1,053,834.79
1,998.0	0.78	120.21	1,997.9	-12.9	-0.2	30° 1' 16.717 N	94° 17' 37.659 W	4,251,623.76	1,053,835.15
2,092.0	0.75	133.29	2,091.9	-13.7	0.8	30° 1' 16.709 N	94° 17' 37.648 W	4,251,623.53	1,053,835.45
2,178.0	0.91	127.05	2,177.9	-14.5	1.7	30° 1' 16.701 N	94° 17' 37.637 W	4,251,623.29	1,053,835.74
2,264.0	0.88	125.11	2,263.9	-15.3	2.8	30° 1' 16.693 N	94° 17' 37.625 W	4,251,623.05	1,053,836.07
2,361.0	0.86	135.03	2,360.8	-16.2	3.9	30° 1' 16.683 N	94° 17' 37.613 W	4,251,622.76	1,053,836.41
2,451.0	0.96	152.98	2,450.8	-17.4	4.7	30° 1' 16.671 N	94° 17' 37.604 W	4,251,622.41	1,053,836.66
2,545.0	1.05	155.00	2,544.8	-18.8	5.5	30° 1' 16.656 N	94° 17' 37.597 W	4,251,621.96	1,053,836.88
2,642.0	0.89	152.80	2,641.8	-20.3	6.2	30° 1' 16.642 N	94° 17' 37.589 W	4,251,621.51	1,053,837.10
2,733.0	0.81	161.95	2,732.8	-21.6	6.7	30° 1' 16.629 N	94° 17' 37.584 W	4,251,621.13	1,053,837.26
2,830.0	0.75	164.25	2,829.8	-22.8	7.1	30° 1' 16.616 N	94° 17' 37.580 W	4,251,620.74	1,053,837.38
2,928.0	0.62	164.53	2,927.8	-23.9	7.4	30° 1' 16.605 N	94° 17' 37.577 W	4,251,620.40	1,053,837.48
3,019.0	0.63	154.06	3,018.8	-24.9	7.8	30° 1' 16.596 N	94° 17' 37.573 W	4,251,620.12	1,053,837.58
3,115.0	0.65	156.66	3,114.8	-25.8	8.2	30° 1' 16.586 N	94° 17' 37.569 W	4,251,619.82	1,053,837.72
3,207.0	0.75	162.03	3,206.8	-26.9	8.6	30° 1' 16.576 N	94° 17' 37.565 W	4,251,619.50	1,053,837.84
3,302.0	0.82	170.76	3,301.8	-28.2	8.9	30° 1' 16.563 N	94° 17' 37.562 W	4,251,619.12	1,053,837.93
3,396.0	0.81	168.40	3,395.7	-29.5	9.1	30° 1' 16.550 N	94° 17' 37.560 W	4,251,618.71	1,053,838.00
3,415.8	0.81	169.63	3,415.6	-29.7	9.2	30° 1' 16.547 N	94° 17' 37.559 W	4,251,618.63	1,053,838.02
3,490.0	0.83	174.11	3,489.7	-30.8	9.3	30° 1' 16.537 N	94° 17' 37.558 W	4,251,618.31	1,053,838.07
3,585.0	0.76	182.72	3,584.7	-32.1	9.4	30° 1' 16.524 N	94° 17' 37.558 W	4,251,617.91	1,053,838.08
3,679.0	0.75	176.68	3,678.7	-33.3	9.4	30° 1' 16.511 N	94° 17' 37.559 W	4,251,617.53	1,053,838.08
3,774.0	0.69	165.36	3,773.7	-34.5	9.6	30° 1' 16.500 N	94° 17' 37.557 W	4,251,617.17	1,053,838.14
3,867.0	0.63	187.14	3,866.7	-35.6	9.7	30° 1' 16.489 N	94° 17' 37.557 W	4,251,616.85	1,053,838.16
3,961.0	0.69	183.27	3,960.7	-36.7	9.6	30° 1' 16.479 N	94° 17' 37.558 W	4,251,616.53	1,053,838.13

Design Report for Bead Farm Company 4 - 004 ST00BP00

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Geographic Coordinates Latitude	Geographic Coordinates Longitude	UTM Coordinates Northing (m)	UTM Coordinates Easting (m)
4,056.0	1.00	37.32	4,055.7	-36.6	10.0	30° 1' 16.479 N	94° 17' 37.553 W	4,251,616.55	1,053,838.27
4,150.0	1.12	45.72	4,149.7	-35.3	11.2	30° 1' 16.492 N	94° 17' 37.539 W	4,251,616.95	1,053,838.63
4,245.0	0.86	49.51	4,244.7	-34.2	12.4	30° 1' 16.502 N	94° 17' 37.525 W	4,251,617.29	1,053,838.99
4,434.0	0.63	55.87	4,433.7	-32.7	14.3	30° 1' 16.516 N	94° 17' 37.502 W	4,251,617.74	1,053,839.58
4,523.0	0.81	47.37	4,522.6	-32.0	15.2	30° 1' 16.523 N	94° 17' 37.492 W	4,251,617.96	1,053,839.85
4,600.0	0.93	49.95	4,599.6	-31.2	16.1	30° 1' 16.530 N	94° 17' 37.482 W	4,251,618.19	1,053,840.12
4,717.0	1.10	44.11	4,716.6	-29.8	17.6	30° 1' 16.544 N	94° 17' 37.464 W	4,251,618.62	1,053,840.58
4,813.0	1.20	50.22	4,812.6	-28.5	19.0	30° 1' 16.556 N	94° 17' 37.447 W	4,251,619.02	1,053,841.01
4,907.0	1.14	56.10	4,906.6	-27.3	20.5	30° 1' 16.567 N	94° 17' 37.429 W	4,251,619.37	1,053,841.47
5,002.0	1.30	54.06	5,001.6	-26.1	22.2	30° 1' 16.577 N	94° 17' 37.410 W	4,251,619.73	1,053,841.98
5,098.0	1.30	48.08	5,097.5	-24.8	23.9	30° 1' 16.590 N	94° 17' 37.390 W	4,251,620.14	1,053,842.50
5,192.0	1.27	65.27	5,191.5	-23.6	25.6	30° 1' 16.601 N	94° 17' 37.370 W	4,251,620.49	1,053,843.03
5,287.0	1.44	67.44	5,286.5	-22.7	27.7	30° 1' 16.609 N	94° 17' 37.346 W	4,251,620.77	1,053,843.65
5,380.0	1.58	61.93	5,379.5	-21.7	29.9	30° 1' 16.619 N	94° 17' 37.321 W	4,251,621.09	1,053,844.33
5,475.0	1.41	332.54	5,474.4	-20.0	30.5	30° 1' 16.635 N	94° 17' 37.313 W	4,251,621.59	1,053,844.51
5,570.0	1.54	324.88	5,569.4	-17.9	29.2	30° 1' 16.656 N	94° 17' 37.326 W	4,251,622.23	1,053,844.13
5,664.0	1.65	324.88	5,663.4	-15.8	27.7	30° 1' 16.678 N	94° 17' 37.342 W	4,251,622.88	1,053,843.67
5,758.0	1.72	324.00	5,757.3	-13.6	26.1	30° 1' 16.700 N	94° 17' 37.360 W	4,251,623.56	1,053,843.18
5,852.0	1.59	327.25	5,851.3	-11.3	24.6	30° 1' 16.723 N	94° 17' 37.376 W	4,251,624.25	1,053,842.71
5,947.0	1.76	326.45	5,946.2	-9.0	23.1	30° 1' 16.747 N	94° 17' 37.392 W	4,251,624.95	1,053,842.25
6,042.0	1.83	325.28	6,041.2	-6.5	21.4	30° 1' 16.772 N	94° 17' 37.410 W	4,251,625.70	1,053,841.74
6,136.0	1.55	320.67	6,135.2	-4.3	19.7	30° 1' 16.794 N	94° 17' 37.428 W	4,251,626.38	1,053,841.23
6,230.0	1.74	328.51	6,229.1	-2.1	18.2	30° 1' 16.817 N	94° 17' 37.445 W	4,251,627.05	1,053,840.76
6,325.0	1.67	328.65	6,324.1	0.3	16.7	30° 1' 16.841 N	94° 17' 37.460 W	4,251,627.79	1,053,840.31
6,419.0	1.61	334.63	6,418.0	2.7	15.4	30° 1' 16.865 N	94° 17' 37.474 W	4,251,628.51	1,053,839.92
6,514.0	1.72	331.62	6,513.0	5.1	14.2	30° 1' 16.890 N	94° 17' 37.487 W	4,251,629.26	1,053,839.54
6,609.0	1.67	330.10	6,608.0	7.6	12.8	30° 1' 16.915 N	94° 17' 37.501 W	4,251,630.00	1,053,839.12
6,703.0	1.84	340.46	6,701.9	10.2	11.6	30° 1' 16.941 N	94° 17' 37.514 W	4,251,630.80	1,053,838.76
6,797.0	1.98	336.67	6,795.9	13.1	10.5	30° 1' 16.970 N	94° 17' 37.525 W	4,251,631.69	1,053,838.41
6,893.0	2.28	321.94	6,891.8	16.1	8.6	30° 1' 17.001 N	94° 17' 37.545 W	4,251,632.61	1,053,837.85
6,987.0	2.20	322.22	6,985.7	19.0	6.4	30° 1' 17.031 N	94° 17' 37.569 W	4,251,633.49	1,053,837.16
7,081.0	2.13	327.85	7,079.7	21.9	4.3	30° 1' 17.060 N	94° 17' 37.591 W	4,251,634.38	1,053,836.54
7,176.0	2.19	330.29	7,174.6	25.0	2.5	30° 1' 17.091 N	94° 17' 37.610 W	4,251,635.32	1,053,835.98
7,271.0	2.38	329.87	7,269.5	28.3	0.6	30° 1' 17.124 N	94° 17' 37.630 W	4,251,636.32	1,053,835.41
7,365.0	2.32	329.24	7,363.4	31.6	-1.3	30° 1' 17.158 N	94° 17' 37.651 W	4,251,637.33	1,053,834.81
7,459.0	2.04	328.07	7,457.4	34.7	-3.2	30° 1' 17.189 N	94° 17' 37.671 W	4,251,638.26	1,053,834.24
7,554.0	1.11	302.87	7,552.3	36.6	-4.9	30° 1' 17.209 N	94° 17' 37.689 W	4,251,638.85	1,053,833.74
7,648.0	1.06	286.01	7,646.3	37.3	-6.5	30° 1' 17.217 N	94° 17' 37.707 W	4,251,639.07	1,053,833.25
7,743.0	1.05	266.73	7,741.3	37.5	-8.2	30° 1' 17.219 N	94° 17' 37.726 W	4,251,639.13	1,053,832.73
7,838.0	0.93	267.08	7,836.3	37.4	-9.8	30° 1' 17.219 N	94° 17' 37.745 W	4,251,639.11	1,053,832.23
7,933.0	1.31	273.72	7,931.3	37.5	-11.7	30° 1' 17.220 N	94° 17' 37.766 W	4,251,639.11	1,053,831.66
8,028.0	1.54	274.02	8,026.2	37.6	-14.0	30° 1' 17.223 N	94° 17' 37.792 W	4,251,639.16	1,053,830.94

Design Report for Bead Farm Company 4 - 004 ST00BP00

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Geographic Coordinates Latitude	Geographic Coordinates Longitude	UTM Coordinates Northing (m)	UTM Coordinates Easting (m)
8,122.0	1.54	272.79	8,120.2	37.8	-16.5	30° 1' 17.225 N	94° 17' 37.821 W	4,251,639.21	1,053,830.17
8,216.0	1.42	278.74	8,214.2	38.0	-19.0	30° 1' 17.228 N	94° 17' 37.848 W	4,251,639.28	1,053,829.44
8,320.0	1.48	303.75	8,318.1	38.9	-21.3	30° 1' 17.239 N	94° 17' 37.875 W	4,251,639.57	1,053,828.71
8,383.0	1.48	303.75	8,381.1	39.9	-22.7	30° 1' 17.248 N	94° 17' 37.890 W	4,251,639.84	1,053,828.30

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
8,383.0	8,381.1	39.9	-22.7	Proj. to Bit

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (ft)	Origin +E/-W (ft)	Start TVD (ft)
User	No Target (Freehand)	0.00	Slot	0.0	0.0	0.0

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
306.0	2,178.0	01 HAL MWD (MagVarMS) 12 1/4" Hole 306' - 2178'	3_MWD+HRGM+MS
2,264.0	8,320.0	02 HAL MWD (MagVarMS) 8 1/2" Hole 2264' - 8320'	3_MWD+HRGM+MS

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
152.5	152.5	20" Conductor Casing	20.000	20.000
2,184.0	2,183.9	9-5/8" Surface Casing	9.625	12.250
8,367.5	8,365.6	5-1/2" Production Casing	5.500	8.500

Design Report for Bead Farm Company 4 - 004 ST00BP00

Targets for 004 ST00BP00 Monitor

Shape	Target Name	TVD (ft)	Northing (m)	Easting (m)	+N/-S ft	+E/-W ft	Created	Updated
Polygon	Rose2 T. Fleming SD Rect. 400'	3,562.0	4,248,251.97	1,053,561.35	-11,075.2	-898.5	5/13/2024	7/5/2024
Polygon	Rose1 T. Fleming SD Rect. 400'	3,508.3	4,249,261.67	1,054,768.97	-7,762.6	3,063.5	5/13/2024	6/17/2024
Polygon	Rose BF4 T. Fleming SD Rect. 150'	3,416.0	4,251,627.70	1,053,835.22	0.0	0.0	7/30/2024	8/29/2024

North Reference Sheet for Rose Prospect CCS - Bead Farm Company 4 - 004 ST00BP00 Monitor

All data is in Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to (32.52') Nabors X-33 @ 60.4ft (Spud). Northing and Easting are relative to Bead Farm Company 4

Coordinate System is US State Plane 1983, Texas South Central Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is 99° 0' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:30° 17' 0.000 N°

False Easting: 600,000.00m, False Northing: 4,000,000.00m, Scale Reduction: 0.99993482

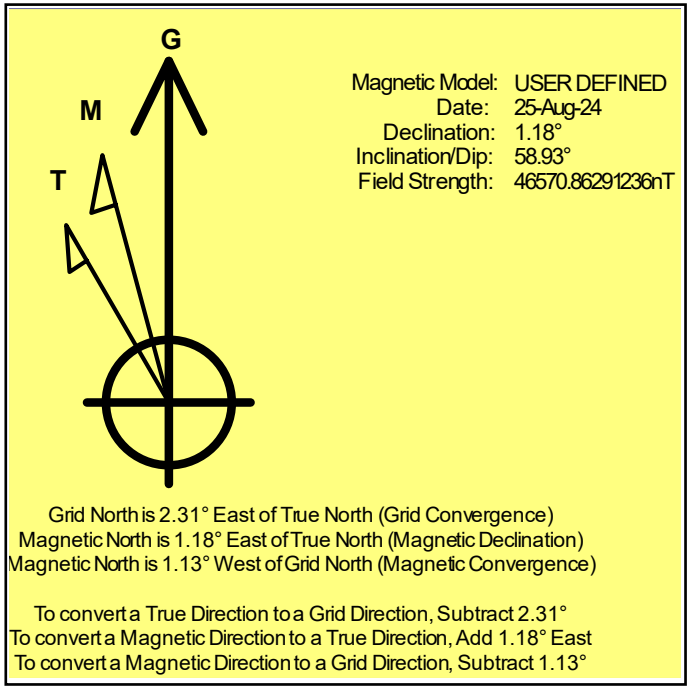
Grid Coordinates of Well: 4,251,627.70 m N, 1,053,835.22 m E

Geographical Coordinates of Well: 30° 01' 16.84" N, 094° 17' 37.65" W

Grid Convergence at Surface is: 2.31°

Based upon Minimum Curvature type calculations, at a Measured Depth of 8,383.02ft

the Bottom Hole Displacement is 45.86ft in the Direction of 330.33° (Grid).
Magnetic Convergence at surface is: 1.13° (25 August 2024, , User Defined)



CONFIDENTIAL BUSINESS INFORMATION

Railroad Commission of Texas

PERMIT TO DRILL, RE-COMPLETE, OR RE-ENTER ON REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

CONDITIONS AND INSTRUCTIONS

Permit Invalidation. It is the operator's responsibility to make sure that the permitted location complies with Commission density and spacing rules in effect on the spud date. The permit becomes invalid automatically if, because of a field rule change or the drilling of another well, the stated location is not in compliance with Commission field rules on the spud date. If this occurs, application for an exception to Statewide Rules 37 and 38 must be made and a special permit granted prior to spudding. Failure to do so may result in an allowable not being assigned and/or enforcement procedures being initiated.

Notice Requirements. Per H.B 630, signed May 8, 2007, the operator is required to provide notice to the surface owner no later than the 15th business day after the Commission issues a permit to drill. Please refer to subchapter Q Sec. 91.751-91.755 of the Texas Natural Resources Code for applicability.

Permit expiration. This permit expires two (2) years from the date of issuance shown on the original permit. The permit period will not be extended.

Drilling Permit Number. The drilling permit number shown on the permit MUST be given as a reference with any notification to the district (see below), correspondence, or application concerning this permit.

Rule 37 Exception Permits. This Statewide Rule 37 exception permit is granted under either provision Rule 37 (h)(2)(A) or 37(h)(2)(B). Be advised that a permit granted under Rule 37(h)(2)(A), notice of application, is subject to the General Rules of Practice and Procedures and if a protest is received under Section 1.3, "Filing of Documents," and/or Section 1.4, "Computation of Time," the permit may be deemed invalid.

Before Drilling

Fresh Water Sand Protection. The operator must set and cement sufficient surface casing to protect all usable-quality water, as defined by the Railroad Commission of Texas (RRC) Groundwater Advisory Unit (GWAU). Before drilling a well, the operator must obtain a letter from the Railroad Commission of Texas stating the depth to which water needs protection, Write: Railroad Commission of Texas, Groundwater Advisory Unit (GWAU), P.O. Box 12967, Austin, TX 78711-3087. File a copy of the letter with the appropriate district office.

Accessing the Well Site. If an OPERATOR, well equipment TRANSPORTER or WELL service provider must access the well site from a roadway on the state highway system (Interstate, U.S. Highway, State Highway, Farm-to-Market Road, Ranch-to-Market Road, etc.), an access permit is required from TxDOT. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

Water Transport to Well Site. If an operator intends to transport water to the well site through a temporary pipeline laid above ground on the state's right-of-way, an additional TxDOT permit is required. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

*NOTIFICATION

The operator is **REQUIRED** to notify the district office when setting surface casing, intermediate casing, and production casing, or when plugging a dry hole. The district office **MUST** also be notified if the operator intends to re-enter a plugged well or re-complete a well into a different regulatory field. Time requirements are given below. The drilling permit number **MUST** be given with such notifications.

During Drilling

Permit at Drilling Site. A copy of the Form W-1 Drilling Permit Application, the location plat, a copy of Statewide Rule 13 alternate surface casing setting depth approval from the district office, if applicable, and this drilling permit must be kept at the permitted well site throughout drilling operations.

***Notification of Setting Casing.** The operator MUST call in notification to the appropriate district office (phone number shown the on permit) a minimum of eight (8) hours prior to the setting of surface casing, intermediate casing, AND production casing. The individual giving notification MUST be able to advise the district office of the drilling permit number.

***Notification of Re-completion/Re-entry.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of eight (8) hours prior to the initiation of drilling or re-completion operations. The individual giving notification MUST be able to advise the district office of the drilling permit number.

Completion and Plugging Reports

Hydraulic Fracture Stimulation using Diesel Fuel: Most operators in Texas do not use diesel fuel in hydraulic fracturing fluids. Section 322 of the Energy Policy Act of 2005 amended the Underground Injection Control (UIC) portion of the federal Safe Drinking Water Act (42 USC 300h(d)) to define "underground Injection" to *EXCLUDE* " ...the underground injection of fluids or propping agents (*other than diesel fuels*) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities." (italic and underlining added.) Therefore, hydraulic fracturing may be subject to regulation under the federal UIC regulations if diesel fuel is injected or used as a propping agent. EPA defined "diesel fuel" using the following five (5) Chemical Abstract Service numbers: 68334-30-5 Primary Name: Fuels, diesel; 68476-34-6 Primary Name: Fuels, diesel, No. 2; 68476-30-2 Primary Name: Fuel oil No. 2; 68476-31-3 Primary Name: Fuel oil, No. 4; and 8008-20-6 Primary Name: Kerosene. As a result, an injection well permit would be required before performing hydraulic fracture stimulation using diesel fuel as defined by EPA on any well in Texas. Hydraulic fracture stimulation using diesel fuel as defined by EPA on a well in Texas without an injection well permit could result in enforcement action.

Producing Well. Statewide Rule 16 states that the operator of a well shall file with the Commission the appropriate completion report within ninety (90) days after completion of the well or within one hundred and fifty (150) days after the date on which the drilling operation is completed, whichever is earlier. Completion of the well in a field authorized by this permit voids the permit for all other fields included in the permit unless the operator indicates on the initial completion report that the well is to be a dual or multiple completion and promptly submits an application for multiple completion. All zones are required to be completed before the expiration date on the existing permit. Statewide Rule 40(d) requires that upon successful completion of a well in the same reservoir as any other well previously assigned the same acreage, proration plats and P-15s or P-16s (if required) or a lease plat and P-16 must be submitted with no double assignment of acreage unless authorized by rule.

Dry or Noncommercial Hole. Statewide Rule 14(b)(2) prohibits suspension of operations on each dry or non-commercial well without plugging unless the hole is cased and the casing is cemented in compliance with Commission rules. If properly cased, Statewide Rule 14(b)(2) requires that plugging operations must begin within a period of one (1) year after drilling or operations have ceased. Plugging operations must proceed with due diligence until completed. An extension to the one-year plugging requirement may be granted under the provisions stated in Statewide Rule 14(b)(2).

Intention to Plug. The operator must file a Form W-3A (Notice of Intention to Plug and Abandon) with the district office at least five (5) days prior to beginning plugging operations. If, however, a drilling rig is already at work on location and ready to begin plugging operations, the district director or the director's delegate may waive this requirement upon request, and verbally approve the proposed plugging procedures.

***Notification of Plugging a Dry Hole.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of four (4) hours prior to beginning plugging operations. The individual giving the notification MUST be able to advise the district office of the drilling permit number and all water protection depths for that location as stated in the Groundwater Advisory Unit letter.

DIRECT INQUIRIES TO: DRILLING PERMIT SECTION, OIL AND GAS DIVISION

PHONE
(512) 463-6751

MAIL:
PO Box 12967
Austin, Texas, 78711-2967

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER	DATE PERMIT ISSUED OR AMENDED	DISTRICT
901180	Jul 11, 2024	* 03
API NUMBER	**FORM W-1 RECEIVED**	**COUNTY**
42-245-32914	Jul 10, 2024	JEFFERSON
TYPE OF OPERATION	**WELLBORE PROFILE(S)**	**ACRES**
NEW DRILL	Vertical	454

OPERATOR 101256

EXXONMOBIL LOW C SOL ON STOR LLC

ATTN EDWARD E GRAHAM
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389

NOTICE

This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored.

District Office Telephone No:
(713) 869-5001

LEASE NAME	WELL NUMBER
BEAD FARM COMPANY	4
LOCATION	**TOTAL DEPTH**
3 miles SE direction from CHINA, TX	10000

Section, Block and/or Survey

SECTION 7 BLOCK ABSTRACT 150

SURVEY HT&B RR CO

DISTANCE TO SURVEY LINES	DISTANCE TO NEAREST LEASE LINE
522 ft. SOUTH 1434 ft. EAST	ft.
DISTANCE TO LEASE LINES	**DISTANCE TO NEAREST WELL ON LEASE**
522 ft. SOUTH 1434 ft. EAST	See FIELD(s) Below

FIELD(s) and LIMITATIONS:

* SEE FIELD DISTRICT FOR REPORTING PURPOSES *

FIELD NAME / LEASE NAME	ACRES / NEAREST LEASE	DEPTH	WELL # / NEAREST WE	DIST
WILDCAT	454.00	10,000	4	03
BEAD FARM COMPANY			0	

RESTRICTIONS: For exploratory test only

THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS

This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.

This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

SWR #13 Formation Data

JEFFERSON (245) County

Formation	Remarks	Geological Order	Effective Date
LAFAYETTE	disposal	1	12/17/2013
CAPROCK	disposal	2	12/17/2013
SPINDLETOP SALT DOME	disposal	3	12/17/2013
FANNETT SALT DOME	disposal	4	12/17/2013
BIG HILL SALT DOME	disposal	5	12/17/2013
PLEISTOCENE-LISSIE	disposal	6	12/17/2013
MIOCENE	disposal	7	12/17/2013
FRIO	disposal	8	12/17/2013
MARINULINA	disposal	9	12/17/2013
HETEROSTEGINA	disposal	10	12/17/2013

The above list may not be all inclusive, and may also include formations that do not intersect all wellbores. The listing order of the Formation information reflects the general stratigraphic order and relative geologic age. This is a dynamic list subject to updates and revisions. It is the operator's responsibility to make sure that at the time of spudding the well the most current list is being referenced. Refer to the RRC website at the following address for the most recent information.
http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info

CONFIDENTIAL BUSINESS INFORMATION

WELL LOCATION PLAT
EXXONMOBIL LOW CARBON SOLUTIONS
BEAD FARM COMPANY #4
H.T. & B. R.R. CO. SURVEY, A-150
JEFFERSON COUNTY, TEXAS

1000' 500' 0 1000'

ELS SURVEYING & MAPPING INC.
TBPELS Firm No. 10032700
21072 FM 2493 / Bullard, Texas 75757 / 903-581-7759

MARIA F. LAZARIN
A-36

JAMES GERISH SR.
A-24

BHL: ST00
MD: 8320.00
TVD: 8318.10
From Surf Location:
17.239 N
37.890 W

H.T. & B. R.R. CO. SURVEY
A-150

GRID N

H.T. & B. R.R.
CO. SURVEY
A-567

SPERRY DRILLING JOB NO. 909035812
DATE SURVEYED September 5, 2024
SURVEYED FROM 306' TO 8320'
TIE-ON COORDINATES FROM Surface
BHL AT 8383.00 FT. (MD) = 45.86 FT.
AT 330.33° * Grid
FROM SURFACE LOCATION NW
BHL ____ = TO NW LEASE LINE

Bead Farm Co.
Vol. 879, Pg. 564
D.R.J.C.T.

BEAD FARM COMPANY #4
Y=13,948,881.87'
X=3,457,457.71'
LAT.=30°01'16.84"
LONG.=-94°17'37.65"

1434' Sc.

522' Sc.

G.H. EAST SURVEY
A-823

H.T. & B. R.R.
CO. SURVEY
A-149

D.C. TURNER SURVEY
A-658

SHL	TRACT CALLS	SURVEY CALLS	ELEV.
BEAD FARM COMPANY #4	522' Sc. FSL 1434' Sc. FEL	522' Sc. FSL 1434' Sc. FEL	24.0'

STATE OF TEXAS REGISTERED
JIM G. GLASS
5262
PROFESSIONAL LAND SURVEYOR

Location is approximately
12.3 miles SW of Beaumont, Tx.
"CHINA" Quadrangle

Driving Directions:
From the Intersection of I10 and Smith Road near Cheek, TX, go Northwest on Smith Road, .8 miles turn left (West) Kidd Road. Go 1.6 miles turn right (North) on Boyt Road. Go 1.1 miles stay straight (West) on Lawhon Rd. Go 2.8 miles turn right (North) on Green Pond Gully Road Go 1.5 miles. Turn Left (Northwest). Drive on location.

DATE SURVEYED: 5/20/2024

Location is staked from tract lines as evidenced by occupation, information obtained from the Tx. R.R.C and provided deed records. Distances shown are not intended to be definitive in establishing actual title boundaries. The deed data shown hereon was furnished by others. This is not a title survey. Vesting documents may not have been provided. Bearings and distances are based on the Texas State Plane Coordinate System N.A.D. 83 (2011) (South Central Zone) derived from GPS Observations.

LEGEND
= TRACT LINE
= SURVEY LINE
= PROPOSED WELL

FOR THE EXCLUSIVE USE OF
EXXONMOBIL LOW CARBON SOLUTIONS

STATE OF TEXAS – – – COUNTY OF SMITH
I, Jim G. Glass, Registered Professional Land Surveyor, do hereby certify the above plat to be true and correct to the best of my knowledge.
Date: May 30, 2024 Bullard, Texas
E.L.S. Surveying & Mapping, Inc.

Registered Professional Land Surveyor No. 5262

Drafter: BWT/ECJ FB 2747/36-37 Job No. 430923 Map No. J-0923-LOC-MON2

CONFIDENTIAL BUSINESS INFORMATION

CHRISTI CRADDICK, CHAIRMAN
WAYNE CHRISTIAN, COMMISSIONER
JIM WRIGHT, COMMISSIONER

DANNY SORRELLS
DIRECTOR, OIL AND GAS DIVISION
PETER FISHER, P.G.
DISTRICT DIRECTOR

RAILROAD COMMISSION OF TEXAS

OIL AND GAS DIVISION

OPERATOR Name:	EXXONMOBIL LOW C SOL ON	**RE:**	**Lease:**	BEAD FARM COMPANY
Address1:	ATTN EDWARD E GRAHAM			
Address2:	22777 SPRINGWOODS VILLAGE PKWY	**Well No:**	4	
City:	SPRING	**Sec:**	7	**Block:**
State:	TX	**County:**	JEFFERSON	
		Survey Name:	HT&B RR CO	

SWR13EX Application Number: 132309 **Drilling Permit No:** 901180

SWR 13 CASING EXCEPTION APPLICATION/ALTERNATIVE REQUEST APPROVED

The Proposed Casing and Cementing Program submitted for **LEASE** BEAD FARM COMPANY ; **WELL** 4 has been approved by the Railroad Commission of Texas District Office.

a. A copy of this approved letter must be kept on location during all phases of drilling and/or plugging operations. Once approved, changes CANNOT be made to the Proposed Casing Program on the original application without additional approval from the Railroad Commission of Texas District Office.

b. Any substantive modifications to the cement program require prior approval from the Railroad Commission of Texas District Office, and may require re-submission of the SWR 13 (Statewide Rule 13) Alternate Surface Casing Application. Contact the Railroad Commission of Texas District Office for more information.

c. The tail slurry must be sufficient to fill the Zone of Critical Cement as described in Statewide Rule 13(b)(1)(H)(i). In addition, all cement slurries must be mixed on location as described in Application for Alternate Surface Casing Program.

d. The casing and cement program shall adhere to the following specifications:

Set 2350 feet of surface casing and circulate cement from the shoe to the ground surface.

IF CEMENT IS NOT CIRCULATED TO THE GROUND SURFACE AS REQUIRED BY THIS EXCEPTION, YOU MUST CONTACT THE RAILROAD COMMISSION OF TEXAS DISTRICT OFFICE IMMEDIATELY AND FOLLOW THE PROCEDURES SET OUT IN RULE 13(b)(1)(H)(iii) OR AS REQUIRED BY THE RAILROAD COMMISSION OF TEXAS DISTRICT OFFICE.

You must comply with all other provisions of SWR 13 (Statewide Rule 13) and a representative of the cementing company who performs the cementing job for the protection of usable quality water strata must sign the Form W-15 attesting to the information regarding cementing operations performed; including circulation of cement. (Note: If surface casing is set below the approved depth, this can result in denial of future Statewide Rule 13(b)(1)(H)(i) requests.) A condition of the approved drilling permit requires notification to the Railroad Commission of Texas District Office eight (8) hours prior to the time casing is to be set/cemented in the well. If your exception request was submitted after the subject well has been drilled and completed, the operator may be referred for enforcement action.

This authorization shall expire within five (5) years from the date the Groundwater Protection Determination was issued, or at the expiration of the drilling permit (if the well is not spudded prior to expiration) for the referenced well, whichever occurs first. Furthermore, this authorization supersedes any prior authorizations issued for the referenced well.

This exception is based on information provided when the application was submitted 07/18/2024 .
If any information has changed, you must contact the appropriate Railroad Commission of Texas District Office, and submit a new application if applicable. If you have questions, please contact the appropriate Oil and Gas District office.

RRC APPROVAL BY: AUDREY KUKLENZ DATE: 07/22/2024

PETER FISHER, P.G.

DISTRICT DIRECTOR

CONFIDENTIAL BUSINESS INFORMATION

ExxonMobil

22777 Springwoods Parkway
Spring, Texas 77389

To whom it may concern,

This notice is to inform that the Bead Farm Company #4 well (API# 42-245-32914), located in Jefferson County, Texas, will be converted into a monitoring well. The well has been equipped with the with the following instrumentation:

- Electric line (TEC) from surface to a well depth of 7,787 feet MD with pressure and temperature sensors installed intermittently from 3,347 feet MD to 7,787 feet MD.
- Fiber optic pressure and temperature gauge sensor at 2,475 feet MD.
- U-tube fluid sampler with casing mounted guns. The perforation interval for fluid sampling is from 2,491 feet MD to 2,501 feet MD.
- Fiber optic cable from the surface to a well depth of 8,234 feet MD.

All the above equipment was installed on the exterior of the production casing and cemented in place. There are no perforations through the casing.

Regards,

DocuSigned by:
Jonathan Rodriguez
D38AA01693BB4EE...

Jonathan Rodriguez
Completion Advisor
ExxonMobil

CONFIDENTIAL BUSINESS INFORMATION

docusign

Certificate Of Completion

Envelope Id: 28E2F290-FB72-40D0-AA8F-30274455EBC0
Status: Completed
Subject: Complete with Docusign: W2 Monitor Well Statement V2.pdf
Source Envelope:
Document Pages: 1
Signatures: 1
Envelope Originator:
Certificate Pages: 2
Initials: 0
WILLIAM Carr
AutoNav: Enabled
Address Redacted
EnvelopeId Stamping: Disabled
william.j.carr@exxonmobil.com
Time Zone: (UTC-06:00) Central Time (US & Canada)
IP Address: 136.228.238.182

Record Tracking

Status: Original
12/23/2024 2:53:49 PM
Holder: WILLIAM Carr
william.j.carr@exxonmobil.com
Location: DocuSign
Security Appliance Status: Connected
Pool: Main SecApp 1

Signer Events	Signature	Timestamp
Jonathan Rodriguez jonathan.a.rodriguez@exxonmobil.com ExxonMobil General Security Level: Email, Account Authentication (None)	DocuSigned by: Jonathan Rodriguez D38AA01693BB4EE... Signature Adoption: Pre-selected Style Using IP Address: 136.228.238.73	Sent: 12/23/2024 2:54:34 PM Viewed: 12/23/2024 2:55:37 PM Signed: 12/23/2024 2:55:47 PM

Electronic Record and Signature Disclosure:
Accepted: 7/12/2022 6:18:31 AM
ID: 24c3aed4-aea4-42d2-a30a-2d53609eb06c
Company Name: Exxon Mobil Corporation

In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp

Agent Delivery Events	Status	Timestamp

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp

Witness Events	Signature	Timestamp

Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	12/23/2024 2:54:34 PM
Certified Delivered	Security Checked	12/23/2024 2:55:37 PM
Signing Complete	Security Checked	12/23/2024 2:55:47 PM
Completed	Security Checked	12/23/2024 2:55:47 PM

Payment Events	Status	Timestamps

Electronic Record and Signature Disclosure

Electronic Record and Signature Disclosure created on: 2/24/2022 12:08:30 AM
Parties agreed to: Jonathan Rodriguez

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- I am authorized to do the specific type of work (approve, endorse, etc.) in the country where I am physically located when using DocuSign

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CONFIDENTIAL BUSINESS INFORMATION

4224502193 Broussard JE Jr-1

CONFIDENTIAL BUSINESS INFORMATION

Scout Ticket

Wed May 07, 2025

42245021930000

General Information

1 BROUSSARD J E JR

Data Source:	PI	**Country:**	UNITED STATES
API/UWI:	42245021930000	**IC:**	
State/Prov:	TEXAS	**County:**	JEFFERSON
Field:	WILDCAT	**Operator:**	GROUP OIL CO THE
Current Status:		**Current Operator:**	GROUP OIL CO THE
Reg. Well Status/Date:			
Initial Class:	NEW FIELD WILDCAT (WF)	**Final Well Class:**	NEW FIELD WILDCAT-DRY (INCLUDING TEMPORARILY ABANDONED WELL) (WF)
Final Status:	DRY & ABANDONED	**Target Objective:**	O&G
Permit:	on Jan 31, 1958 APPROVED	**Hole Direction:**	VERTICAL
First Report Date:	Feb 15, 1958	**Abandonment Date:**	
Projected TD:	9,200 FT	**Projected Formation:**	FRIO
Basin:	GULF COAST BASIN	**Formation at TD:**	UNKNOWN
		PRODFit Form at TD:	
Play Name:	SOUTH TEXAS CONVENTIONAL	**Play Type:**	CONVENTIONAL ONSHORE (CONV ONSHR)

Location

Footage NS EW Origin:	1665 FN 1063 FW TX SUR/POR/GRANT			**Data Source:**	PI
Dist, Abs, Survey:	RR DISTRICT 03 874	T&NO RR CO			
Blk, Lge, Lot, Labor:					
Township, Section:	42				
Surface Co-ord:	+3491224.9 FT +816342.61 FT			**Data Source:**	PI
Lat/Long:	+29.9960500 -94.2861200	**Lat/Long Source:**	TS	**Datum:**	NAD27

Location Narrative

Data Source	Type	Remark
PI	LEASE_UNIT	1665 FN 1063 FW
PI	DST_TOWN	4 MI SW CHINA, TX
PI	LOCATION	RESURVEYED: FTG CHGD FROM 1650 FNL 1320 FWL OF SUR
PI	SCALED_FOOT	REGULATORY
PI	LOCATION	ALTERNATE SURVEY NAME: STARK W L
PI	LOCATION	SPOTTED WITH PLAT PROPOSED LAT/LONG

Dates and Depths

Data Source:	PI		
Spud:	Feb 10, 1958	**Spud Date Code:**	A
TD:	9,050 FT	**TD Date:**	
TVD:		**PlugBack Depth:**	
Formation Code TD:	000UNKWN	**Formation Name TD:**	UNKNOWN
PRODFit Form Code TD:		**PRODFit Form Name TD:**	
Ref. Elevation:	35 FT DF	**KB. Elevation:**	
Ground Elevation:	25 FT GR	**LTD:**	9,048 FT
Contractor:			
Completed:	Feb 26, 1958	**Final Drilling:**	
Rig Release Date:		**Rig #:**	
Tool:			

Casing, Liner, Tubing

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Scout Ticket

Wed May 07, 2025

Casing	Data Source	Size	Base Depth		Cement	PRODFit Top Formation Code	PRODFit Base Formation Code
CASING	PI	10 3/4 IN	1,019	FT			

Drilling Journal

Lease Acres

Lease Acres: 600 ACRE

Participating Interests Journal

Nbr	Data Source	Remark
1	PI	PART INTERESTS- SUN F/O
2	PI	WEAVER CARNES W

Logs

Log	Data Source	Type	Top Depth	Base Depth	Logging Co.	BHT	since circ.
1	PI	EL	0	8,911	153789		
2	PI	EL	0	9,048	153789		

Dwights Energydata Narrative

Accumulated through 1997

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CONFIDENTIAL BUSINESS INFORMATION

245-02193

Please Refer to
File No

RAILROAD COMMISSION OF TEXAS
OIL AND GAS DIVISION

Form 4
Plugging Rec

FILE IN DUPLICATE WITH DEPUTY SUPERVISOR OF DISTRICT IN WHICH WELL IS LOCATED

The Company Group Oil Company - Carnes W. Weaver Address 326 Gulf Building, Houston 2, Texas

Sec No. 42 A-874 Block No. Survey W. L. Stark County Jefferson Co., Texas

Well No. 1 Name of Lease Broussard et al No. of Acres 581

Name of Field in which well is located S. China Date well was plugged Feb. 26, 1958

Form 1 (Notice of Intention to Drill) Was Filed in Name of The Group Oil Company - Carnes W. Weaver

Character of well at the time of completion Oil (Initial Production) bbls; Gas (Initial Production) Cu. Ft., Dry XXX

Amount well producing when plugged Oil bbls. Gas Cu. Ft., Water bbls

Has this well ever produced oil or gas? No

Total Depth 9050 feet. Top of each producing sand None feet

Was the well filled with mud laden fluid according to regulations of the Railroad Commission? Yes

How was mud applied? Hole was filled with 11# mud

Were plugs used? Yes If so show all shoulders left for casing, depth of each, and size of casing size and kind of plugs used and depth placed Also amount of cement and rock Was well shot? A cement plug of 150' was placed at the bottom of the surface casing 90' in the casing, 60' in the 8-3/4" open hole

SIZE PIPE	PUT IN WELL Ft	In	PULLED OUT Ft	In	LEFT IN WELL Ft	In	PACKERS AND SHOES
10-3/4	1011		-		1011		Baker Shoe

Show depth found and thickness of all water, oil and gas formations None

Have all abandoned wells on this lease been plugged according to Commissions rules? X Yes

Manner of confining all oil gas or water to strata Water sands have been cased off with 10-3/4" surface casing

The names of adjacent lease, royalty and landowners with their addresses in each instance as follows:

Sun Oil Company - San Jacinto Building - Beaumont, Texas

Was notice given before plugging to all available adjacent lease owners as required by Rule 10? Yes

I, Carnes W. Weaver being first duly sworn on oath, state that I have knowledge of the facts and the matters [illegible] the same are true and correct.

Carnes W. Weaver Title Owner

Subscribed and sworn to before me this 27th day of February, 1958

Notary Public MARY JANE CARVEL Jefferson County, Texas

RECEIVED
MAR -4
Railroad Commission of Texas
OIL & GAS DIVISION
HOUSTON, TEXAS

Correspondence regarding this well should be addressed to:

Name Carnes W. Weaver Address 326 Gulf Building, Houston 2, Texas

DR

CONFIDENTIAL BUSINESS INFORMATION

Please Refer to File No.

RAILROAD COMMISSION OF TEXAS
OIL AND GAS DIVISION

Form 24
Application To Plug and Well Record

FILE IN DUPLICATE WITH DEPUTY SUPERVISOR OF DISTRICT IN WHICH WELL IS LOCATED FIVE FULL DAYS PRIOR TO PLUGGING

Company The Group Oil Company - Carnes W. Weaver Address 326 Gulf Building, Houston 2, Texas

Rec. No. 42 A-874 Block No. ___ Survey W. L. Stark County Jefferson Co., Texas

Well No. 1 Name of Lease Broussard et al No. of Acres 581 Elev. 35 DF 25 GR

Name of Field in which well is located S. China

Located 6-1/10 Miles East Direction from None (Nearest P. O. or Town)

Form 1, "Notice of Intention to Drill," was filed in name of The Group Oil Company - Carnes W. Weaver

Drilling Commenced February 10, 1958 Drilling Completed February 26, 1958

Has this well ever produced Oil? No or Gas? No

Character of Well (Oil, Gas or Dry) - Total Depth 9050

Date you wish to Plug February 26, 1958.

Name of Party Plugging Well HOWCO Address Beaumont, Texas

Correspondence regarding this well should be sent to: Name Carnes W. Weaver

Address 326 Gulf Building, Houston 2, Texas

Initial Production of Gas: Volume (MCF) - 24 hrs. Pressure - lbs. per square inch

Initial Production of Oil: Barrels -

Give notice before Plugging to all available Lease Owners, as required by Rule (10).

When Plugging completed, file final Plugging Report, duly signed and sworn to. All necessary forms will be furnished by the Deputy Supervisor of district in which well is located.

NOTE: If no log available, so state and give all information that can be obtained to as total depth, whether or not cemented, productive formation, water sands, and as near as possible date well was drilled.

General Remarks:

RECEIVED
MAR - 4
Railroad Commission of Texas
OIL & GAS DIVISION
HOUSTON, TEXAS

...TION AND AFFIDAVIT ON REVERSE SIDE

CONFIDENTIAL BUSINESS INFORMATION

FORMATION RECORD

Show All Formations Especially All Sands and Character and Contents Thereof

Formation	From	To
Sand interbedded with sh.	1011	2700
Shale	2700	2850
Sand	2850	2900
Shale	2900	2970
Sand	2970	3000
Shale	3000	3320
Sand with shale streaks	3320	4000
Shale	4000	4200
Sand	4200	4230
Shale	4230	4310
Sand with shale streaks	4310	6100
Shale	6100	6700
Sand with shale streaks	6700	7700
Shale	7700	7870
Sand	7870	7950
Shale	7950	8030
Sand	8030	8080
Shale	8080	8290
Sand interbedded with sh.	8290	8470
Shale	8470	9050

RECEIVED
MAR - 6 1958
Railroad Commission of Texas
OIL & GAS DIVISION
AUSTIN, TEXAS

Method of shutting off water: Surface casing

Amount of water with oil: None

Is water completely shut off? Yes

per cent

I, Carnes W. Weaver being first duly sworn on oath state that I have knowledge of the facts and matter hereinabove set forth and that the same are true and correct.

Representative of Company.

Subscribed and sworn to before me this 26th day of February, 1958.

MARY JANE CAR...

Notary Public ... County, Texas.

CONFIDENTIAL BUSINESS INFORMATION

Please refer to File No.

Form 1

RAILROAD COMMISSION OF TEXAS
OIL AND GAS DIVISION

APPLICATION TO DRILL, DEEPEN OR PLUG BACK

IS THIS AN APPLICATION TO DRILL, DEEPEN OR PLUG BACK

FILE IN DUPLICATE WITH DEPUTY SUPERVISOR OF DISTRICT IN WHICH WELL IS LOCATED

READ CAREFULLY AND COMPLY FULLY

In order that it may be ascertained whether or not the proposed location covered by this notice conforms to the applicable spacing regulations set down by the Railroad Commission, there are two important footages that must be shown, that is, THE NEAREST DISTANCE OF PROPOSED LOCATION FROM LEASE OR PROPERTY LINE AND DISTANCE OF PROPOSED LOCATION FROM THE NEAREST WELL ON THE SAME LEASE. Do not begin drilling operations on any location prior to filing Form 1 and until permit granted by the Commission has been received and waiting clause period has terminated.

For the purpose of this determination draw on the back of this sheet a neat accurate sketch, made to scale of the lease, block or lot including thereon the proposed well for this location with reference to the two nearest lease lines. Also show the nearest wells on all sides of this location and the distance from the proposed location to these wells. In addition to the foregoing, the following designations must be shown for each producing well on the lease and shall include producing wells on the location herein applied for showing the name of the well assigned this well. Give names and addresses of adjoining lease or property owners and designate all property by lease and company name. You may attach a blue print showing this information if you so desire.

DO NOT CONFUSE SURVEY LINES WITH LEASE LINES. IF THE SKETCH OR BLUE PRINT SHOWS ONLY A SECTION, BLOCK, OR LOT PART OF YOUR LEASE, DESIGNATE SAME AS BEING ONLY THAT PART OF THE LEASE.

Where the size of the plat will permit, use scale of one inch equaling 1000 feet. If less than 2 acres use scale of one inch equaling 100 feet. DESIGNATE SCALE TO WHICH PLAT OR SKETCH IS DRAWN. ALSO DESIGNATE NORTHERLY DIRECTION ON THE SKETCH OR PLAT.

FILL IN BELOW IN THE SPACES RESERVED FOR THIS PURPOSE THE FOOTAGES ASKED FOR.

Nearest distance from proposed location to property or lease line: 1320 feet

Distance from proposed location to nearest drilling, completed, or applied for well on same lease: ... feet

Date: JANUARY 29 58

Name of company or operator:

Name: THE GROUP OIL CO.-CARNES W. WEAVER

Address: 326 GULF BLDG.

City: HOUSTON, TEXAS

Description of farm or lease:

Name of lease: J. R. BROUSSARD, JR. ET AL

Number of acres: 581 Well No.: 1

Number of wells on lease: NONE

Survey: W. L. STARK

Elevation: ... feet (above sea level)

Section No.: 42, AB. 874 Block No.: ...

Located in: WILDCAT (Field)

(If Wildcat state above)

JEFFERSON County

6-1/10 Miles EAST Direction from

NONE nearest postoffice of town

Rotary or Cable Tools: ROTARY

Date work will start drilling: IMMEDIATELY

Depth to which you propose to drill: 9200 feet

Date work will start deepening: ...

IF LEASE PURCHASED WITH ONE OR MORE WELLS DRILLED, FROM WHOM PURCHASED?

Name: ...

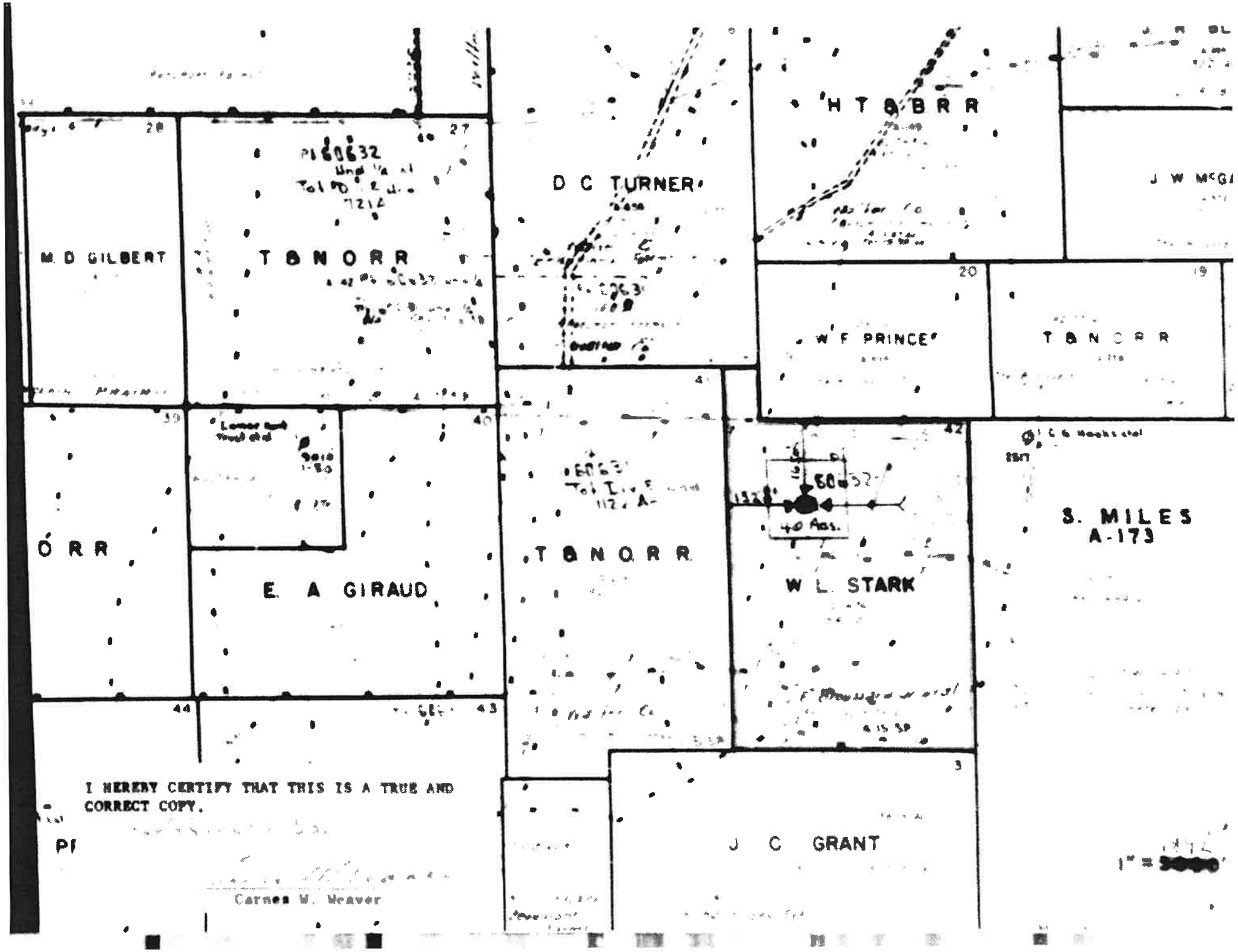
Address: ...

NOTICE: Before sending in this form be sure that you have given all information required. Much unnecessary correspondence will thus be avoided.

DRAW SKETCH AND MAKE AFFIDAVIT ON REVERSE SIDE

RECEIVED
[illegible]
Railroad Commission of Texas
OIL & GAS DIVISION
HOUSTON, TEXAS

DR



CONFIDENTIAL BUSINESS INFORMATION

CONFIDENTIAL BUSINESS INFORMATION

4224502194 Broussard J. E. Etal-1

Scout Ticket

Tue Apr 04, 2023

42245021940000

General Information

1 BROUSSARD J E

Data Source:	PI	**Country:**	UNITED STATES
API/UWI:	42245021940000	**IC:**	
State/Prov:	TEXAS	**County:**	JEFFERSON
Field:	WILDCAT	**Operator:**	HOOK CHAS ETAL
Current Status:		**Current Operator:**	HOOK CHAS ETAL
Reg. Well Status/Date:			
Initial Class:	NEW FIELD WILDCAT (WF)	**Final Well Class:**	NEW FIELD WILDCAT-DRY (INCLUDING TEMPORARILY ABANDONED WELL) (WF)
Final Status:	DRY & ABANDONED	**Target Objective:**	
Permit:	on Jan 01, 1801	**Hole Direction:**	VERTICAL
First Report Date:	Nov 15, 1910	**Abandonment Date:**	
Projected TD:		**Projected Formation:**	
Basin:	GULF COAST BASIN	**Formation at TD:**	UNKNOWN
		PRODFit Form at TD:	
Play Name:	MISC GULF COAST BASIN	**Play Type:**	CONVENTIONAL ONSHORE (CONV ONSHR)

Location

Footage NS EW Origin: **Data Source:** PI

Dist, Abs, Survey: RR DISTRICT 03 173 MILES SARAH

Blk, Lge, Lot, Labor:

Township, Section:

Lat/Long: +29.9997346 -94.2777770 **Lat/Long Source:** IH **Datum:** NAD27

Location Narrative

Data Source	Type	Remark
PI	LOCATION	350 VRS E WL 300 S NL SUR

Dates and Depths

Data Source:	PI		
Spud:	Jan 01, 1801	**Spud Date Code:**	E
TD:	2,518 FT	**TD Date:**	
TVD:		**PlugBack Depth:**	
Formation Code TD:	000UNKWN	**Formation Name TD:**	UNKNOWN
PRODFit Form Code TD:		**PRODFit Form Name TD:**	

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CONFIDENTIAL BUSINESS INFORMATION

Scout Ticket

Tue Apr 04, 2023

Ref. Elevation:		**KB. Elevation:**	
Ground Elevation:	21 FT EG	**LTD:**	
Contractor:			
Completed:	Jan 01, 1801	**Final Drilling:**	
Rig Release Date:		**Rig #:**	
Tool:			

Casing, Liner, Tubing

Narrative	Data Source	Type	Remark
	PI	CASING	NO CSG RPTD

Drilling Journal

Show

Obs	Data Source	Top Depth	Base Depth	Type	Top Form	Base Form	Sample
1	PI	2,518	2,518	WET			

Logs

Log	Data Source	Type	Top Depth	Base Depth	Logging Co.	BHT	since circ.
1	PI	EL					

Dwights Energydata Narrative

Accumulated through 1997

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CONFIDENTIAL BUSINESS INFORMATION

4224532914 Bead Farm Company 4 (In-Zone Monitoring Well)

CONFIDENTIAL BUSINESS INFORMATION

API No. 42-245-32914
Drilling Permit # 901180
SWR Exception

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

APPLICATION FOR PERMIT TO DRILL, RECOMPLETE, OR RE-ENTER

This facsimile W-1 was generated electronically from data submitted to the RRC.
A certification of the automated data is available in the RRC's Austin office.

FORM W-1 07/2004

Permit Status: Approved

1. RRC Operator No.: 101256

2. Operator's Name (as shown on form P-5, Organization Report): EXXONMOBIL LOW C SOL ON STOR LLC

3. Operator Address (include street, city, state, zip):
ATTN EDWARD E GRAHAM
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389-0000

4. Lease Name: BEAD FARM COMPANY

5. Well No.: 4

GENERAL INFORMATION

6. Purpose of filing (mark ALL appropriate boxes): [X] New Drill [ ] Recompletion [ ] Reclass [ ] Field Transfer [ ] Re-Enter [ ] Amended [ ] Amended as Drilled (BHL) (Also File Form W-1D)

7. Wellbore Profile (mark ALL appropriate boxes): [X] Vertical [ ] Horizontal (Also File Form W-1H) [ ] Directional (Also File Form W-1D) [ ] Sidetrack

8. Total Depth: 10000

9. Do you have the right to develop the minerals under any right-of-way ? [ ] Yes [X] No

10. Is this well subject to Statewide Rule 36 (hydrogen sulfide area)? [ ] Yes [X] No

SURFACE LOCATION AND ACREAGE INFORMATION

11. RRC District No.: 03

12. County: JEFFERSON

13. Surface Location [X] Land [ ] Bay/Estuary [ ] Inland Waterway [ ] Offshore

14. This well is to be located 3 miles in a SE direction from China, TX which is the nearest town in the county of the well site.

15. Section: 7

16. Block:

17. Survey: HT&B RR CO

18. Abstract No.: A-150

19. Distance to nearest lease line: ft.

20. Number of contiguous acres in lease, pooled unit, or unitized tract: 454

21. Lease Perpendiculars: 522 ft from the SOUTH line and 1434 ft from the EAST line.

22. Survey Perpendiculars: 522 ft from the SOUTH line and 1434 ft from the EAST line.

23. Is this a pooled unit? [ ] Yes [X] No

24. Unitization Docket No:

25. Are you applying for Substandard Acreage Field? [ ] Yes (attach Form W-1A) [X] No

FIELD INFORMATION List all fields of anticipated completion including Wildcat. List one zone per line.

26. RRC District No.	27. Field No.	28. Field Name (exactly as shown in RRC records)	29. Well Type	30. Completion Depth	31. Distance to Nearest Well in this Reservoir	32. Number of Wells on this lease in this Reservoir
03	00006001	WILDCAT	Exploratory Test Well	10000	0.00	1

BOTTOMHOLE LOCATION INFORMATION is required for DIRECTIONAL, HORIZONTAL, AND AMENDED AS DRILLED PERMIT APPLICATIONS

Remarks

Certificate:

I certify that information stated in this application is true and complete, to the best of my knowledge.

Josh Calkin — Name of filer
Jul 10, 2024 — Date submitted

(281)702-5537 — Phone
Josh.Calkin@erm.com — E-mail Address (OPTIONAL)

RRC Use Only Data Validation Time Stamp: Mar 26, 2025 1:05 PM(Current Version)

CONFIDENTIAL BUSINESS INFORMATION

Railroad Commission of Texas

PERMIT TO DRILL, RE-COMPLETE, OR RE-ENTER ON REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

CONDITIONS AND INSTRUCTIONS

Permit Invalidation. It is the operator's responsibility to make sure that the permitted location complies with Commission density and spacing rules in effect on the spud date. The permit becomes invalid automatically if, because of a field rule change or the drilling of another well, the stated location is not in compliance with Commission field rules on the spud date. If this occurs, application for an exception to Statewide Rules 37 and 38 must be made and a special permit granted prior to spudding. Failure to do so may result in an allowable not being assigned and/or enforcement procedures being initiated.

Notice Requirements. Per H.B 630, signed May 8, 2007, the operator is required to provide notice to the surface owner no later than the 15th business day after the Commission issues a permit to drill. Please refer to subchapter Q Sec. 91.751-91.755 of the Texas Natural Resources Code for applicability.

Permit expiration. This permit expires two (2) years from the date of issuance shown on the original permit. The permit period will not be extended.

Drilling Permit Number. The drilling permit number shown on the permit MUST be given as a reference with any notification to the district (see below), correspondence, or application concerning this permit.

Rule 37 Exception Permits. This Statewide Rule 37 exception permit is granted under either provision Rule 37 (h)(2)(A) or 37(h)(2)(B). Be advised that a permit granted under Rule 37(h)(2)(A), notice of application, is subject to the General Rules of Practice and Procedures and if a protest is received under Section 1.3, "Filing of Documents," and/or Section 1.4, "Computation of Time," the permit may be deemed invalid.

Before Drilling

Fresh Water Sand Protection. The operator must set and cement sufficient surface casing to protect all usable-quality water, as defined by the Railroad Commission of Texas (RRC) Groundwater Advisory Unit (GWAU). Before drilling a well, the operator must obtain a letter from the Railroad Commission of Texas stating the depth to which water needs protection, Write: Railroad Commission of Texas, Groundwater Advisory Unit (GWAU), P.O. Box 12967, Austin, TX 78711-3087. File a copy of the letter with the appropriate district office.

Accessing the Well Site. If an OPERATOR, well equipment TRANSPORTER or WELL service provider must access the well site from a roadway on the state highway system (Interstate, U.S. Highway, State Highway, Farm-to-Market Road, Ranch-to-Market Road, etc.), an access permit is required from TxDOT. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

Water Transport to Well Site. If an operator intends to transport water to the well site through a temporary pipeline laid above ground on the state's right-of-way, an additional TxDOT permit is required. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

*NOTIFICATION

The operator is **REQUIRED** to notify the district office when setting surface casing, intermediate casing, and production casing, or when plugging a dry hole. The district office **MUST** also be notified if the operator intends to re-enter a plugged well or re-complete a well into a different regulatory field. Time requirements are given below. The drilling permit number **MUST** be given with such notifications.

During Drilling

Permit at Drilling Site. A copy of the Form W-1 Drilling Permit Application, the location plat, a copy of Statewide Rule 13 alternate surface casing setting depth approval from the district office, if applicable, and this drilling permit must be kept at the permitted well site throughout drilling operations.

***Notification of Setting Casing.** The operator MUST call in notification to the appropriate district office (phone number shown the on permit) a minimum of eight (8) hours prior to the setting of surface casing, intermediate casing, AND production casing. The individual giving notification MUST be able to advise the district office of the drilling permit number.

***Notification of Re-completion/Re-entry.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of eight (8) hours prior to the initiation of drilling or re-completion operations. The individual giving notification MUST be able to advise the district office of the drilling permit number.

Completion and Plugging Reports

Hydraulic Fracture Stimulation using Diesel Fuel: Most operators in Texas do not use diesel fuel in hydraulic fracturing fluids. Section 322 of the Energy Policy Act of 2005 amended the Underground Injection Control (UIC) portion of the federal Safe Drinking Water Act (42 USC 300h(d)) to define "underground Injection" to *EXCLUDE* " ...the underground injection of fluids or propping agents (*other than diesel fuels*) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities." (italic and underlining added.) Therefore, hydraulic fracturing may be subject to regulation under the federal UIC regulations if diesel fuel is injected or used as a propping agent. EPA defined "diesel fuel" using the following five (5) Chemical Abstract Service numbers: 68334-30-5 Primary Name: Fuels, diesel; 68476-34-6 Primary Name: Fuels, diesel, No. 2; 68476-30-2 Primary Name: Fuel oil No. 2; 68476-31-3 Primary Name: Fuel oil, No. 4; and 8008-20-6 Primary Name: Kerosene. As a result, an injection well permit would be required before performing hydraulic fracture stimulation using diesel fuel as defined by EPA on any well in Texas. Hydraulic fracture stimulation using diesel fuel as defined by EPA on a well in Texas without an injection well permit could result in enforcement action.

Producing Well. Statewide Rule 16 states that the operator of a well shall file with the Commission the appropriate completion report within ninety (90) days after completion of the well or within one hundred and fifty (150) days after the date on which the drilling operation is completed, whichever is earlier. Completion of the well in a field authorized by this permit voids the permit for all other fields included in the permit unless the operator indicates on the initial completion report that the well is to be a dual or multiple completion and promptly submits an application for multiple completion. All zones are required to be completed before the expiration date on the existing permit. Statewide Rule 40(d) requires that upon successful completion of a well in the same reservoir as any other well previously assigned the same acreage, proration plats and P-15s or P-16s (if required) or a lease plat and P-16 must be submitted with no double assignment of acreage unless authorized by rule.

Dry or Noncommercial Hole. Statewide Rule 14(b)(2) prohibits suspension of operations on each dry or non-commercial well without plugging unless the hole is cased and the casing is cemented in compliance with Commission rules. If properly cased, Statewide Rule 14(b)(2) requires that plugging operations must begin within a period of one (1) year after drilling or operations have ceased. Plugging operations must proceed with due diligence until completed. An extension to the one-year plugging requirement may be granted under the provisions stated in Statewide Rule 14(b)(2).

Intention to Plug. The operator must file a Form W-3A (Notice of Intention to Plug and Abandon) with the district office at least five (5) days prior to beginning plugging operations. If, however, a drilling rig is already at work on location and ready to begin plugging operations, the district director or the director's delegate may waive this requirement upon request, and verbally approve the proposed plugging procedures.

***Notification of Plugging a Dry Hole.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of four (4) hours prior to beginning plugging operations. The individual giving the notification MUST be able to advise the district office of the drilling permit number and all water protection depths for that location as stated in the Groundwater Advisory Unit letter.

DIRECT INQUIRIES TO: DRILLING PERMIT SECTION, OIL AND GAS DIVISION

PHONE
(512) 463-6751

MAIL:
PO Box 12967
Austin, Texas, 78711-2967

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER	DATE PERMIT ISSUED OR AMENDED	DISTRICT
901180	Jul 11, 2024	* 03
API NUMBER	FORM W-1 RECEIVED	COUNTY
42-245-32914	Jul 10, 2024	JEFFERSON
TYPE OF OPERATION	WELLBORE PROFILE(S)	ACRES
NEW DRILL	Vertical	454

OPERATOR 101256

EXXONMOBIL LOW C SOL ON STOR LLC

ATTN EDWARD E GRAHAM
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389-0000

NOTICE
This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored.
District Office Telephone No:
(713) 869-5001

LEASE NAME	WELL NUMBER
BEAD FARM COMPANY	4
LOCATION	TOTAL DEPTH
3 miles SE direction from CHINA, TX	10000

Section, Block and/or Survey

SECTION 7 BLOCK ABSTRACT 150

SURVEY HT&B RR CO

DISTANCE TO SURVEY LINES	DISTANCE TO NEAREST LEASE LINE
522 ft. SOUTH 1434 ft. EAST	ft.
DISTANCE TO LEASE LINES	DISTANCE TO NEAREST WELL ON LEASE
522 ft. SOUTH 1434 ft. EAST	See FIELD(s) Below

FIELD(s) and LIMITATIONS:

* SEE FIELD DISTRICT FOR REPORTING PURPOSES *

FIELD NAME / LEASE NAME	ACRES / NEAREST LEASE	DEPTH	WELL # / NEAREST WE	DIST
WILDCAT	454.00	10,000	4	03
BEAD FARM COMPANY			0	

RESTRICTIONS: For exploratory test only

THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS

This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.

This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

SWR #13 Formation Data

JEFFERSON (245) County

Formation	Remarks	Geological Order	Effective Date
LAFAYETTE	disposal	1	12/17/2013
CAPROCK	disposal	2	12/17/2013
SPINDLETOP SALT DOME	disposal	3	12/17/2013
FANNETT SALT DOME	disposal	4	12/17/2013
BIG HILL SALT DOME	disposal	5	12/17/2013
PLEISTOCENE-LISSIE	disposal	6	12/17/2013
MIOCENE	disposal	7	12/17/2013
FRIO	disposal	8	12/17/2013
MARINULINA	disposal	9	12/17/2013
HETEROSTEGINA	disposal	10	12/17/2013

The above list may not be all inclusive, and may also include formations that do not intersect all wellbores. The listing order of the Formation information reflects the general stratigraphic order and relative geologic age. This is a dynamic list subject to updates and revisions. It is the operator's responsibility to make sure that at the time of spudding the well the most current list is being referenced. Refer to the RRC website at the following address for the most recent information.
http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info

CONFIDENTIAL BUSINESS INFORMATION

GROUNDWATER PROTECTION DETERMINATION

Form GW-2

Groundwater Advisory Unit

Date Issued:	27 June 2024	**GAU Number:**	382934

Attention:	EXXONMOBIL LOW C SOL ON ATTN EDWARD E GRAHAM SPRING, TX 77389	**API Number:**	
		County:	JEFFERSON
		Lease Name:	Bead Farm Company
		Lease Number:	
Operator No.:	101256	**Well Number:**	
		Total Vertical	10000
		Latitude:	30.021130
		Longitude:	-94.293605
		Datum:	NAD27

Purpose: Test Well

Location: Survey-HT&B RR CO; Abstract-150; Section-7

To protect usable-quality groundwater at this location, the Groundwater Advisory Unit of the Railroad Commission of Texas recommends:

Usable-quality water occurs from the land surface to a depth of 1,100 feet. Moreover, the interval from the land surface to a depth of 700 feet contains water of superior quality which must be isolated from water in underlying beds.

This recommendation is applicable to all wells within a radius of 2,000 feet of this location.

Note: Unless stated otherwise, this recommendation is intended to apply to all wells drilled within 200 feet of the subject well. Unless stated otherwise, this recommendation is for normal drilling, production, and plugging operations only.

This determination is based on information provided when the application was submitted on 06/27/2024. If the location information has changed, you must contact the Groundwater Advisory Unit, and submit a new application if necessary. If you have questions, please contact us at 512-463-2741 or gau@rrc.texas.gov.

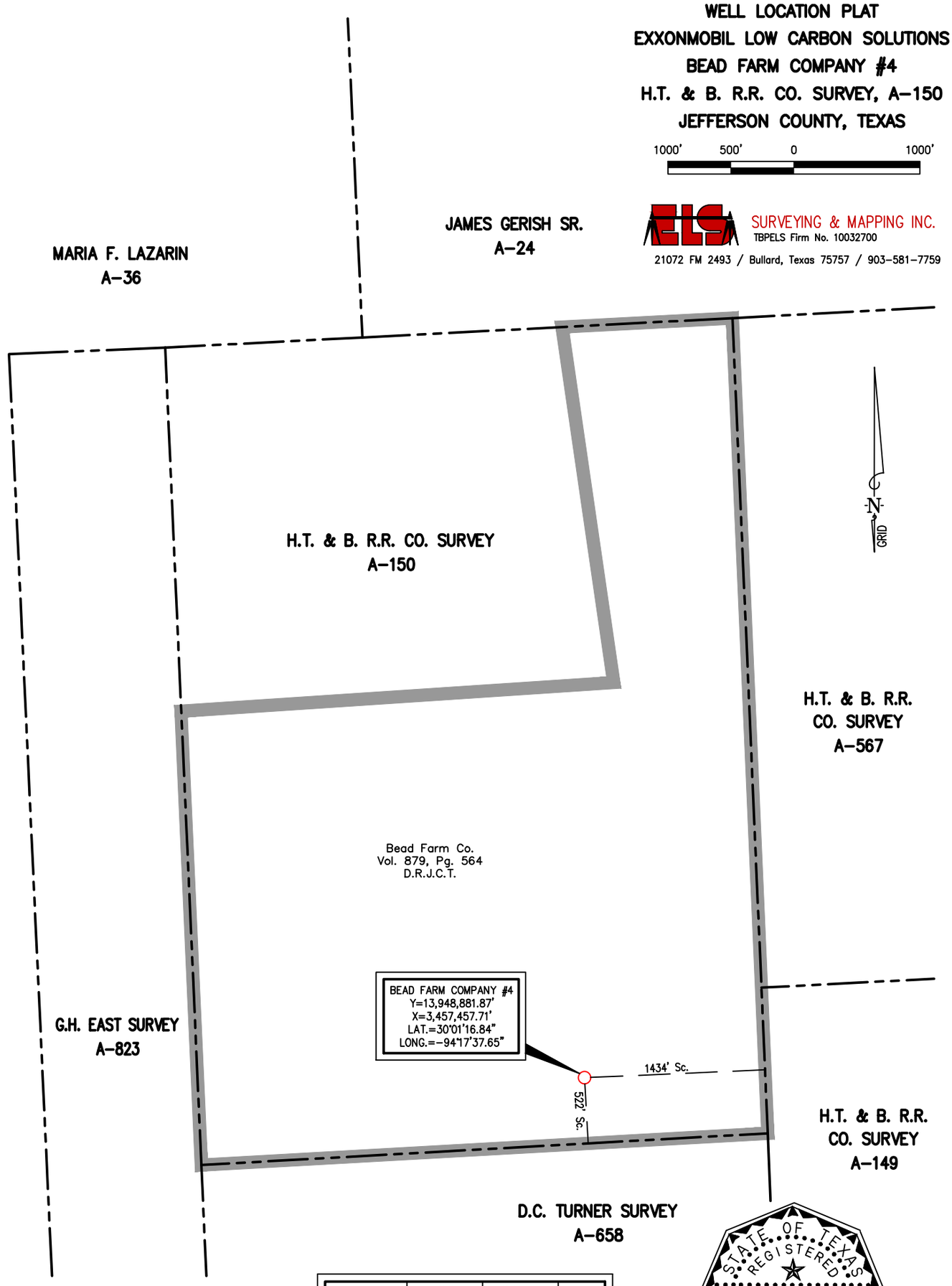
Groundwater Advisory Unit, Oil and Gas Division

CONFIDENTIAL BUSINESS INFORMATION

WELL LOCATION PLAT
EXXONMOBIL LOW CARBON SOLUTIONS
BEAD FARM COMPANY #4
H.T. & B. R.R. CO. SURVEY, A-150
JEFFERSON COUNTY, TEXAS

1000' 500' 0 1000'

ELS SURVEYING & MAPPING INC.
TBPELS Firm No. 10032700
21072 FM 2493 / Bullard, Texas 75757 / 903-581-7759



SHL	TRACT CALLS	SURVEY CALLS	ELEV.
BEAD FARM COMPANY #4	522' Sc. FSL 1434' Sc. FEL	522' Sc. FSL 1434' Sc. FEL	24.0'

Location is approximately
12.3 miles SW of Beaumont, Tx.
"CHINA" Quadrangle

Driving Directions:
From the Intersection of I10 and Smith Road near Cheek, TX, go Northwest on Smith Road, .8 miles turn left (West) Kidd Road. Go 1.6 miles turn right (North) on Boyt Road. Go 1.1 miles stay straight (West) on Lawhon Rd. Go 2.8 miles turn right (North) on Green Pond Gully Road Go 1.5 miles. Turn Left (Northwest). Drive on location.

DATE SURVEYED: 5/20/2024

Location is staked from tract lines as evidenced by occupation, information obtained from the Tx. R.R.C and provided deed records. Distances shown are not intended to be definitive in establishing actual title boundaries. The deed data shown hereon was furnished by others. This is not a title survey. Vesting documents may not have been provided. Bearings and distances are based on the Texas State Plane Coordinate System N.A.D. 83 (2011) (South Central Zone) derived from GPS Observations.

LEGEND
= TRACT LINE
= SURVEY LINE
= PROPOSED WELL

STATE OF TEXAS REGISTERED
JIM G. GLASS
5262
PROFESSIONAL LAND SURVEYOR

FOR THE EXCLUSIVE USE OF
EXXONMOBIL LOW CARBON SOLUTIONS

STATE OF TEXAS – – – COUNTY OF SMITH
I, Jim G. Glass, Registered Professional Land Surveyor, do hereby certify the above plat to be true and correct to the best of my knowledge.
Date: May 30, 2024 Bullard, Texas
E.L.S. Surveying & Mapping, Inc.

Registered Professional Land Surveyor No. 5262

Drafter: BWT/ECJ FB 2747/36-37 Job No. 430923 Map No. J-0923-LOC-MON2

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

Form W-2

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

Status: Approved
Date: 01/30/2025
Tracking No.: 326182

OIL WELL POTENTIAL TEST, COMPLETION OR RECOMPLETION REPORT,

OPERATOR INFORMATION

Operator EXXONMOBIL LOW C SOL ON STOR LLC **Operator** 101256
Operator ATTN EDWARD E GRAHAM 22777 SPRINGWOODS VILLAGE PKWY SPRING, TX 77389-0000

WELL INFORMATION

API 42-245-32914 **County:** JEFFERSON
Well No.: 4 **RRC District** 03
Lease BEAD FARM COMPANY **Field** WILDCAT
RRC Lease 28194 **Field No.:** 00006001
Location Section: 7, Block: , Survey: HT&B RR CO, Abstract: 150

Latitude 30 **Longitud** -94
This well is 3 **miles in a** SE
direction from CHINA, TX,
which is the nearest town in the

FILING INFORMATION

Purpose of Well Record Only
Type of New Well
Well Type: Shut-In Producer **Completion or Recompletion** 10/07/2024

Type of Permit	Date	Permit No.
Permit to Drill, Plug Back, or	07/11/2024	901180
Rule 37 Exception		
Fluid Injection		
O&G Waste Disposal		
Other:		

COMPLETION INFORMATION

Spud 09/01/2024 **Date of first production after rig** 10/07/2024
Date plug back, deepening, drilling operation 09/01/2024 **Date plug back, deepening, recompletion, drilling operation** 10/07/2024
Number of producing wells on this lease this field (reservoir) including this 0 **Distance to nearest well in lease & reservoir** 0.0
Total number of acres in 454.00 **Elevation** 24 GL
Total depth TVD 8383 **Total depth MD**
Plug back depth TVD 8283 **Plug back depth MD**
Was directional survey made other inclination (Form W- No **Rotation time within surface casing Is Cementing Affidavit (Form W-15)** 25.8 Yes
Recompletion or No **Multiple** No
Type(s) of electric or other log(s) Gamma Ray (MWD)
Electric Log Other Description:
Location of well, relative to nearest lease of lease on which this well is 522.0 **Feet from the** South **Line and** 1434.0 **Feet from the** East **Line of the** BEAD FARM COMPANY **Lease.** **Off Lease :** No

FORMER FIELD (WITH RESERVOIR) & GAS ID OR OIL LEASE NO.

Field & Reservoir	Gas ID or Oil Lease	Well No.	Prior Service Type

PACKET: N/A

W2: N/A

FOR NEW DRILL OR RE-ENTRY, SURFACE CASING DEPTH DETERMINED BY:

GAU Groundwater Protection Determination		**Depth**	1100.0	**Date**	06/27/2024
SWR 13 Exception		**Depth**	2350.0		

INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION

Date of		**Production**	
Number of hours	24	**Choke**	
Was swab used during this	No	**Oil produced prior to**	

PRODUCTION DURING TEST PERIOD:

Oil		**Gas**	
Gas - Oil	0	**Flowing Tubing**	
Water			

CALCULATED 24-HOUR RATE

Oil		**Gas**	
Oil Gravity - API - 60.:		**Casing**	
Water			

CASING RECORD

Ro	Type of Casing	Casing Size (in.)	Hole Size	Setting Depth	Multi - Stage Tool	Multi - Stage Shoe	Cement Class	Cement Amoun	Slurry Volume (cu.	Top of Cement (ft.)	TOC Determined By
1	Surface	9 5/8	12 1/4	2184			H	548	1108.0	0	Circulated to Surface
2	Conventional Production	5 1/2	8 1/2	8367			H	1360	2573.5	0	Circulated to Surface

LINER RECORD

Ro	Liner Size	Hole Size	Liner Top	Liner Bottom	Cement Class	Cement Amoun	Slurry Volume (cu.	Top of Cement (ft.)	TOC Determined

N/A

TUBING RECORD

Ro	Size (in.)	Depth Size (ft.)	Packer Depth (ft.)/Type
			/

N/A

PRODUCING/INJECTION/DISPOSAL INTERVAL

Ro	Open hole?	From (ft.)	To (ft.)
1	No	L 2491	2501.0

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC.

Was hydraulic fracturing treatment No

Is well equipped with a downhole sleeve? No

If yes, actuation pressure

Production casing test pressure (PSIG)

Actual maximum pressure (PSIG) during hydraulic fracturing

fracturin

Has the hydraulic fracturing fluid disclosure been No

Ro	Type of Operation	Amount and Kind of Material Used	Depth Interval (ft.)

N/A

FORMATION RECORD

Formations	Encountere	Depth TVD	Depth MD	Is formation	Remarks
LAFAYETTE - DISPOSAL	No			No	
CAPROCK - DISPOSAL	No			No	
SPINDLETOP SALT DOME - DISPOSAL	No			No	
FANNETT SALT DOME - DISPOSAL	No			No	
BIG HILL SALT DOME - DISPOSAL	No			No	
PLEISTOCENE-LISSIE - DISPOSAL	No			No	
MIOCENE - DISPOSAL	Yes	3436.0	3437.0	Yes	LOGGED
FRIO - DISPOSAL	Yes	6331.0	6332.0	Yes	LOGGED
MARINULINA - DISPOSAL	No			No	
HETEROSTEGINA - DISPOSAL	Yes	6030.0	6091.0	Yes	LOGGED

Do the producing interval of this well produce H2S with a concentration in excess of 100 ppm No

Is the completion being downhole commingled No

REMARKS

THE WELL WAS SHUT-IN. THIS WELL HAS NOT PRODUCED.

RRC REMARKS

PUBLIC COMMENTS:

CASING RECORD :

CEMENT PUMPING WAS NOT REQUIRED TO SET THE CONDUCTOR CASING, AS THE CONDUCTOR WAS SUCCESSFULLY SET WITHOUT THE USE OF MUD. THE WELL WAS COMPLETED WITHOUT PUMPING OR MUD CIRCULATION. CLASS A 4000 PSI CEMENT, COMBINED WITH 5/8-INCH PEA GRAVEL AND MANUFACTURED SAND, WAS POURED DOWN THE BACKSIDE TO SECURE THE CONDUCTOR.

TUBING RECORD:

PURPOSE OF WELL TO MONITOR PRESSURE AND FLUID TRENDS. U-TUBE SAMPLER, FIBER AND TEC LINE MOUNTED ON BACKSIDE OF CASING.

PRODUCING/INJECTION/DISPOSAL INTERVAL :

U-TUBE FLUID SAMPLER WITH CASING MOUNTED GUNS ON THE BACKSIDE OF THE CASING. FLUID SAMPLING INTERVAL IS FROM 2,491 FEET MD TO 2,501 FEET MD.

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC. :

POTENTIAL TEST DATA:

OPERATOR'S CERTIFICATION

Printed	Josh Calkin	**Title:**	
Telephone	(281) 702-5537	**Date**	01/09/2025

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name: ExxonMobil Low Carbon Solutions	**Operator P-5 No.:** 101256
Cementer Name: Halliburton	**Cementer P-5 No.:** 347151

WELL INFORMATION

District No.: 3	**County:** Jefferson	
Well No.: Bead Farm Company #4	**API No.:** 42-245-32914	**Drilling Permit No.:** 901180
Lease Name: Bead Farm Company #4	**Lease No.:**	
Field Name: Wildcat	**Field No.:**	

I. CASING CEMENTING DATA

Type of casing: ☐ Conductor ☒ Surface ☐ Intermediate ☐ Liner ☐ Production

Drilled hole size (in.): 12-1/4"	**Depth of drilled hole (ft.):** 2,199'	**Est. % wash-out or hole enlargement:** 10%
Size of casing in O.D. (in.): 9-5/8"	**Casing weight (lbs/ft) and grade:**	**No. of centralizers used:**
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☒ NO **If no for surface casing, explain in Remarks.**	**Setting depth shoe (ft.):** 2,184'	**Top of liner (ft.):** / **Setting depth liner (ft.):**
Hrs. waiting on cement before drill-out:	**Calculated top of cement (ft.):**	**Cementing date:** September 2, 2024

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	372.02	A	See Remarks	883.74	~~484~~ 1,780
2	175.85	~~X~~ H	See Remarks	224.30	1,~~780~~ 404
3					
Total	547.87			1,108.04	2,184

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	**Depth of drilled hole (ft.):**	**Est. % wash-out or hole enlargement:**
Size of casing in O.D. (in.):	**Casing weight (lbs/ft) and grade:**	**No. of centralizers used:**
Tapered string drilled hole size (in.) Upper: Lower:	**Tapered string depth of drilled hole (ft.)** Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	**Tapered string casing weight(lbs/ft) and grade** Upper: Lower:	**Tapered string no. of centralizers used** Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		**Setting depth shoe (ft.):**
Hrs. waiting on cement before drill-out:	**Calculated top of cement (ft.):**	**Cementing date:**

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	**Depth of drilled hole (ft.):**	**Est. % wash-out or hole enlargement:**
Size of casing in O.D. (in.):	**Casing weight (lbs/ft) and grade:**	**No. of centralizers used:**
Tapered string drilled hole size (in.) Upper: Lower:	**Tapered string depth of drilled hole (ft.)** Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	**Tapered string casing weight(lbs/ft) and grade** Upper: Lower:	**Tapered string no. of centralizers used** Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		**Setting depth tool (ft.):**
Hrs. waiting on cement before drill-out:	**Calculated top of cement (ft.):**	**Cementing date:**

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS

Primary surface cement job confirmed TOC @ 120' (via temp log and CBL conducted within 24 hrs). Top-off job perfomed with cement returns to surface. (DP 901180)

EXXONMOBIL LOW CARBON-EBUS, Bead Farm Company #4, Surface: SLURRY 1: ExtendaCem , SLURRY 2: HALCem

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

Name and title of cementer's representative	Cementing Company	Signature
Cole Folsom SERVICE Leader	Halliburton	

Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.
4920 Industrial Dr	Bossier City LA 71111	701-421-3299	9/2/24

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

Typed or printed name of operator's representative	Title	Signature
James Harvey	Operations Supervisor	James Harvey

Address	City,	State,	Zip Code	Tel: Area Code	Number	Date: mo. day yr.
22777 Springwoods Village Parkway	Spring	TX	77389	9189164340		9/2/2024

Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

A. **What to file:** An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on one form.

The Form W-15 should be filed with the Form W-3, Plugging Record, unless the Form W-3 is signed by the cementing company representative. When reporting dry holes, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.

B. **How to file:** An oil and gas completion report and Form W-15 may be filed online using the Commission's Online System (https://webapps.rrc.texas.gov/security/login.do) or a paper copy of the form may be mailed to the Commission in Austin (P.O. Box 12967, Austin, Texas 78711-2967).

C. **Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.

To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 (http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.

D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing **and** Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

Form W-15
Rev. 08/2014

CEMENTING REPORT

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name: Exxon Mobil low Carbon Solutions	Operator P-5 No.:
Cementer Name: Halliburton	Cementer P-5 No.: 347151

WELL INFORMATION

District No.: 03	County: Jefferson
Well No.: B 4	API No.: 42-245-32914 Drilling Permit No.: 901180
Lease Name: Bead Farm Company	Lease No.:
Field Name: Wildcat	Field No.:

I. CASING CEMENTING DATA

Type of casing: ☐ Conductor ☐ Surface ☐ Intermediate ☐ Liner ☑ Production

Drilled hole size (in.): 8 1/2	Depth of drilled hole (ft.): 8383	Est. % wash-out or hole enlargement: 10%
Size of casing in O.D. (in.): 5 1/2	Casing weight (lbs/ft) and grade: ~~23~~ 20, 13CR	No. of centralizers used: 188
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☑ YES ☐ NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 8367	Top of liner (ft.):
		Setting depth liner (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date: 9/8/2024

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	505	H	SEE RAMARKS	921.62	1323
2	855	H	SEE REMARKS	1651.86	7047
3					
Total	1360			2573.48	8370

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth shoe (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth tool (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS

EXXONMOBIL CORPORATION-EBUS,BEAD FARM CO,4,PRODUCTION:
SLURRY 1:CorossaCem , SLURRY 2:CorossaLOCK

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

ZOUHIR ROUBACHE	Halliburton		
Name and title of cementer's representative	Cementing Company	Signature	
4720 Industrial	Bossier City, LA 71112	903-986-5096	9/8/2024
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

James Harvey	Operations Supervisor		
Typed or printed name of operator's representative	Title	Signature	
22777 Springwood Village	Spring, TX 77389	512 949 8272	9/10/24
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

Instructions for Form W-15, Cementing Report

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D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing **and** Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON | Sperry Drilling

DGR / DIR

Powered by INSITE™

1 : 500

MD Detail Log

Country : USA
Field : WILDCAT
Location : Lat: 30° 1' 16.85" North Long: 94° 17' 37.65" West
Well : BEAD FARM COMPANY 4
Company : EXXONMOBIL LOW C SOL ON STOR LL
Rig : NABORS X33

Company	:	EXXONMOBIL LOW C SOL ON STOR LL
Rig	:	NABORS X33
Well	:	BEAD FARM COMPANY 4
Field	:	WILDCAT
Country	:	USA
API Number	:	4224532914

LOCATION

Latitude : 30° 1' 16.85" North
Longitude : 94° 17' 37.65" West

UTM X = 3,457,457.710 usft
UTM Y = 13,948,881.870 usft

Other Services

Permanent Datum : Ground Level
Elevation : 27.90 ft
Log Measured From : Drill Floor
32.52 ft Above Permanent Datum
Drilling Measured From : Drill Floor

MD LOG

Elev. KB
DF 60.42 ft
GL 27.90 ft
WD

Depth Logged : 152.50 ft To 8,383.00 ft
Date Logged : 01-Sep-24 To 05-Sep-24
Total Depth MD : 8,383.00 ft TVD : 8,381.10 ft
Spud Date : 01-Sep-24

Unit No. : N/A
Job No. : LF-XX-0909035812
Plot Type : Final
Plot Date : 20-Sep-24

Run No.	Borehole Record (MD)			Size	Casing Record (MD)		
	Size	From	To		Weight	From	To
100	12.250 in	152.50 ft	2,199.00 ft	20.000 in	78.60 lbpf	SURFACE	152.50 ft
200	8.500 in	2,199.00 ft	8,383.00 ft	9.625 in	40.00 lbpf	SURFACE	2,183.00 ft

WELL INFORMATION

MWD Run Number	100	200			
Date run completed	01-Sep-24	05-Sep-24			
Rig Bit Number	100	200			
Bit Size (in)	12.250	8.500			
Tool Nominal OD (in)	8.150	6.750			
Log Start Depth (MD, ft)	152.50	2,199.00			
Log End Depth (MD, ft)	2,199.00	8,383.00			
Drill or Wipe	Drill	Drill			
Drill/Wipe Start Date and Time	01-Sep-24 02:40	04-Sep-24 01:10			
Drill/Wipe End Date and Time	01-Sep-24 13:26	05-Sep-24 05:17			
Min Inc (deg) @ Depth (MD, ft)	0.18 @ 1,432.00	0.62 @ 2,928.00			
Max Inc (deg) @ Depth (MD, ft)	1.28 @ 1,717.00	2.38 @ 7,271.00			
Bit TFA(in2) / Bit Type	1.23 / HD65s	1.05 / HD65s			
Flow Rate (gpm)	700.00	600.00			
Max AV (fpm) / CV (fpm) @ MWD	80.0 / 46.0	171.0 / 350.0			
Fluid Type	Diesel Mud Base	Diesel Mud Base			
Density (ppg) / Viscosity (spqt)	9.30 / 32.00	10.25 / 67.00			
Filtrate CL (ppm)	1,300.00	57,000.00			
pH / API Filtrate (mptm)	8.10 / 8	N/A / 2			
PV (cP) / YP (lhf2)	4 / 4.00	22 / 29.00			
% Solids / % Sand	5.9 / 0	10.7 / 0			
% Oil / Oil:Water Ratio	0 / 0:100	56 / 65:35			
Rm @ Measured Temp (degF)	0.200 @ 87.00	N/A @ N/A			
Rmf @ Measured Temp (degF)	0.200 @ 87.00	N/A @ N/A			
Rmc @ Measured Temp (degF)	0.200 @ 87.00	N/A @ N/A			
Max Tool Temp (degF) / Source	113.18 / HCIM	173.18 / HCIM			
Rm @ Max Tool Temp (degF)	N/A @ 113.18	N/A @ 173.18			
Lead MWD Engineer	Daniel Nalin	Daniel Nalin			
Customer Representative	N/A	N/A			

SENSOR INFORMATION

Downhole Processor Information

Tool Type	HCIM	HCIM			
Software Version	98.43	98.43			
Sub Serial Number	11432374	13172015			
Insert Serial Number	11753209	250429			
Date and Time Initialized	31-Aug-24 18:21	03-Sep-24 17:42			
Date and Time Read	01-Sep-24 19:40	05-Sep-24 18:56			
ECMB SW Version	N/A	N/A			

Directional Sensor Information

Tool Type	PCDC	PCDC			
Distance From Bit (ft)	19.63	58.07			
Software Version	6.43	6.43			
Sub Serial Number	11233637	11112526			
Sonde Serial Number	11902241	11902011			
Sensor ID Number	N/A	N/A			
Toolface Offset (deg)	0.00	310.00			

Gamma Ray Sensor Information

Tool Type	DGR	DGR			
Distance From Bit (ft)	9.58	46.35			
Recorded Sample Period (sec)	4	4			
Software Version	N/A	N/A			
Sub Serial Number	11654485	12444096			
Insert/Sonde Serial Number	11671533	263646			

REMARKS

All depths are referenced to the driller's pipe tally.

DGXT - Gamma Ray formation exposure time

Default 1:500 Log Smoothing:
Interval Resolution: 0.5ft
Window Interval:(+/-) 0.6ft
Gap Fill: 3.0ft

Archive Name: BEAD_FARM_COMPANY_4_500MD_DETAIL_152_8383

Plot Width: 8.25 in

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
Oil and Gas Division

ELECTRIC LOG STATUS REPORT

FORM L-1

Tracking No.: 326182

This facsimile L-1 was generated electronically from data submitted to the RRC.

Instructions

When to File Form L-1:
- with Forms G-1, W-2, and GT-1 for new and deepened gas, oil, and geothermal wells
- with Form W-3 for plugged dry holes
- when sending in a log which was held under a request for confidentiality and the period for confidentiality has not yet expired.

When is Form L-1 NOT required:
- with Forms W-2, G-1, and GT-1 filed for injection wells, disposal wells, water supply wells, service wells, re-test wells, re-classifications, and plugbacks of oil, gas or geothermal wells
- with Form W-3 for plugging of other than a dry hole

Where to File Form L-1:
- with the appropriate Commission district office

Filling out Form L-1:
- Section I and the signature section must be filled out for all wells
- complete only the appropriate part of Section II

Type of log required:
- any wireline survey run for the purpose of obtaining lithology, porosity, or resistivity information
- no more than one such log is required but it must be of the subject well
- if such log is NOT run on the subject well, do NOT substitute any other type of log; just select Section II, Part A below

SECTION I. IDENTIFICATION

Operator Name: EXXONMOBIL LOW C SOL ON STOR LLC	District No. 03	Completion Date: 10/07/2024
Field Name WILDCAT	Drilling Permit No. 901180	
Lease Name BEAD FARM COMPANY	Lease/ID No. 28194	Well No. 4
County JEFFERSON	API No. 42- 245-32914	

SECTION II. LOG STATUS (Complete either A or B)

☐ A. BASIC ELECTRIC LOG NOT RUN

☒ B. BASIC ELECTRIC LOG RUN. (Select one)

☒ 1. Confidentiality is requested and a copy of the header for each log that has been run on the well is attached.

☐ 2. Confidentiality already granted on basic electric log covering this interval (applicable to deepened wells only).

☐ 3. Basic electric log covering this interval already on file with Commission (applicable to deepened wells only).

☐ 4. Log attached to (select one):

☐ (a) Form L-1 (this form). If the company/lease name on log is different from that shown in Section I, please enter name on log here: _____

Check here if attached log is being submitted after being held confidential. ☐

☐ (b) Form P-7, Application for Discovery Allowable and New Field Designation.

☐ (c) Form W-4, Application for Multiple Completion:

Lease or ID No(s). _____

Well No(s). _____

Josh Calkin
Signature

Title

EXXONMOBIL LOW C SOL ON STOR LLC
Name (print)

(281) 702-5537
Phone

12/18/2024
Date

-FOR RAILROAD COMMISSION USE ONLY-

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON

4607 HWY 90 EAST • BROUSSARD, LA 70518

PHONE 337 837 3061 • FAX 337 837 4400

Jefferson County,
State of Texas

I, **Kristen Killen,** certify that: I am employed by Halliburton Energy Service and that I did on the day(s) of **September 1, 2024 to September 5, 2024** conduct or supervise the taking of Directional Surveys as follow:

- **306' to a depth of 8320' MWD surveys performed by Sperry Drilling MWD**
- **Final survey is projected to a total depth of 8383'**

I certify that the data is true, correct, complete and within the limitations of the tool as set forth by Halliburton Energy Services. I further certify that I am authorized and qualified to make this report, that this survey was conducted at the request of **EXXONMOBIL LOW C SOL ON STOR LLC** for the **BEAD FARM COMPANY 4** in **Jefferson County, TX,** and that I have reviewed this report and find that it conforms to the principles and procedures set forth by Halliburton Energy Service for quality well surveying.

Kristen Killen, Log Analyst

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON
4607 HWY 90 EAST • BROUSSARD, LA 70518
PHONE 337 837 3061 • FAX 337 837 4400

September 20, 2024

Railroad Commission of Texas
Oil and Gas Division
P.O. Box 12967
Capital Station
Austin, TX 78711

Re: EXXONMOBIL LOW C SOL ON STOR LLC
R.R.C. Operator No. 101256
BEAD FARM COMPANY 4
Permit No. 901180
Jefferson County, TX
API # 42-245-32914

Attention: Ms. Pam Johns

Enclosed, please find one copy of the survey performed on the above referenced well by Halliburton Energy Services, Inc. Operator #347-151.

Other information required by your office is as follows:

Name & Title of Surveyor	-	Kristen Killen, Log Analyst
Drainhole Number	-	Original
Surveyed Depths	-	306' – 8320' MWD Surveys performed by Sperry Drilling
Dates Performed	-	September 1, 2024 to September 5, 2024
Type of Survey	-	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the listed e-mail address.

Respectfully,

Kristen Killen
Log Analyst
Kristen.Killen@Halliburton.com
Halliburton / Sperry Drilling

Enclosures
RE: LA-MM 909035812

CONFIDENTIAL BUSINESS INFORMATION

ExxonMobil

Jefferson County, Tx_NAD83
Rose Prospect CCS
Bead Farm Company 4
4224532914
004 ST00BP00 Monitor

Design: 004 ST00BP00

Sperry Drilling Services

Geodetic Report

16 September, 2024

Well Coordinates: 4,251,627.70 N, 1,053,835.22 E (30° 01' 16.84" N, 094° 17' 37.65" W)
Ground Level: 27.90 ft

Local Coordinate Origin:	Centered on Well Bead Farm Company 4
Viewing Datum:	(32.52') Nabors X-33 @ 60.4ft (Spud)
TVDs to System:	N
North Reference:	Grid
Unit System:	API

Version: 5000.17 Build: 04

HALLIBURTON

Design Report for Bead Farm Company 4 - 004 ST00BP00

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Geographic Coordinates Latitude (ft)	Geographic Coordinates Longitude (ft)	UTM Coordinates Northing (m)	UTM Coordinates Easting (m)
0.0	0.00	0.00	0.0	0.0	0.0	30° 1' 16.845 N	94° 17' 37.650 W	4,251,627.70	1,053,835.22
306.0	0.32	198.12	306.0	-0.8	-0.3	30° 1' 16.837 N	94° 17' 37.654 W	4,251,627.45	1,053,835.14
414.0	0.47	222.63	414.0	-1.4	-0.7	30° 1' 16.831 N	94° 17' 37.658 W	4,251,627.26	1,053,835.02
502.0	0.50	238.67	502.0	-1.9	-1.2	30° 1' 16.827 N	94° 17' 37.665 W	4,251,627.12	1,053,834.84
610.0	0.56	223.44	610.0	-2.5	-2.0	30° 1' 16.821 N	94° 17' 37.674 W	4,251,626.93	1,053,834.61
684.0	0.73	217.70	684.0	-3.2	-2.5	30° 1' 16.815 N	94° 17' 37.681 W	4,251,626.74	1,053,834.45
774.0	0.71	220.18	774.0	-4.0	-3.2	30° 1' 16.806 N	94° 17' 37.689 W	4,251,626.47	1,053,834.23
862.0	0.57	228.82	862.0	-4.7	-3.9	30° 1' 16.800 N	94° 17' 37.697 W	4,251,626.25	1,053,834.02
956.0	0.64	221.03	956.0	-5.4	-4.6	30° 1' 16.793 N	94° 17' 37.705 W	4,251,626.04	1,053,833.81
1,053.0	0.68	235.33	1,053.0	-6.2	-5.5	30° 1' 16.786 N	94° 17' 37.715 W	4,251,625.81	1,053,833.56
1,149.0	0.43	209.78	1,149.0	-6.8	-6.1	30° 1' 16.780 N	94° 17' 37.723 W	4,251,625.62	1,053,833.36
1,243.0	0.31	224.36	1,243.0	-7.3	-6.5	30° 1' 16.775 N	94° 17' 37.727 W	4,251,625.47	1,053,833.25
1,335.0	0.37	83.65	1,335.0	-7.4	-6.3	30° 1' 16.774 N	94° 17' 37.726 W	4,251,625.43	1,053,833.29
1,432.0	0.18	65.07	1,432.0	-7.3	-5.9	30° 1' 16.775 N	94° 17' 37.720 W	4,251,625.46	1,053,833.43
1,527.0	0.25	159.60	1,527.0	-7.5	-5.7	30° 1' 16.773 N	94° 17' 37.718 W	4,251,625.42	1,053,833.49
1,620.0	0.57	127.86	1,620.0	-8.0	-5.2	30° 1' 16.768 N	94° 17' 37.713 W	4,251,625.27	1,053,833.62
1,717.0	1.28	135.35	1,716.9	-9.0	-4.1	30° 1' 16.757 N	94° 17' 37.701 W	4,251,624.95	1,053,833.97
1,815.0	1.23	141.72	1,814.9	-10.6	-2.7	30° 1' 16.741 N	94° 17' 37.686 W	4,251,624.46	1,053,834.40
1,907.0	1.11	133.32	1,906.9	-12.0	-1.4	30° 1' 16.727 N	94° 17' 37.672 W	4,251,624.04	1,053,834.79
1,998.0	0.78	120.21	1,997.9	-12.9	-0.2	30° 1' 16.717 N	94° 17' 37.659 W	4,251,623.76	1,053,835.15
2,092.0	0.75	133.29	2,091.9	-13.7	0.8	30° 1' 16.709 N	94° 17' 37.648 W	4,251,623.53	1,053,835.45
2,178.0	0.91	127.05	2,177.9	-14.5	1.7	30° 1' 16.701 N	94° 17' 37.637 W	4,251,623.29	1,053,835.74
2,264.0	0.88	125.11	2,263.9	-15.3	2.8	30° 1' 16.693 N	94° 17' 37.625 W	4,251,623.05	1,053,836.07
2,361.0	0.86	135.03	2,360.8	-16.2	3.9	30° 1' 16.683 N	94° 17' 37.613 W	4,251,622.76	1,053,836.41
2,451.0	0.96	152.98	2,450.8	-17.4	4.7	30° 1' 16.671 N	94° 17' 37.604 W	4,251,622.41	1,053,836.66
2,545.0	1.05	155.00	2,544.8	-18.8	5.5	30° 1' 16.656 N	94° 17' 37.597 W	4,251,621.96	1,053,836.88
2,642.0	0.89	152.80	2,641.8	-20.3	6.2	30° 1' 16.642 N	94° 17' 37.589 W	4,251,621.51	1,053,837.10
2,733.0	0.81	161.95	2,732.8	-21.6	6.7	30° 1' 16.629 N	94° 17' 37.584 W	4,251,621.13	1,053,837.26
2,830.0	0.75	164.25	2,829.8	-22.8	7.1	30° 1' 16.616 N	94° 17' 37.580 W	4,251,620.74	1,053,837.38
2,928.0	0.62	164.53	2,927.8	-23.9	7.4	30° 1' 16.605 N	94° 17' 37.577 W	4,251,620.40	1,053,837.48
3,019.0	0.63	154.06	3,018.8	-24.9	7.8	30° 1' 16.596 N	94° 17' 37.573 W	4,251,620.12	1,053,837.58
3,115.0	0.65	156.66	3,114.8	-25.8	8.2	30° 1' 16.586 N	94° 17' 37.569 W	4,251,619.82	1,053,837.72
3,207.0	0.75	162.03	3,206.8	-26.9	8.6	30° 1' 16.576 N	94° 17' 37.565 W	4,251,619.50	1,053,837.84
3,302.0	0.82	170.76	3,301.8	-28.2	8.9	30° 1' 16.563 N	94° 17' 37.562 W	4,251,619.12	1,053,837.93
3,396.0	0.81	168.40	3,395.7	-29.5	9.1	30° 1' 16.550 N	94° 17' 37.560 W	4,251,618.71	1,053,838.00
3,415.8	0.81	169.63	3,415.6	-29.7	9.2	30° 1' 16.547 N	94° 17' 37.559 W	4,251,618.63	1,053,838.02
3,490.0	0.83	174.11	3,489.7	-30.8	9.3	30° 1' 16.537 N	94° 17' 37.558 W	4,251,618.31	1,053,838.07
3,585.0	0.76	182.72	3,584.7	-32.1	9.4	30° 1' 16.524 N	94° 17' 37.558 W	4,251,617.91	1,053,838.08
3,679.0	0.75	176.68	3,678.7	-33.3	9.4	30° 1' 16.511 N	94° 17' 37.559 W	4,251,617.53	1,053,838.08
3,774.0	0.69	165.36	3,773.7	-34.5	9.6	30° 1' 16.500 N	94° 17' 37.557 W	4,251,617.17	1,053,838.14
3,867.0	0.63	187.14	3,866.7	-35.6	9.7	30° 1' 16.489 N	94° 17' 37.557 W	4,251,616.85	1,053,838.16
3,961.0	0.69	183.27	3,960.7	-36.7	9.6	30° 1' 16.479 N	94° 17' 37.558 W	4,251,616.53	1,053,838.13

Design Report for Bead Farm Company 4 - 004 ST00BP00

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Geographic Coordinates Latitude	Geographic Coordinates Longitude	UTM Coordinates Northing (m)	UTM Coordinates Easting (m)
4,056.0	1.00	37.32	4,055.7	-36.6	10.0	30° 1' 16.479 N	94° 17' 37.553 W	4,251,616.55	1,053,838.27
4,150.0	1.12	45.72	4,149.7	-35.3	11.2	30° 1' 16.492 N	94° 17' 37.539 W	4,251,616.95	1,053,838.63
4,245.0	0.86	49.51	4,244.7	-34.2	12.4	30° 1' 16.502 N	94° 17' 37.525 W	4,251,617.29	1,053,838.99
4,434.0	0.63	55.87	4,433.7	-32.7	14.3	30° 1' 16.516 N	94° 17' 37.502 W	4,251,617.74	1,053,839.58
4,523.0	0.81	47.37	4,522.6	-32.0	15.2	30° 1' 16.523 N	94° 17' 37.492 W	4,251,617.96	1,053,839.85
4,600.0	0.93	49.95	4,599.6	-31.2	16.1	30° 1' 16.530 N	94° 17' 37.482 W	4,251,618.19	1,053,840.12
4,717.0	1.10	44.11	4,716.6	-29.8	17.6	30° 1' 16.544 N	94° 17' 37.464 W	4,251,618.62	1,053,840.58
4,813.0	1.20	50.22	4,812.6	-28.5	19.0	30° 1' 16.556 N	94° 17' 37.447 W	4,251,619.02	1,053,841.01
4,907.0	1.14	56.10	4,906.6	-27.3	20.5	30° 1' 16.567 N	94° 17' 37.429 W	4,251,619.37	1,053,841.47
5,002.0	1.30	54.06	5,001.6	-26.1	22.2	30° 1' 16.577 N	94° 17' 37.410 W	4,251,619.73	1,053,841.98
5,098.0	1.30	48.08	5,097.5	-24.8	23.9	30° 1' 16.590 N	94° 17' 37.390 W	4,251,620.14	1,053,842.50
5,192.0	1.27	65.27	5,191.5	-23.6	25.6	30° 1' 16.601 N	94° 17' 37.370 W	4,251,620.49	1,053,843.03
5,287.0	1.44	67.44	5,286.5	-22.7	27.7	30° 1' 16.609 N	94° 17' 37.346 W	4,251,620.77	1,053,843.65
5,380.0	1.58	61.93	5,379.5	-21.7	29.9	30° 1' 16.619 N	94° 17' 37.321 W	4,251,621.09	1,053,844.33
5,475.0	1.41	332.54	5,474.4	-20.0	30.5	30° 1' 16.635 N	94° 17' 37.313 W	4,251,621.59	1,053,844.51
5,570.0	1.54	324.88	5,569.4	-17.9	29.2	30° 1' 16.656 N	94° 17' 37.326 W	4,251,622.23	1,053,844.13
5,664.0	1.65	324.88	5,663.4	-15.8	27.7	30° 1' 16.678 N	94° 17' 37.342 W	4,251,622.88	1,053,843.67
5,758.0	1.72	324.00	5,757.3	-13.6	26.1	30° 1' 16.700 N	94° 17' 37.360 W	4,251,623.56	1,053,843.18
5,852.0	1.59	327.25	5,851.3	-11.3	24.6	30° 1' 16.723 N	94° 17' 37.376 W	4,251,624.25	1,053,842.71
5,947.0	1.76	326.45	5,946.2	-9.0	23.1	30° 1' 16.747 N	94° 17' 37.392 W	4,251,624.95	1,053,842.25
6,042.0	1.83	325.28	6,041.2	-6.5	21.4	30° 1' 16.772 N	94° 17' 37.410 W	4,251,625.70	1,053,841.74
6,136.0	1.55	320.67	6,135.2	-4.3	19.7	30° 1' 16.794 N	94° 17' 37.428 W	4,251,626.38	1,053,841.23
6,230.0	1.74	328.51	6,229.1	-2.1	18.2	30° 1' 16.817 N	94° 17' 37.445 W	4,251,627.05	1,053,840.76
6,325.0	1.67	328.65	6,324.1	0.3	16.7	30° 1' 16.841 N	94° 17' 37.460 W	4,251,627.79	1,053,840.31
6,419.0	1.61	334.63	6,418.0	2.7	15.4	30° 1' 16.865 N	94° 17' 37.474 W	4,251,628.51	1,053,839.92
6,514.0	1.72	331.62	6,513.0	5.1	14.2	30° 1' 16.890 N	94° 17' 37.487 W	4,251,629.26	1,053,839.54
6,609.0	1.67	330.10	6,608.0	7.6	12.8	30° 1' 16.915 N	94° 17' 37.501 W	4,251,630.00	1,053,839.12
6,703.0	1.84	340.46	6,701.9	10.2	11.6	30° 1' 16.941 N	94° 17' 37.514 W	4,251,630.80	1,053,838.76
6,797.0	1.98	336.67	6,795.9	13.1	10.5	30° 1' 16.970 N	94° 17' 37.525 W	4,251,631.69	1,053,838.41
6,893.0	2.28	321.94	6,891.8	16.1	8.6	30° 1' 17.001 N	94° 17' 37.545 W	4,251,632.61	1,053,837.85
6,987.0	2.20	322.22	6,985.7	19.0	6.4	30° 1' 17.031 N	94° 17' 37.569 W	4,251,633.49	1,053,837.16
7,081.0	2.13	327.85	7,079.7	21.9	4.3	30° 1' 17.060 N	94° 17' 37.591 W	4,251,634.38	1,053,836.54
7,176.0	2.19	330.29	7,174.6	25.0	2.5	30° 1' 17.091 N	94° 17' 37.610 W	4,251,635.32	1,053,835.98
7,271.0	2.38	329.87	7,269.5	28.3	0.6	30° 1' 17.124 N	94° 17' 37.630 W	4,251,636.32	1,053,835.41
7,365.0	2.32	329.24	7,363.4	31.6	-1.3	30° 1' 17.158 N	94° 17' 37.651 W	4,251,637.33	1,053,834.81
7,459.0	2.04	328.07	7,457.4	34.7	-3.2	30° 1' 17.189 N	94° 17' 37.671 W	4,251,638.26	1,053,834.24
7,554.0	1.11	302.87	7,552.3	36.6	-4.9	30° 1' 17.209 N	94° 17' 37.689 W	4,251,638.85	1,053,833.74
7,648.0	1.06	286.01	7,646.3	37.3	-6.5	30° 1' 17.217 N	94° 17' 37.707 W	4,251,639.07	1,053,833.25
7,743.0	1.05	266.73	7,741.3	37.5	-8.2	30° 1' 17.219 N	94° 17' 37.726 W	4,251,639.13	1,053,832.73
7,838.0	0.93	267.08	7,836.3	37.4	-9.8	30° 1' 17.219 N	94° 17' 37.745 W	4,251,639.11	1,053,832.23
7,933.0	1.31	273.72	7,931.3	37.5	-11.7	30° 1' 17.220 N	94° 17' 37.766 W	4,251,639.11	1,053,831.66
8,028.0	1.54	274.02	8,026.2	37.6	-14.0	30° 1' 17.223 N	94° 17' 37.792 W	4,251,639.16	1,053,830.94

Design Report for Bead Farm Company 4 - 004 ST00BP00

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Geographic Coordinates Latitude	Geographic Coordinates Longitude	UTM Coordinates Northing (m)	UTM Coordinates Easting (m)
8,122.0	1.54	272.79	8,120.2	37.8	-16.5	30° 1' 17.225 N	94° 17' 37.821 W	4,251,639.21	1,053,830.17
8,216.0	1.42	278.74	8,214.2	38.0	-19.0	30° 1' 17.228 N	94° 17' 37.848 W	4,251,639.28	1,053,829.44
8,320.0	1.48	303.75	8,318.1	38.9	-21.3	30° 1' 17.239 N	94° 17' 37.875 W	4,251,639.57	1,053,828.71
8,383.0	1.48	303.75	8,381.1	39.9	-22.7	30° 1' 17.248 N	94° 17' 37.890 W	4,251,639.84	1,053,828.30

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
8,383.0	8,381.1	39.9	-22.7	Proj. to Bit

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (ft)	Origin +E/-W (ft)	Start TVD (ft)
User	No Target (Freehand)	0.00	Slot	0.0	0.0	0.0

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
306.0	2,178.0	01 HAL MWD (MagVarMS) 12 1/4" Hole 306' - 2178'	3_MWD+HRGM+MS
2,264.0	8,320.0	02 HAL MWD (MagVarMS) 8 1/2" Hole 2264' - 8320'	3_MWD+HRGM+MS

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
152.5	152.5	20" Conductor Casing	20.000	20.000
2,184.0	2,183.9	9-5/8" Surface Casing	9.625	12.250
8,367.5	8,365.6	5-1/2" Production Casing	5.500	8.500

Design Report for Bead Farm Company 4 - 004 ST00BP00

Targets for 004 ST00BP00 Monitor

Shape	Target Name	TVD (ft)	Northing (m)	Easting (m)	+N/-S ft	+E/-W ft	Created	Updated
Polygon	Rose2 T. Fleming SD Rect. 400'	3,562.0	4,248,251.97	1,053,561.35	-11,075.2	-898.5	5/13/2024	7/5/2024
Polygon	Rose1 T. Fleming SD Rect. 400'	3,508.3	4,249,261.67	1,054,768.97	-7,762.6	3,063.5	5/13/2024	6/17/2024
Polygon	Rose BF4 T. Fleming SD Rect. 150'	3,416.0	4,251,627.70	1,053,835.22	0.0	0.0	7/30/2024	8/29/2024

North Reference Sheet for Rose Prospect CCS - Bead Farm Company 4 - 004 ST00BP00 Monitor

All data is in Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to (32.52') Nabors X-33 @ 60.4ft (Spud). Northing and Easting are relative to Bead Farm Company 4

Coordinate System is US State Plane 1983, Texas South Central Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is 99° 0' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:30° 17' 0.000 N°

False Easting: 600,000.00m, False Northing: 4,000,000.00m, Scale Reduction: 0.99993482

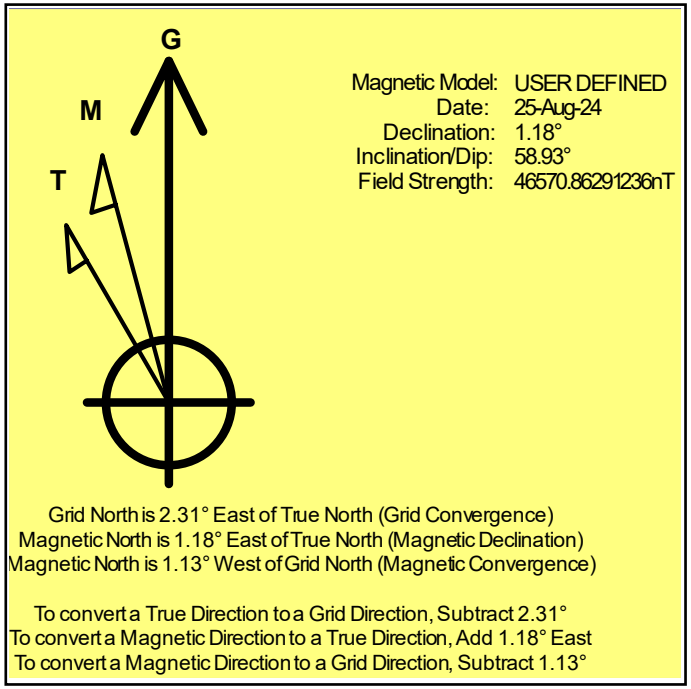
Grid Coordinates of Well: 4,251,627.70 m N, 1,053,835.22 m E

Geographical Coordinates of Well: 30° 01' 16.84" N, 094° 17' 37.65" W

Grid Convergence at Surface is: 2.31°

Based upon Minimum Curvature type calculations, at a Measured Depth of 8,383.02ft

the Bottom Hole Displacement is 45.86ft in the Direction of 330.33° (Grid).
Magnetic Convergence at surface is: 1.13° (25 August 2024, , User Defined)



CONFIDENTIAL BUSINESS INFORMATION

Railroad Commission of Texas

PERMIT TO DRILL, RE-COMPLETE, OR RE-ENTER ON REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

CONDITIONS AND INSTRUCTIONS

Permit Invalidation. It is the operator's responsibility to make sure that the permitted location complies with Commission density and spacing rules in effect on the spud date. The permit becomes invalid automatically if, because of a field rule change or the drilling of another well, the stated location is not in compliance with Commission field rules on the spud date. If this occurs, application for an exception to Statewide Rules 37 and 38 must be made and a special permit granted prior to spudding. Failure to do so may result in an allowable not being assigned and/or enforcement procedures being initiated.

Notice Requirements. Per H.B 630, signed May 8, 2007, the operator is required to provide notice to the surface owner no later than the 15th business day after the Commission issues a permit to drill. Please refer to subchapter Q Sec. 91.751-91.755 of the Texas Natural Resources Code for applicability.

Permit expiration. This permit expires two (2) years from the date of issuance shown on the original permit. The permit period will not be extended.

Drilling Permit Number. The drilling permit number shown on the permit MUST be given as a reference with any notification to the district (see below), correspondence, or application concerning this permit.

Rule 37 Exception Permits. This Statewide Rule 37 exception permit is granted under either provision Rule 37 (h)(2)(A) or 37(h)(2)(B). Be advised that a permit granted under Rule 37(h)(2)(A), notice of application, is subject to the General Rules of Practice and Procedures and if a protest is received under Section 1.3, "Filing of Documents," and/or Section 1.4, "Computation of Time," the permit may be deemed invalid.

Before Drilling

Fresh Water Sand Protection. The operator must set and cement sufficient surface casing to protect all usable-quality water, as defined by the Railroad Commission of Texas (RRC) Groundwater Advisory Unit (GWAU). Before drilling a well, the operator must obtain a letter from the Railroad Commission of Texas stating the depth to which water needs protection, Write: Railroad Commission of Texas, Groundwater Advisory Unit (GWAU), P.O. Box 12967, Austin, TX 78711-3087. File a copy of the letter with the appropriate district office.

Accessing the Well Site. If an OPERATOR, well equipment TRANSPORTER or WELL service provider must access the well site from a roadway on the state highway system (Interstate, U.S. Highway, State Highway, Farm-to-Market Road, Ranch-to-Market Road, etc.), an access permit is required from TxDOT. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

Water Transport to Well Site. If an operator intends to transport water to the well site through a temporary pipeline laid above ground on the state's right-of-way, an additional TxDOT permit is required. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

*NOTIFICATION

The operator is **REQUIRED** to notify the district office when setting surface casing, intermediate casing, and production casing, or when plugging a dry hole. The district office **MUST** also be notified if the operator intends to re-enter a plugged well or re-complete a well into a different regulatory field. Time requirements are given below. The drilling permit number **MUST** be given with such notifications.

During Drilling

Permit at Drilling Site. A copy of the Form W-1 Drilling Permit Application, the location plat, a copy of Statewide Rule 13 alternate surface casing setting depth approval from the district office, if applicable, and this drilling permit must be kept at the permitted well site throughout drilling operations.

***Notification of Setting Casing.** The operator MUST call in notification to the appropriate district office (phone number shown the on permit) a minimum of eight (8) hours prior to the setting of surface casing, intermediate casing, AND production casing. The individual giving notification MUST be able to advise the district office of the drilling permit number.

***Notification of Re-completion/Re-entry.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of eight (8) hours prior to the initiation of drilling or re-completion operations. The individual giving notification MUST be able to advise the district office of the drilling permit number.

Completion and Plugging Reports

Hydraulic Fracture Stimulation using Diesel Fuel: Most operators in Texas do not use diesel fuel in hydraulic fracturing fluids. Section 322 of the Energy Policy Act of 2005 amended the Underground Injection Control (UIC) portion of the federal Safe Drinking Water Act (42 USC 300h(d)) to define "underground Injection" to *EXCLUDE* " ...the underground injection of fluids or propping agents (*other than diesel fuels*) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities." (italic and underlining added.) Therefore, hydraulic fracturing may be subject to regulation under the federal UIC regulations if diesel fuel is injected or used as a propping agent. EPA defined "diesel fuel" using the following five (5) Chemical Abstract Service numbers: 68334-30-5 Primary Name: Fuels, diesel; 68476-34-6 Primary Name: Fuels, diesel, No. 2; 68476-30-2 Primary Name: Fuel oil No. 2; 68476-31-3 Primary Name: Fuel oil, No. 4; and 8008-20-6 Primary Name: Kerosene. As a result, an injection well permit would be required before performing hydraulic fracture stimulation using diesel fuel as defined by EPA on any well in Texas. Hydraulic fracture stimulation using diesel fuel as defined by EPA on a well in Texas without an injection well permit could result in enforcement action.

Producing Well. Statewide Rule 16 states that the operator of a well shall file with the Commission the appropriate completion report within ninety (90) days after completion of the well or within one hundred and fifty (150) days after the date on which the drilling operation is completed, whichever is earlier. Completion of the well in a field authorized by this permit voids the permit for all other fields included in the permit unless the operator indicates on the initial completion report that the well is to be a dual or multiple completion and promptly submits an application for multiple completion. All zones are required to be completed before the expiration date on the existing permit. Statewide Rule 40(d) requires that upon successful completion of a well in the same reservoir as any other well previously assigned the same acreage, proration plats and P-15s or P-16s (if required) or a lease plat and P-16 must be submitted with no double assignment of acreage unless authorized by rule.

Dry or Noncommercial Hole. Statewide Rule 14(b)(2) prohibits suspension of operations on each dry or non-commercial well without plugging unless the hole is cased and the casing is cemented in compliance with Commission rules. If properly cased, Statewide Rule 14(b)(2) requires that plugging operations must begin within a period of one (1) year after drilling or operations have ceased. Plugging operations must proceed with due diligence until completed. An extension to the one-year plugging requirement may be granted under the provisions stated in Statewide Rule 14(b)(2).

Intention to Plug. The operator must file a Form W-3A (Notice of Intention to Plug and Abandon) with the district office at least five (5) days prior to beginning plugging operations. If, however, a drilling rig is already at work on location and ready to begin plugging operations, the district director or the director's delegate may waive this requirement upon request, and verbally approve the proposed plugging procedures.

***Notification of Plugging a Dry Hole.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of four (4) hours prior to beginning plugging operations. The individual giving the notification MUST be able to advise the district office of the drilling permit number and all water protection depths for that location as stated in the Groundwater Advisory Unit letter.

DIRECT INQUIRIES TO: DRILLING PERMIT SECTION, OIL AND GAS DIVISION

PHONE
(512) 463-6751

MAIL:
PO Box 12967
Austin, Texas, 78711-2967

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER	DATE PERMIT ISSUED OR AMENDED	DISTRICT
901180	Jul 11, 2024	* 03
API NUMBER	**FORM W-1 RECEIVED**	**COUNTY**
42-245-32914	Jul 10, 2024	JEFFERSON
TYPE OF OPERATION	**WELLBORE PROFILE(S)**	**ACRES**
NEW DRILL	Vertical	454

OPERATOR 101256

EXXONMOBIL LOW C SOL ON STOR LLC

ATTN EDWARD E GRAHAM
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389

NOTICE

This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored.

District Office Telephone No:
(713) 869-5001

LEASE NAME	WELL NUMBER
BEAD FARM COMPANY	4
LOCATION	**TOTAL DEPTH**
3 miles SE direction from CHINA, TX	10000

Section, Block and/or Survey

SECTION 7 BLOCK ABSTRACT 150

SURVEY HT&B RR CO

DISTANCE TO SURVEY LINES	DISTANCE TO NEAREST LEASE LINE
522 ft. SOUTH 1434 ft. EAST	ft.
DISTANCE TO LEASE LINES	**DISTANCE TO NEAREST WELL ON LEASE**
522 ft. SOUTH 1434 ft. EAST	See FIELD(s) Below

FIELD(s) and LIMITATIONS:

* SEE FIELD DISTRICT FOR REPORTING PURPOSES *

FIELD NAME / LEASE NAME	ACRES / NEAREST LEASE	DEPTH	WELL # / NEAREST WE	DIST
WILDCAT	454.00	10,000	4	03
BEAD FARM COMPANY			0	

RESTRICTIONS: For exploratory test only

THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS

This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.

This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

SWR #13 Formation Data

JEFFERSON (245) County

Formation	Remarks	Geological Order	Effective Date
LAFAYETTE	disposal	1	12/17/2013
CAPROCK	disposal	2	12/17/2013
SPINDLETOP SALT DOME	disposal	3	12/17/2013
FANNETT SALT DOME	disposal	4	12/17/2013
BIG HILL SALT DOME	disposal	5	12/17/2013
PLEISTOCENE-LISSIE	disposal	6	12/17/2013
MIOCENE	disposal	7	12/17/2013
FRIO	disposal	8	12/17/2013
MARINULINA	disposal	9	12/17/2013
HETEROSTEGINA	disposal	10	12/17/2013

The above list may not be all inclusive, and may also include formations that do not intersect all wellbores. The listing order of the Formation information reflects the general stratigraphic order and relative geologic age. This is a dynamic list subject to updates and revisions. It is the operator's responsibility to make sure that at the time of spudding the well the most current list is being referenced. Refer to the RRC website at the following address for the most recent information.
http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info

CONFIDENTIAL BUSINESS INFORMATION

WELL LOCATION PLAT
EXXONMOBIL LOW CARBON SOLUTIONS
BEAD FARM COMPANY #4
H.T. & B. R.R. CO. SURVEY, A-150
JEFFERSON COUNTY, TEXAS

1000' 500' 0 1000'

ELS SURVEYING & MAPPING INC.
TBPELS Firm No. 10032700
21072 FM 2493 / Bullard, Texas 75757 / 903-581-7759

MARIA F. LAZARIN
A-36

JAMES GERISH SR.
A-24

BHL: ST00
MD: 8320.00
TVD: 8318.10
From Surf Location:
17.239 N
37.890 W

H.T. & B. R.R. CO. SURVEY
A-150

GRID N

H.T. & B. R.R.
CO. SURVEY
A-567

SPERRY DRILLING JOB NO. 909035812
DATE SURVEYED September 5, 2024
SURVEYED FROM 306' TO 8320'
TIE-ON COORDINATES FROM Surface
BHL AT 8383.00 FT. (MD) = 45.86 FT.
AT 330.33° * Grid
FROM SURFACE LOCATION NW
BHL ____ = TO NW LEASE LINE

Bead Farm Co.
Vol. 879, Pg. 564
D.R.J.C.T.

BEAD FARM COMPANY #4
Y=13,948,881.87'
X=3,457,457.71'
LAT.=30°01'16.84"
LONG.=-94°17'37.65"

1434' Sc.

522' Sc.

G.H. EAST SURVEY
A-823

H.T. & B. R.R.
CO. SURVEY
A-149

D.C. TURNER SURVEY
A-658

SHL	TRACT CALLS	SURVEY CALLS	ELEV.
BEAD FARM COMPANY #4	522' Sc. FSL 1434' Sc. FEL	522' Sc. FSL 1434' Sc. FEL	24.0'

STATE OF TEXAS REGISTERED
JIM G. GLASS
5262
PROFESSIONAL LAND SURVEYOR

Location is approximately
12.3 miles SW of Beaumont, Tx.
"CHINA" Quadrangle

Driving Directions:
From the Intersection of I10 and Smith Road near Cheek, TX, go Northwest on Smith Road, .8 miles turn left (West) Kidd Road. Go 1.6 miles turn right (North) on Boyt Road. Go 1.1 miles stay straight (West) on Lawhon Rd. Go 2.8 miles turn right (North) on Green Pond Gully Road Go 1.5 miles. Turn Left (Northwest). Drive on location.

DATE SURVEYED: 5/20/2024

Location is staked from tract lines as evidenced by occupation, information obtained from the Tx. R.R.C and provided deed records. Distances shown are not intended to be definitive in establishing actual title boundaries. The deed data shown hereon was furnished by others. This is not a title survey. Vesting documents may not have been provided. Bearings and distances are based on the Texas State Plane Coordinate System N.A.D. 83 (2011) (South Central Zone) derived from GPS Observations.

LEGEND
= TRACT LINE
= SURVEY LINE
= PROPOSED WELL

FOR THE EXCLUSIVE USE OF
EXXONMOBIL LOW CARBON SOLUTIONS

STATE OF TEXAS – – – COUNTY OF SMITH
I, Jim G. Glass, Registered Professional Land Surveyor, do hereby certify the above plat to be true and correct to the best of my knowledge.
Date: May 30, 2024 Bullard, Texas
E.L.S. Surveying & Mapping, Inc.

Registered Professional Land Surveyor No. 5262

Drafter: BWT/ECJ FB 2747/36-37 Job No. 430923 Map No. J-0923-LOC-MON2

CONFIDENTIAL BUSINESS INFORMATION

CHRISTI CRADDICK, CHAIRMAN
WAYNE CHRISTIAN, COMMISSIONER
JIM WRIGHT, COMMISSIONER

DANNY SORRELLS
DIRECTOR, OIL AND GAS DIVISION
PETER FISHER, P.G.
DISTRICT DIRECTOR

RAILROAD COMMISSION OF TEXAS

OIL AND GAS DIVISION

OPERATOR Name:	EXXONMOBIL LOW C SOL ON	**RE:**	**Lease:**	BEAD FARM COMPANY
Address1:	ATTN EDWARD E GRAHAM			
Address2:	22777 SPRINGWOODS VILLAGE PKWY	**Well No:**	4	
City:	SPRING	**Sec:**	7	**Block:**
State:	TX	**County:**	JEFFERSON	
		Survey Name:	HT&B RR CO	

SWR13EX Application Number: 132309 **Drilling Permit No:** 901180

SWR 13 CASING EXCEPTION APPLICATION/ALTERNATIVE REQUEST APPROVED

The Proposed Casing and Cementing Program submitted for **LEASE** BEAD FARM COMPANY ; **WELL** 4 has been approved by the Railroad Commission of Texas District Office.

a. A copy of this approved letter must be kept on location during all phases of drilling and/or plugging operations. Once approved, changes CANNOT be made to the Proposed Casing Program on the original application without additional approval from the Railroad Commission of Texas District Office.

b. Any substantive modifications to the cement program require prior approval from the Railroad Commission of Texas District Office, and may require re-submission of the SWR 13 (Statewide Rule 13) Alternate Surface Casing Application. Contact the Railroad Commission of Texas District Office for more information.

c. The tail slurry must be sufficient to fill the Zone of Critical Cement as described in Statewide Rule 13(b)(1)(H)(i). In addition, all cement slurries must be mixed on location as described in Application for Alternate Surface Casing Program.

d. The casing and cement program shall adhere to the following specifications:

Set 2350 feet of surface casing and circulate cement from the shoe to the ground surface.

IF CEMENT IS NOT CIRCULATED TO THE GROUND SURFACE AS REQUIRED BY THIS EXCEPTION, YOU MUST CONTACT THE RAILROAD COMMISSION OF TEXAS DISTRICT OFFICE IMMEDIATELY AND FOLLOW THE PROCEDURES SET OUT IN RULE 13(b)(1)(H)(iii) OR AS REQUIRED BY THE RAILROAD COMMISSION OF TEXAS DISTRICT OFFICE.

You must comply with all other provisions of SWR 13 (Statewide Rule 13) and a representative of the cementing company who performs the cementing job for the protection of usable quality water strata must sign the Form W-15 attesting to the information regarding cementing operations performed; including circulation of cement. (Note: If surface casing is set below the approved depth, this can result in denial of future Statewide Rule 13(b)(1)(H)(i) requests.) A condition of the approved drilling permit requires notification to the Railroad Commission of Texas District Office eight (8) hours prior to the time casing is to be set/cemented in the well. If your exception request was submitted after the subject well has been drilled and completed, the operator may be referred for enforcement action.

This authorization shall expire within five (5) years from the date the Groundwater Protection Determination was issued, or at the expiration of the drilling permit (if the well is not spudded prior to expiration) for the referenced well, whichever occurs first. Furthermore, this authorization supersedes any prior authorizations issued for the referenced well.

This exception is based on information provided when the application was submitted 07/18/2024 .
If any information has changed, you must contact the appropriate Railroad Commission of Texas District Office, and submit a new application if applicable. If you have questions, please contact the appropriate Oil and Gas District office.

RRC APPROVAL BY: AUDREY KUKLENZ DATE: 07/22/2024

PETER FISHER, P.G.

DISTRICT DIRECTOR

CONFIDENTIAL BUSINESS INFORMATION

ExxonMobil

22777 Springwoods Parkway
Spring, Texas 77389

To whom it may concern,

This notice is to inform that the Bead Farm Company #4 well (API# 42-245-32914), located in Jefferson County, Texas, will be converted into a monitoring well. The well has been equipped with the with the following instrumentation:

- Electric line (TEC) from surface to a well depth of 7,787 feet MD with pressure and temperature sensors installed intermittently from 3,347 feet MD to 7,787 feet MD.
- Fiber optic pressure and temperature gauge sensor at 2,475 feet MD.
- U-tube fluid sampler with casing mounted guns. The perforation interval for fluid sampling is from 2,491 feet MD to 2,501 feet MD.
- Fiber optic cable from the surface to a well depth of 8,234 feet MD.

All the above equipment was installed on the exterior of the production casing and cemented in place. There are no perforations through the casing.

Regards,

DocuSigned by:
Jonathan Rodriguez
D38AA01693BB4EE...

Jonathan Rodriguez
Completion Advisor
ExxonMobil

CONFIDENTIAL BUSINESS INFORMATION

docusign

Certificate Of Completion

Envelope Id: 28E2F290-FB72-40D0-AA8F-30274455EBC0
Status: Completed
Subject: Complete with Docusign: W2 Monitor Well Statement V2.pdf
Source Envelope:
Document Pages: 1
Signatures: 1
Envelope Originator:
Certificate Pages: 2
Initials: 0
WILLIAM Carr
AutoNav: Enabled
Address Redacted
EnvelopeId Stamping: Disabled
william.j.carr@exxonmobil.com
Time Zone: (UTC-06:00) Central Time (US & Canada)
IP Address: 136.228.238.182

Record Tracking

Status: Original
12/23/2024 2:53:49 PM
Holder: WILLIAM Carr
william.j.carr@exxonmobil.com
Location: DocuSign
Security Appliance Status: Connected
Pool: Main SecApp 1

Signer Events	Signature	Timestamp
Jonathan Rodriguez jonathan.a.rodriguez@exxonmobil.com ExxonMobil General Security Level: Email, Account Authentication (None)	DocuSigned by: Jonathan Rodriguez D38AA01693BB4EE... Signature Adoption: Pre-selected Style Using IP Address: 136.228.238.73	Sent: 12/23/2024 2:54:34 PM Viewed: 12/23/2024 2:55:37 PM Signed: 12/23/2024 2:55:47 PM

Electronic Record and Signature Disclosure:
Accepted: 7/12/2022 6:18:31 AM
ID: 24c3aed4-aea4-42d2-a30a-2d53609eb06c
Company Name: Exxon Mobil Corporation

In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp

Agent Delivery Events	Status	Timestamp

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp

Witness Events	Signature	Timestamp

Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	12/23/2024 2:54:34 PM
Certified Delivered	Security Checked	12/23/2024 2:55:37 PM
Signing Complete	Security Checked	12/23/2024 2:55:47 PM
Completed	Security Checked	12/23/2024 2:55:47 PM

Payment Events	Status	Timestamps

Electronic Record and Signature Disclosure

Electronic Record and Signature Disclosure created on: 2/24/2022 12:08:30 AM
Parties agreed to: Jonathan Rodriguez

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- I am authorized to do the specific type of work (approve, endorse, etc.) in the country where I am physically located when using DocuSign

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CONFIDENTIAL BUSINESS INFORMATION

678487 (USDW Monitoring Well No. 1)

CONFIDENTIAL BUSINESS INFORMATION

STATE OF TEXAS WELL REPORT for Tracking #678487

Owner: **ExxonMobil Low Carbon Solutions Onshore Storage LLC**

Address: **22777 Springwoods Village Parkway Spring, TX 77389**

Well Location: **Theriot Rd China, TX**

~1.5 miles south East of China. Well is located on south side of road in agriculture field

Well County: **Jefferson**

Owner Well #: **Bead USDW MW 1**

Grid #: **61-62-8**

Latitude: **30° 01' 51" N**

Longitude: **094° 18' 38" W**

Elevation: **No Data**

Type of Work: **New Well**

Proposed Use: **Monitor**

Drilling Start Date: **6/27/2024** Drilling End Date: **8/20/2024**

Borehole:

Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
8	0	330

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
295	330	Sand	20/40

Annular Seal Data:

Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
0	290	Cement 68 Bags/Sacks
290	295	Bentonite 2 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Walker-Hill Environmental, Inc.**

PO 1147
Foxworth, MS 39483

Driller Name: **Gary P Hill** License Number: **58141**

Apprentice Name: **Eric Meitzler**

Comments: **No Data**

Report Amended on 12/5/2024 by Request #43900

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**20**	**Clay, sand, trace gravel**
20	**60**	**Clay**
60	**120**	**Sandy Clay**
120	**180**	**Clay with sand**
180	**280**	**Clay**
280	**300**	**Clay, sand**
300	**330**	**Sand**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	**Riser**	**New Plastic (PVC)**	**40**	**-3**	**300**
4	**Screen**	**New Plastic (PVC)**	**40 0.010**	**300**	**320**
4	**Riser**	**New Plastic (PVC)**	**40**	**320**	**330**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

CONFIDENTIAL BUSINESS INFORMATION

683826 USDW Monitoring Well No. 2

STATE OF TEXAS WELL REPORT for Tracking #683826

Owner:	**ExxonMobil Low Carbon Solutions Onshore Storage LLC**	Owner Well #:	**LaBelle USDW MW 2R**
Address:	**22777 Springwoods Village Parkway Spring, TX 77389**	Grid #:	**61-62-9**
		Latitude:	**30° 00' 09" N**
Well Location:	**Theriot Rd China, TX**	Longitude:	**094° 16' 28" W**
		Elevation:	**No Data**
Well County:	**Jefferson**		

Type of Work: **New Well** Proposed Use: **Monitor**

Drilling Start Date: **11/5/2024** Drilling End Date: **11/9/2024**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8	**0**	**320**

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
285	**320**	**Sand**	**20/40**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**279**	**Cement 45 Bags/Sacks**
279	**285**	**Bentonite 2 Bags/Sacks**

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Walker-Hill Environmental, Inc.**

PO 1147
Foxworth, MS 39483

Driller Name: **Gary P Hill** License Number: **58141**

Apprentice Name: **Eric Meitzler**

Comments: **This well replaced damaged well USDW-2 that was plugged**

Report Amended on 12/5/2024 by Request #43897

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**20**	**Clay, sand, trace gravel**
20	**60**	**Clay**
60	**120**	**Sandy Clay**
120	**180**	**Clay with sand**
180	**270**	**Clay**
270	**320**	**Clay, sand**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	**Riser**	**New Plastic (PVC)**	**80**	**-3**	**290**
4	**Screen**	**New Plastic (PVC)**	**80 0.010**	**290**	**310**
4	**Riser**	**New Plastic (PVC)**	**80**	**310**	**320**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

CONFIDENTIAL BUSINESS INFORMATION

678491 USDW Monitoring Well No. 3

CONFIDENTIAL BUSINESS INFORMATION

STATE OF TEXAS WELL REPORT for Tracking #678491

Owner:	**ExxonMobil Low Carbon Solutions Onshore Storage LLC**	Owner Well #:	**Bead USDW MW 3**
Address:	**22777 Springwoods Village Parkway Spring, TX 77389**	Grid #:	**64-06-2**
Well Location:	**Lawhorn Rd China, TX**	Latitude:	**29° 59' 15" N**
Well County:	**Jefferson**	Longitude:	**094° 17' 56" W**
		Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Monitor**

Drilling Start Date: **6/25/2024** Drilling End Date: **8/20/2024**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8	**0**	**330**

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
298	**330**	**Sand**	**20/40**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**295**	**Cement 65 Bags/Sacks**
295	**298**	**Bentonite 2 Bags/Sacks**

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Walker-Hill Environmental, Inc.**

PO 1147
Foxworth, MS 39483

Driller Name: **Gary P Hill** License Number: **58141**

Apprentice Name: **Eric Meitzler**

Comments: **No Data**

Report Amended on 12/5/2024 by Request #43898

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**20**	**Clay, sand, trace gravel**
20	**60**	**Clay**
60	**120**	**Sandy Clay**
120	**180**	**Clay with sand**
180	**280**	**Clay**
280	**300**	**Clay, sand**
300	**330**	**Sand**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	**Riser**	**New Plastic (PVC)**	**40**	**-3**	**300**
4	**Screen**	**New Plastic (PVC)**	**40 0.010**	**300**	**320**
4	**Riser**	**New Plastic (PVC)**	**40**	**320**	**330**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

CONFIDENTIAL BUSINESS INFORMATION

678489

STATE OF TEXAS WELL REPORT for Tracking #678489

Owner: **ExxonMobil Low Carbon Solutions Onshore Storage LLC**

Address: **22777 Springwoods Village Parkway Spring, TX 77389**

Well Location: **Theriot Rd China, TX**

Well County: **Jefferson**

Owner Well #: **LaBelle USDW MW 2**

Grid #: **61-62-9**

Latitude: **30° 00' 09" N**

Longitude: **094° 16' 28" W**

Elevation: **No Data**

****This well has been plugged**** **Plugging Report Tracking #241952**

Type of Work: **New Well**

Proposed Use: **Monitor**

Drilling Start Date: **6/21/2024** Drilling End Date: **8/20/2024**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8	**0**	**440**

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
314	**350**	**Sand**	**20/40**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**310**	**Cement 72 Bags/Sacks**
310	**314**	**Bentonite 2 Bags/Sacks**

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Plug Information:

Description (number of sacks & material)	Top Depth (ft.)	Bottom Depth (ft.)
Cement	**350**	**440**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Walker-Hill Environmental, Inc.**

PO 1147
Foxworth, MS 39483

Driller Name: **Gary P Hill** License Number: **58141**

Apprentice Name: **Eric Meitzler**

Comments: **No Data**

Report Amended on 12/5/2024 by Request #43899

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**20**	**Clay, sand, trace gravel**
20	**60**	**Clay**
60	**120**	**Sandy Clay**
120	**180**	**Clay with sand**
180	**280**	**Clay**
280	**300**	**Clay, sand**
300	**330**	**Sand**
330	**440**	**Clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	**Riser**	**New Plastic (PVC)**	**40**	**-3**	**320**
4	**Screen**	**New Plastic (PVC)**	**40 0.010**	**320**	**340**
4	**Riser**	**New Plastic (PVC)**	**40**	**340**	**350**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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CONFIDENTIAL BUSINESS INFORMATION

STATE OF TEXAS PLUGGING REPORT for Tracking #241952

Owner:	**ExxonMobil Low Carbon Solutions Onshore Storage LLC**	Owner Well #:	**LaBelle USDW MW 2**
Address:	**22777 Springwoods Village Parkway Spring, TX 77389**	Grid #:	**61-62-9**
Well Location:	**Theriot Rd China, TX**	Latitude:	**30° 00' 09" N**
Well County:	**Jefferson**	Longitude:	**094° 16' 28" W**
		Elevation:	**No Data**

Well Type: **Monitor**

Drilling Information

Company: **Walker-Hill Environmental, Inc.** Date Drilled: **8/20/2024**

Driller: **Gary P Hill** License Number: **58141**

Well Report Tracking #678489

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	**8**	**0**	**440**

Plugging Information

Date Plugged: **11/5/2024** Plugger:

Plug Method: **Tremmie pipe cement from bottom to top**

Casing Left in Well:

Dia (in.)	Top (ft.)	Bottom (ft.)
4	**0**	**350**

Plug(s) Placed in Well:

Top (ft.)	Bottom (ft.)	Description (number of sacks & material)
0	**350**	**Cement 21 Bags/Sacks**

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information: **Walker-Hill Environmental, Inc.**

PO 1147
Foxworth, MS 39483

Driller Name: **Gary P Hill** License Number: **58141**

Apprentice Name: **Eric Meitzler**

Comments: **No Data**

Report Amended on 12/5/2024 by Request #21385

CONFIDENTIAL BUSINESS INFORMATION

645970 (Bead Farm Co. #1 Water Rig Supply Well)

STATE OF TEXAS WELL REPORT for Tracking #645970

Owner:	**Exxon Mobil**	Owner Well #:	**Bead Farm #1**
Address:	**22777 Springwoods Village Pkwy Spring, TX 77389**	Grid #:	**64-06-2**
Well Location:	**From the intersection of Pignut Rd and Green Pond Gully Rd, travel east on Pignut Rd and turn south on lease rd. Follow lease rd to location Beaumont, TX 77713**	Latitude:	**29° 59' 56.5" N**
		Longitude:	**094° 17' 53" W**
		Elevation:	**24 ft. above sea level**
Well County:	**Jefferson**		
Type of Work:	**New Well**	Proposed Use:	**Rig Supply**

Drilling Start Date: **8/10/2023** Drilling End Date: **8/11/2023**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
7.875	**0**	**290**

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
250	**290**	**Gravel**	**16/30**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**15**	**Cement 4 Bags/Sacks**

Seal Method: **Pumped**

Sealed By: **Driller**

Distance to Property Line (ft.): **> 100ft**

Distance to Septic Field or other concentrated contamination (ft.): **>150 ft**

Distance to Septic Tank (ft.): **> 150ft**

Method of Verification: **wheel/gis**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **70 ft.** below land surface on **2023-08-11** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **HYDROLINE DRILLING LLC**

706 GLADNEY ST
MINDEN, LA 71055

Driller Name: **Spencer White**

License Number: **60321**

Apprentice Name: **Derrick Wyatt**

Apprentice Number: **61365**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**20**	**clay**
20	**40**	**sand**
40	**60**	**stripping**
60	**120**	**shale**
120	**140**	**stripping**
140	**180**	**sand**
180	**200**	**shale**
200	**240**	**stripping**
240	**290**	**sand**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	**Blank**	**New Plastic (PVC)**	**40**	**0**	**270**
4	**Screen**	**New Stainless Steel**	**40 0.018**	**270**	**290**

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Austin, TX 78711
(512) 334-5540

CONFIDENTIAL BUSINESS INFORMATION

616901 D. S. Wier

CONFIDENTIAL BUSINESS INFORMATION

Texas Water Development Board (TWDB) Groundwater Database (GWDB) Well Information Report for State Well Number 61-62-901

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	6162901
County	Jefferson
River Basin	Neches-Trinity
Groundwater Management Area	14
Regional Water Planning Area	I - East Texas
Groundwater Conservation District	GCD Does Not Exist
Latitude (decimal degrees)	30.001389
Latitude (degrees minutes seconds)	30° 00' 05" N
Longitude (decimal degrees)	-94.270833
Longitude (degrees minutes seconds)	094° 16' 15" W
Coordinate Source	+/- 5 Seconds
Aquifer Code	112CHCTU - Chicot Aquifer, Upper
Aquifer	Gulf Coast
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	25
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	7
Well Depth Source	Another Government Agency
Drilling Start Date	
Drilling End Date	
Drilling Method	Dug
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	Plugged or Destroyed
Water Level Observation	Miscellaneous Measurements
Water Quality Available	Yes
Pump	None
Pump Depth (feet below land surface)	
Power Type	
Annular Seal Method	
Surface Completion	
Owner	D. S. Wier
Driller	
Other Data Available	
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	U.S. Geological Survey
Created Date	
Last Update Date	3/4/2020

Remarks	Dug well. Wood casing. Destroyed.

Casing - No Data

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

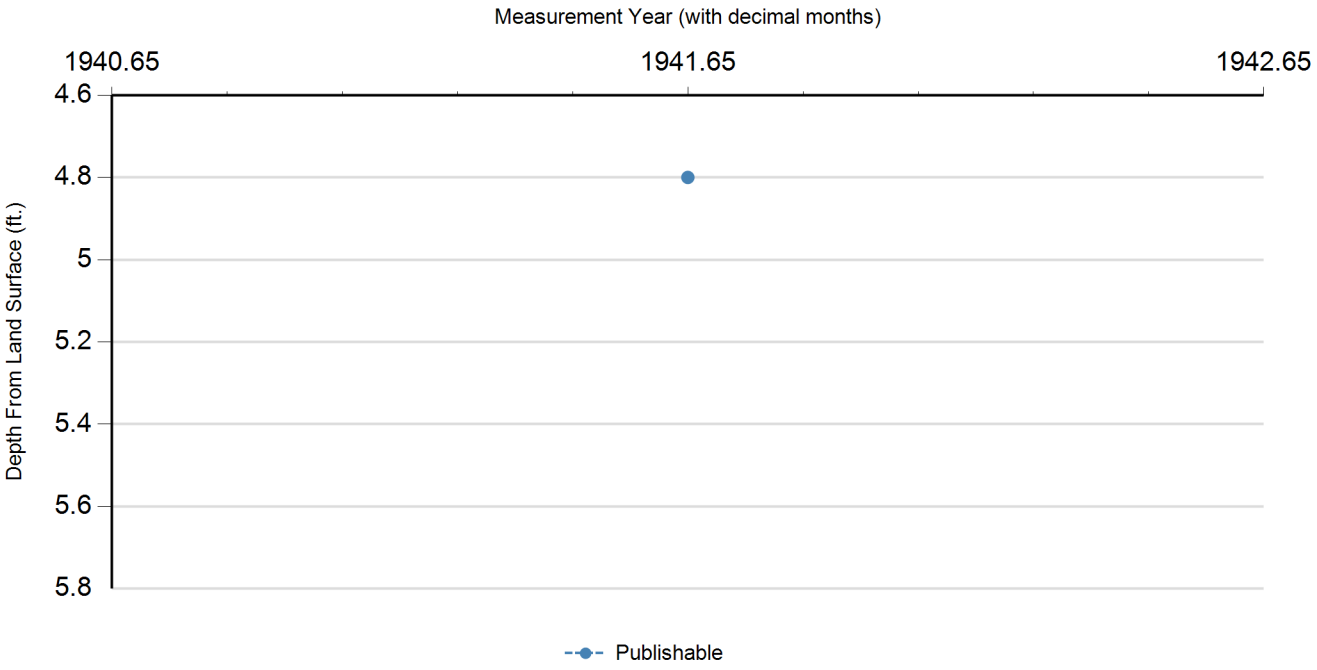
Packers - No Data

Texas Water Development Board

Texas Water Development Board (TWDB) Groundwater Database (GWDB) Well Information Report for State Well Number 61-62-901

groundwater division

Water Level Measurements



Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	8/27/1941		4.8		20.2	1	Other or Source of Measurement Unknown	Unknown		

Code Descriptions

Status Code	Status Description
P	Publishable

Texas Water Development Board (TWDB) Groundwater Database (GWDB) Well Information Report for State Well Number 61-62-901

Water Quality Analysis

Sample Date: 8/27/1941 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** Texas Department of Health

Sampled Aquifer: Chicot Aquifer, Upper

Analyzed Lab: University of Texas **Reliability:** Reliability unknown or not available

Collection Remarks: Analytical results from M-146

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		125.41	mg/L as CACO3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		153.04	mg/L	
00910	CALCIUM (MG/L)		97	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		94	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		262	mg/L as CACO3	
00920	MAGNESIUM (MG/L)		5.1	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		45	mg/L as NO3	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		0.67		
00932	SODIUM, CALCULATED, PERCENT		17	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)	calculated	25	mg/L	
00945	SULFATE, TOTAL (MG/L AS SO4)		23	mg/L as SO4	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		364	mg/L	

** Value may not display all significant digits for parameter in results, check Scanned Documents for laboratory paperwork..*

GWDB DISCLAIMER: Except where noted, all of the information provided in the Texas Water Development Board (TWDB) Groundwater Database (https://www.twdb.texas.gov/groundwater/data/gwdbrpt.asp) is believed to be accurate and reliable; however, the TWDB assumes no responsibility for any errors appearing in rules or otherwise. Further, TWDB assumes no responsibility for the use of the information provided. PLEASE NOTE that users of these data are responsible for checking the accuracy, completeness, currency and/or suitability of all information themselves. TWDB makes no guarantees or warranties as to the accuracy, completeness, currency, or suitability of the information provided via the Groundwater Database (GWDB). TWDB specifically disclaims any and all liability for any claims or damages that may result from providing GWDB data or the information it contains. For additional information or answers to questions concerning the TWDB GWDB, contact the Groundwater Data Team at GroundwaterData@twdb.texas.gov.

670175 (Rose Injector #1 Water Rig Supply Well)

CONFIDENTIAL BUSINESS INFORMATION

STATE OF TEXAS WELL REPORT for Tracking #670175

Owner: **ExxonMobil**

Address: **22777 Springwoods Village Pkwy**
Spring, TX 77389

Well Location: **Lawhon Rd**
China, TX 77613

FROM THE INTER HYW 90 AND GREEN POND GUILLY RD GO S ON GREEN POND GULLY RD FOR 3.75 MI THEN TURN E ON LAWHON RD THEN GO 1.0MI TO LOCATION ENTRANCE THEN GO S TO THE WELL AT GPS 29.999857, -94.283210

Well County: **Jefferson**

Owner Well #: **Rose Injector #1**

Grid #: **64-06-3**

Latitude: **29° 59' 59.49" N**

Longitude: **094° 16' 59.56" W**

Elevation: **24 ft. above sea level**

Type of Work: **New Well**

Proposed Use: **Rig Supply**

Drilling Start Date: **6/14/2024** Drilling End Date: **6/14/2024**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
7.875	**0**	**300**

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
220	**300**	**Gravel**	**1**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**12**	**Cement 5 Bags/Sacks**

Seal Method: **Gravity**

Sealed By: **Driller**

Distance to Property Line (ft.): **>150**

Distance to Septic Field or other concentrated contamination (ft.): **>150**

Distance to Septic Tank (ft.): **>150**

Method of Verification: **Measuring Wheel**

Surface Completion: **Surface Sleeve Installed**

Surface Completion by Driller

Water Level: **80 ft.** below land surface on **2024-06-14** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **HYDROLINE DRILLING LLC**

706 GLADNEY ST
MINDEN, LA 71055

Driller Name: **Spencer White** License Number: **60321**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**130**	**Shale**
130	**160**	**Sand**
160	**200**	**Shale**
200	**220**	**Stripping**
220	**300**	**Sand**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	**Blank**	**New Plastic (PVC)**	**40**	**0**	**220**
4	**Screen**	**New Plastic (PVC)**	**40 0.032**	**220**	**300**

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670177 (Rose Injector #2 Water Rig Supply Well)

STATE OF TEXAS WELL REPORT for Tracking #670177

Owner:	**ExxonMobil**	Owner Well #:	**Rose Injector #2**
Address:	**22777 Springwoods Village Pkwy Spring, TX 77389**	Grid #:	**64-06-2**
Well Location:	**Lawhon Rd China, TX 77613**	Latitude:	**29° 59' 26.58" N**
		Longitude:	**094° 17' 55.08" W**
	FROM THE INTER OF HWY 90 AND GREEN POND GULLY RD TRAVEL S ON GREEN POND GULLY RD FOR 3.75 MI TO LAWHON RD - THEN TRAVEL E 400 FT ON LAWHON RD TO A LEASE RD ON THE S SIDE OF THE RD - THEN TRAVEL 0.63 MI S ON LEASE RD TO LOCATION	Elevation:	**24 ft. above sea level**
Well County:	**Jefferson**		

Type of Work: **New Well** Proposed Use: **Rig Supply**

Drilling Start Date: **7/2/2024** Drilling End Date: **7/2/2024**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**7.875**	**0**	**300**

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**240**	**300**	**Gravel**	**1**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**12**	**Cement 5 Bags/Sacks**

Seal Method: **Gravity**

Sealed By: **Driller**

Distance to Property Line (ft.): **>150**

Distance to Septic Field or other concentrated contamination (ft.): **>150**

Distance to Septic Tank (ft.): **>150**

Method of Verification: **Measuring Wheel**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **80 ft.** below land surface on **2024-07-02** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **HYDROLINE DRILLING LLC**

706 GLADNEY ST
MINDEN, LA 71055

Driller Name: **Spencer White** License Number: **60321**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**240**	**Shale**
240	**300**	**Sand**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	**Blank**	**New Plastic (PVC)**	**40**	**0**	**240**
4	**Screen**	**New Plastic (PVC)**	**40 0.032**	**240**	**300**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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P.O. Box 12157
Austin, TX 78711
(512) 334-5540

674757 (Rose Injector #3 Water Rig Supply Well)

STATE OF TEXAS WELL REPORT for Tracking #674757

Owner:	**ExxonMobil**	Owner Well #:	**3**
Address:	**22777 Springwoods Village Pkwy Spring, TX 77389**	Grid #:	**61-62-8**
Well Location:	**Green Pond Gully Rd China, TX 77613**	Latitude:	**30° 00' 44.74" N**
		Longitude:	**094° 17' 52.47" W**
	From the intersection of Hwy 90 and Green Pond Gully Rd, travel south on Green Pond Gully Rd for 2.94 miles and turn west for 0.11 miles to well site.	Elevation:	**25 ft. above sea level**
Well County:	**Jefferson**		

Type of Work: **New Well** Proposed Use: **Rig Supply**

Drilling Start Date: **7/18/2024** Drilling End Date: **7/19/2024**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
7.875	**0**	**300**

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
220	**300**	**Gravel**	**#1**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**50**	**Cement 8 Bags/Sacks**

Seal Method: **Pumped**

Sealed By: **Driller**

Distance to Property Line (ft.): **> 150ft**

Distance to Septic Field or other concentrated contamination (ft.): **>200ft**

Distance to Septic Tank (ft.): **> 200ft**

Method of Verification: **Wheel/GIS**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **88 ft.** below land surface on **2024-07-19** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **Submersible** Pump Depth (ft.): **180**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **HYDROLINE DRILLING LLC**

706 GLADNEY ST
MINDEN, LA 71055

Driller Name: **Spencer Wade White** License Number: **60321**

Apprentice Name: **Derrick Wyatt** Apprentice Number: **61365**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**20**	**shale**
20	**100**	**Brown Sand**
100	**220**	**Brown shale**
220	**240**	**Brown shale/Powder Sand**
240	**300**	**Sand**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	**Blank**	**New Plastic (PVC)**	**40**	**0**	**220**
4	**Screen**	**New Plastic (PVC)**	**40 0.032**	**220**	**300**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

675893 (Bead Farm Company 4 Water Rig Supply Well)

CONFIDENTIAL BUSINESS INFORMATION

STATE OF TEXAS WELL REPORT for Tracking #675893

Owner:	**ExxonMobil**	Owner Well #:	**Bead Farm #4**
Address:	**22777 Springwoods Village Pkwy Spring, TX 77613**	Grid #:	**61-62-8**
Well Location:	**From the intersection of HWY 90 and Green Pond Gully Rd, travel south on Green Pond Gully Rd for 2.18 miles to location entrance on west side of road. Follow location entrance 0.1 miles to location Beaumont, TX 77713**	Latitude:	**30° 01' 19.01" N**
		Longitude:	**094° 17' 39.12" W**
		Elevation:	**26 ft. above sea level**
Well County:	**Jefferson**		

Type of Work: **New Well** Proposed Use: **Rig Supply**

Drilling Start Date: **8/15/2024** Drilling End Date: **8/15/2024**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**7.875**	**0**	**300**

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**220**	**300**	**Gravel**	**#1**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**50**	**Cement 10 Bags/Sacks**

Seal Method: **Gravity**

Sealed By: **Driller**

Distance to Property Line (ft.): **> 100ft**

Distance to Septic Field or other concentrated contamination (ft.): **> 150 ft**

Distance to Septic Tank (ft.): **> 150 ft**

Method of Verification: **gis/wheel**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **88 ft.** below land surface on **2024-08-15** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **Submersible** Pump Depth (ft.): **200**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **HYDROLINE DRILLING LLC**

706 GLADNEY ST
MINDEN, LA 71055

Driller Name: **Spencer Wade White** License Number: **60321**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**115**	**shale**
115	**120**	**Rock**
120	**200**	**shale**
200	**220**	**stripping**
220	**300**	**sand**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	**Blank**	**New Plastic (PVC)**	**40**	**0**	**220**
4	**Screen**	**New Plastic (PVC)**	**40 0.032**	**220**	**300**

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CONFIDENTIAL BUSINESS INFORMATION

689934

CONFIDENTIAL BUSINESS INFORMATION

STATE OF TEXAS WELL REPORT for Tracking #689934

Owner:	**ExxonMobil LCS Onshore Storage LLC**	Owner Well #:	**MW1**
Address:	**22777 Springwoods Village Pkwy Spring, TX 77389**	Grid #:	**64-06-3**
Well Location:	**Lawhon Rd China, TX 77613**	Latitude:	**29° 59' 57.37" N**
Well County:	**Jefferson**	Longitude:	**094° 17' 08.34" W**
		Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Monitor**

Drilling Start Date: **9/19/2024** Drilling End Date: **9/19/2024**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
6	**0**	**25**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
3	**25**	**Sand**	**20/40**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**1**	**Concrete 0.5 Bags/Sacks**
1	**3**	**Bentonite 1 Bags/Sacks**

Seal Method: **Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Stick-Up completion** **Surface Completion by Driller**

Water Level: **15 ft.** below land surface on **2024-09-19** Measurement Method: **Observed in soil sample**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **BEST DRILLING SERVICES, INC.**

P.O. BOX 70822
Houston, TX 77270

Driller Name: **Ali Firouzbakht** License Number: **4997**

Apprentice Name: **Calistro Campozano** Apprentice Number: **56591**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**GRAVEL Pad**
1	**15**	**CLAY**
15	**19**	**Clayey SILT**
19	**25**	**Silty SAND**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	**Riser**	**New Plastic (PVC)**	**40**	**-3**	**4**
2	**Screen**	**New Plastic (PVC)**	**40 0.010**	**4**	**24**

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CONFIDENTIAL BUSINESS INFORMATION

689935

CONFIDENTIAL BUSINESS INFORMATION

STATE OF TEXAS WELL REPORT for Tracking #689935

Owner:	**ExxonMobil LCS Onshore Storage LLC**	Owner Well #:	**MW2**
Address:	**22777 Springwoods Village Pkwy Sping, TX 77389**	Grid #:	**64-06-2**
Well Location:	**3rd Ave China, TX 77613**	Latitude:	**29° 59' 26.23" N**
Well County:	**Jefferson**	Longitude:	**094° 17' 54.96" W**
		Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Monitor**

Drilling Start Date: **9/17/2024** Drilling End Date: **9/17/2024**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
6	**0**	**25**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
3	**25**	**Sand**	**20/40**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**1**	**Concrete 0.5 Bags/Sacks**
1	**3**	**Bentonite 1 Bags/Sacks**

Seal Method: **Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Stick-Up completion** **Surface Completion by Driller**

Water Level: **15 ft.** below land surface on **2024-09-17** Measurement Method: **Observed in soil sample**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **BEST DRILLING SERVICES, INC.**

P.O. BOX 70822
Houston, TX 77270

Driller Name: **Ali Firouzbakht** License Number: **4997**

Apprentice Name: **Calistro Campozano** Apprentice Number: **56591**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1.5**	**GRAVEL Pad**
1.5	**14**	**CLAY**
14	**20**	**Silty CLAY**
20	**25**	**Sandy CLAY**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	**Riser**	**New Plastic (PVC)**	**40**	**-3**	**4**
2	**Screen**	**New Plastic (PVC)**	**40 0.010**	**4**	**24**

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689936

CONFIDENTIAL BUSINESS INFORMATION

STATE OF TEXAS WELL REPORT for Tracking #689936

Owner:	**ExxonMobil LCS Onshore Storage LLC**	Owner Well #:	**MW3**
Address:	**22777 Springwoods Village Pkwy Spring, TX 77389**	Grid #:	**61-62-8**
		Latitude:	**30° 00' 44.57" N**
Well Location:	**Green Pond Gully Rd China, TX 77613**	Longitude:	**094° 17' 52.69" W**
		Elevation:	**No Data**
Well County:	**Jefferson**		

Type of Work: **New Well** Proposed Use: **Monitor**

Drilling Start Date: **9/17/2024** Drilling End Date: **9/17/2024**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
6	**0**	**25**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
3	**25**	**Sand**	**20/40**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**1**	**Concrete 0.5 Bags/Sacks**
1	**3**	**Bentonite 1 Bags/Sacks**

Seal Method: **Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Stick-Up completion** **Surface Completion by Driller**

Water Level: **15 ft.** below land surface on **2024-09-17** Measurement Method: **Observed in soil sample**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **BEST DRILLING SERVICES, INC.**

P.O. BOX 70822
Houston, TX 77270

Driller Name: **Ali Firouzbakht** License Number: **4997**

Apprentice Name: **Calistro Campozano** Apprentice Number: **56591**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1.5**	**GRAVEL Pad**
1.5	**15**	**CLAY**
15	**25**	**Silty SAND**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	**Riser**	**New Plastic (PVC)**	**-40**	**-3**	**4**
2	**Screen**	**New Plastic (PVC)**	**40 0.010**	**4**	**24**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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689937

STATE OF TEXAS WELL REPORT for Tracking #689937

Owner:	**ExxonMobil LCS Onshore Storage LLC**	Owner Well #:	**MW4**
Address:	**22777 Springwoods Village Pkwy Spring, TX 77389**	Grid #:	**61-62-9**
Well Location:	**Lawhon Rd China, TX 77613**	Latitude:	**30° 00' 09.65" N**
Well County:	**Jefferson**	Longitude:	**094° 16' 26.51" W**
		Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Monitor**

Drilling Start Date: **9/18/2024** Drilling End Date: **9/18/2024**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
6	**0**	**20**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
3	**20**	**Sand**	**20/40**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**1**	**Concrete 0.5 Bags/Sacks**
1	**3**	**Bentonite 1 Bags/Sacks**

Seal Method: **Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Stick-Up completion** **Surface Completion by Driller**

Water Level: **14 ft.** below land surface on **2024-09-18** Measurement Method: **Observed in soil sample**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **BEST DRILLING SERVICES, INC.**

P.O. BOX 70822
Houston, TX 77270

Driller Name: **Ali Firouzbakht** License Number: **4997**

Apprentice Name: **Calistro Campozano** Apprentice Number: **56591**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**10**	**CLAY**
10	**15**	**SILT w/CLAY**
15	**20**	**Silty SAND**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	**Riser**	**New Plastic (PVC)**	**40**	**-3**	**4**
2	**Screen**	**New Plastic (PVC)**	**40 0.010**	**4**	**19**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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CONFIDENTIAL BUSINESS INFORMATION

689938

STATE OF TEXAS WELL REPORT for Tracking #689938

Owner:	**ExxonMobil LCS Onshore Storage LLC**	Owner Well #:	**TW1**
Address:	**22777 Springwoods Village Pkwy Spring, TX 77389**	Grid #:	**64-06-3**
Well Location:	**Lawhon Rd China, TX 77613**	Latitude:	**29° 59' 40.09" N**
Well County:	**Jefferson**	Longitude:	**094° 16' 10.6" W**
		Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Monitor**

Drilling Start Date: **9/19/2024** Drilling End Date: **9/19/2024**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
6	**0**	**20**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
3	**20**	**Sand**	**20/40**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**1**	**Concrete 0.5 Bags/Sacks**
1	**3**	**Bentonite 1 Bags/Sacks**

Seal Method: **Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Stick-Up completion** **Surface Completion by Driller**

Water Level: **11 ft.** below land surface on **2024-09-19** Measurement Method: **Observed in soil sample**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **BEST DRILLING SERVICES, INC.**

P.O. BOX 70822
Houston, TX 77270

Driller Name: **Ali Firouzbakht** License Number: **4997**

Apprentice Name: **Calistro Campozano** Apprentice Number: **56591**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1.5**	**GRAVEL Pad**
1.5	**2**	**Road Base**
2	**11**	**CLAY**
11	**12**	**Clayey SILT**
12	**20**	**SAND w/SILT**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
2	**Riser**	**New Plastic (PVC)**	**40**	**-3**	**4**
2	**Screen**	**New Plastic (PVC)**	**40 0.010**	**4**	**19**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Railroad Commission of Texas Attachment B

Well Construction Plan

ExxonMobil

Underground Injection Control – Class VI Permit Application for Rose CCS Project Injection Wells No. 01, No. 02, and No. 03

SECTION 4 – WELL CONSTRUCTION PLAN AND OPERATING CONDITIONS

Rose Carbon Capture and Storage Project

Jefferson County, Texas

ExxonMobil Low Carbon Solutions Onshore Storage LLC

May 2025

SECTION 4 – Well Construction Plan and Operating Conditions

TABLE OF CONTENTS

4.0 Well Construction Plan and Operating Conditions 5
4.1 Objectives 5
4.2 Engineering Design 6
4.2.1 Overview of Injection Well Perforation Strategy 7
4.2.2 Production Casing Design and Completion 9
4.2.3 Injection Tubing Design and Completion 13
4.2.4 Surface Conductor Pipe Design and Completion 15
4.2.5 Surface Casing Design and Completion 15
4.2.6 Injection Tubing Packer Design and Completion 17
4.2.7 Safety and Continuous Monitoring Device Design and Completion 18
4.2.8 Wellhead Equipment Design and Completion 20
4.3 Well Drilling and Completion Design 23
4.3.1 Drilling and Completion Design for Injection Well No. 01 23
4.3.2 Drilling and Completion Design for Injection Well No. 02 24
4.3.3 Drilling and Completion Design for Injection Well No. 03 26
4.3.4 Injection Well Completion Stage and Injection Interval 28
4.4 Pre-Operational Testing Plan 30
4.4.1 Tests During Well Drilling and Construction 31
4.4.2 Injection and Confining Zone Core Sampling 31
4.4.3 Injection Zone Characterization 32
4.4.4 Fracture Pressure, Fluid Characteristics, and Downhole Conditions 33
4.4.5 Injection and Confining Zone Formation Testing 33
4.4.6 Quality Assurance Surveillance Plan 35
4.5 Injection Well Operating Strategy 35
4.5.1 Injection Rate and Pressure 35
4.5.2 CO2 Volume 38
4.5.3 Annulus Pressure 38
4.5.4 Well Stimulation Procedures 38
4.5.5 CO2 Stream Characteristics 39
4.6 Operational Reporting Plan 40

4.7 Injection Well Construction and Operation Summary 40

List of Tables

Table 4-1: Injection Sequencing Strategy for Injection Well No. 01 8
Table 4-2: Injection Sequencing Strategy for Injection Well No. 02 8
Table 4-3: Injection Sequencing Strategy for Injection Well No. 03 8
Table 4-4: Production Casing Specifications 10
Table 4-5: Production Casing Design Calculations.....11
Table 4-6: Production Casing Cement Volume Calculations for Injection Well No. 01 11
Table 4-7: Production Casing Cement Volume Calculations for Injection Well No. 02 12
Table 4-8: Production Casing Cement Volume Calculations for Injection Well No. 03 12
Table 4-9: Production Casing Centralizer Program 12
Table 4-10: Composition of the Most-Concentrated Constituents in Injectate.....13
Table 4-11: CO2 Standard Conditions 13
Table 4-12: Input Injection Parameters for Injection Wells No. 01, No. 02, and No. 03.....13
Table 4-13: Modeled Injection Rates and Pressures for Injection Well No. 01.....13
Table 4-14: Modeled Injection Rates and Pressures for Injection Well No. 02.....14
Table 4-15: Modeled Injection Rates and Pressures for Injection Well No. 03.....14
Table 4-16: Tubing Specifications 14
Table 4-17: Engineering Design Calculations for Tubing.....15
Table 4-18: Summary of Design for Surface Casing Centralizer 15
Table 4-19: Summary of Design for Surface Casing Completion for Injection Wells No. 01, No. 02, and No. 03 16
Table 4-20: Surface Casing Design Calculations for Injection Wells.....17
Table 4-21: Surface Casing Cement Volume Calculations for Injection Wells 17
Table 4-22: Injection Intervals for Injection Well No. 01.....29
Table 4-23: Injection Intervals for Injection Well No. 02.....30
Table 4-24: Injection Intervals for Injection Well No. 03.....30
Table 4-25: Summary of Full Core Sample Depths from Stratigraphic and Injection Well.....31
Table 4-26: Open-Hole Logging Plan for Injection Wells No. 01, No. 02, and No. 03 32
Table 4-27: Cased-Hole Logging Plan for Injection Wells No. 01, No. 02, and No. 03.....32
Table 4-28: Sampling and Analysis Plan for UCCZ Water Sample Collected from Stratigraphic Well.....33

Table 4-29: Step-Rate Injection Test in Fleming 2 at the Stratigraphic Well 34
Table 4-30: Pressure Fall-Off Test in Fleming 2 at the Stratigraphic Well.....34
Table 4-31: Summary of Injection Parameters for Injection Wells No. 01, No. 02, and No. 03...35
Table 4-32: Injection Pressures and Pressure Constraints by Injection Stage for Injection Well No. 01 37
Table 4-33: Injection Pressures and Pressure Constraints by Injection Stage for Injection Well No. 02 37
Table 4-34: Injection Pressures and Pressure Constraints by Injection Stage for Injection Well No. 03 37

List of Figures

Figure 4-1: Schematic for the Injection Packer Design Tubing 18
Figure 4-2: Safety Injection Valve 19
Figure 4-3: Downhole Pressure and Temperature Gauge 20
Figure 4-4: Typical Wellhead Configuration for Injection Wells.....21
Figure 4-5: Typical Plume Profile in High Permeability Formations 28
Figure 4-6: Operational Completion Strategy for Injection Wells 29

Appendix D – Well Construction Schematics and Procedures

Appendix D.1: Well Construction Design and Completion
Appendix D.2: Coring and Logging Plan for Stratigraphic Well Bead Farm Co. # 1
Appendix D.3: Rose Stimulation Program
Appendix D.4: Material Selection Assessment

4.0 Well Construction Plan and Operating Conditions

ExxonMobil Low Carbon Solutions Onshore Storage LLC (ExxonMobil) is submitting this Underground Injection Control (UIC) Class VI permit application to the U.S. Environmental Protection Agency (EPA) for the Rose Carbon Capture and Storage (CCS) Project (Project). ExxonMobil is undertaking the Project in Jefferson County, Texas, to sequester a maximum of 5 million metric tonnes per annum (MMta) of carbon dioxide (CO2) using three injection wells over an injection period of up to 13 years. The predicted total CO2 storage is 53 million metric tonnes. The Well Construction Plan and Operating Conditions (Section 4) of the permit application contains information on the well construction and operating conditions in compliance with the requirements of the Code of Federal Regulations, Title 40, Sections 146.82 and 146.86 [40 CFR 146.82 and 146.86] and Texas Administrative Code, Part 1 Title 16 Chapter 5.

The three injection wells were designed for the sole purpose of injection and storage of CO2 safely in the Upper Frio and Fleming Sand injection intervals at the Project site, and to contain the CO2 within the injection intervals, protecting underground sources of drinking water (USDWs). The formation properties of the injection intervals make the Project site an excellent candidate for injection of CO2, with high porosity, high permeability, and brine fluids that contain approximately 5,000 feet (ft) of gross vertical sand thickness. Interbedded and overlying shale layers confine the injection intervals from USDW.

The well materials were compatible with all fluids with which they may come into contact and the design considered the depth of all porous formations, as identified during site characterization. The well design and materials were also appropriate for the proposed operating parameters. The formation testing at the injection well locations filled potential gaps in available site characterization data and addressed key uncertainties in the Area of Review (AoR) delineation modeling.

The injection well construction specifications and testing plan were tailored to account for the data acquired from the logging, testing, and preliminary results from a stratigraphic well (Bead Farm Co. #1) that was completed in close proximity to the three injection sites in 2023. The stratigraphic well (Bead Farm Co. #1) has since been converted to an above-zone monitoring well to conduct monitoring above the confining zone.

This section provides a narrative document with associated schematics and data summary tables that describe how ExxonMobil constructed the injection wells to meet the goals of 40 CFR 146.86. The engineering design is based on the collection of as much site-specific data as possible, particularly from the stratigraphic well, before submitting the Class VI Permit Application. This level of effort was undertaken to facilitate the permit modification process, between conducting the pre-construction activities required at 40 CFR 146.82(a) and the pre-operation phase activities required at 40 CFR 146.82(c).

4.1 Objectives

ExxonMobil developed the engineering design, pre-operational testing plan, and operating strategy for the injection wells to meet the following objectives:

- The injection well construction design, material specifications, and construction were compatible with the composition of the CO2 stream over the duration of the Project to reduce the potential for endangerment of USDWs [40 CFR 146.82(a)(11),(12); 146.86].

- The injection wells underwent logging and testing to assess injection well and formation performance and update the operating strategy as necessary before injection of CO2 [40 CFR 146.82(a)(8); 146.87].
- The injection well operating strategy provides continuous injection and annulus monitoring systems for each injection well to control injection pressure and trigger automatic shut-off devices and safety valves for CO2 injection, consistent with safe operating procedures [40 CFR 146.82(a)(7),(9),(10); 146.88(e)].

4.2 Engineering Design

The engineering design parameters for the three injection wells were based on the planned injection rates, injection volumes, fluid properties, and chemical properties of the injectate fluid. In addition, the engineering design included recompletion of each injection well to target-specific injection intervals to achieve the target CO2 storage amount.

ExxonMobil plans to inject a maximum volume of 5 MMta for all three injection wells, which is an approximate rate of 264 million standard cubic feet per day at standard conditions. The tubing design, including size, weight, grade, and metallurgy was based on the properties of the injectate, rate of injection, and injection pressures determined by the detailed reservoir modeling.

The casing, cement, tubing, packer, continuous monitoring devices, and wellhead equipment were selected and designed to withstand the corrosive environment to which the materials and equipment will be exposed. Each was selected to have sufficient strength and material properties to withstand the pressure, temperature, and corrosive forces to which they will be subjected in the subsurface.

The following discussion presents the engineering design basis for the well materials including casing, tubing, and cement. Well design schematics and locations are included in Appendix D.1, which illustrate the well materials, design layout, and the locations of the packer and perforation intervals as well as the well location at the Project site.

The injection wells have been permitted for drilling through the RRC. A summary of the permitted well names and American Petroleum Institute (API) numbers is as follows:

Injection Well Information:

Well Name and Number	Labelle Properties Ltd #1 **(Rose CCS Project Injection Well No. 01)**
County	Jefferson
Location (RR D, S, A)	Railroad District 3, Section 42, Abstract 874
Latitude / Longitude (NAD83)	29.999678 / -94.285108
API	4224532913

Well Name and Number	Bead Farm Co. #2 **(Rose CCS Project Injection Well No. 02)**
County	Jefferson
Location (RR D, S, A)	Railroad District 3, Section 41, Abstract 266

Latitude / Longitude (NAD83)	29.991017 / -94.298036
API	4224532911

Well Name and Number	Bead Farm #3 **(Rose CCS Project Injection Well No. 03)**
County	Jefferson
Location (RR D, S, A)	Railroad District 3, Section 8, Abstract 658
Latitude / Longitude (NAD83)	30.011778 / -94.297858
API	4224532912

The three injection wells were drilled and completed utilizing the strategy and procedures outlined in this plan. A material selection assessment was used for identifying adquate metallurgy and cement use for each injection well and can be found in Appendix D.4. Applicable and required permits and notifications were submitted to the RRC and EPA. The wells were drilled and tested as described in the pre-operational testing plan described in Section 4.4.

4.2.1 Overview of Injection Well Perforation Strategy

Each injection well was completed with a single completion string and assembly consisting of injection packer, nipple profile, safety injection valve, pressure/temperature gauges, and tubing. Upon issuance of authorization to inject, injection will start based on the intervals and injection schedules referenced below in Table 4-1 through 4-3. Once the target injection volume of CO2 is attained, that injection interval will be plugged back to isolate that interval from subsequent injection intervals shown on Figure 3-9. The next injection interval will then be completed and accessed through additional perforations to establish communication with the reservoir. CO2 will continue into that new injection interval until the target CO2 storage amount has been achieved for that interval. Tables 4-1 and 4-3 summarize the injection sequencing strategy for each injection well. The perforation depths provided in Tables 4-1 to 4-3 are based on the current geologic model described in Site Characterization (Section 2).

Table 4-1: Injection Sequencing Strategy for Injection Well No. 01

Stage	Sand Interval	Top Perf TVDSS (ft)	Bottom Perf TVDSS (ft)	Gross Thickness (ft)	Net Reservoir (ft)	Duration (years)
1	Upper Frio Sand	7,441	8,084	643	353	2.00
2	Upper Frio Sand	7,163	7,348	185	185	2.00
3	Upper Frio Sand	6,938	7,122	185	164	2.00
4	Fleming Sand 3	5,561	5,922	361	120	2.00
5	Fleming Sand 3	5,131	5,492	361	223	2.00
6	Fleming Sand 2	4,187	4,766	579	186	2.00
7	Fleming Sand 1	3,472	3,932	460	293	1.00
TVDSS = True Vertical Depth Subsea						

Table 4-2: Injection Sequencing Strategy for Injection Well No. 02

Stage	Sand Interval	Top Perf TVDSS (ft)	Bottom Perf TVDSS (ft)	Gross Thickness (ft)	Net Reservoir (ft)	Duration (years)
1	Upper Frio Sand	7,540	8,160	620	327	2.00
2	Upper Frio Sand	7,163	7,435	272	251	2.00
3	Upper Frio Sand	6,933	7,142	210	125	2.00
4	Fleming Sand 3	5,670	6,094	424	289	2.00
5	Fleming Sand 3	5,030	5,503	473	165	2.00
6	Fleming Sand 2	4,337	4,916	578	255	2.00
7	Fleming Sand 1	3,481	4,014	532	335	1.00
TVDSS = True Vertical Depth Subsea						

Table 4-3: Injection Sequencing Strategy for Injection Well No. 03

Stage	Sand Interval	Top Perf TVDSS (ft)	Bottom Perf TVDSS (ft)	Gross Thickness (ft)	Net Reservoir (ft)	Duration (years)
1	Upper Frio Sand	7,332	7,986	654	382	2.00
2	Upper Frio Sand	7,011	7,265	254	212	2.00
3	Upper Frio Sand	6,778	6,985	207	143	2.00
4	Fleming Sand 3	5,509	5,896	387	185	2.00
5	Fleming Sand 3	5,055	5,458	404	219	2.00
6	Fleming Sand 2	4,146	4,665	518	163	2.00
7	Fleming Sand 1	3,382	3,893	511	229	1.00
TVDSS = True Vertical Depth Subsea						

4.2.2 Production Casing Design and Completion

The production casing used a combination of 9-5/8-inch (in.) L-80, 13Cr-80, and 25Cr-125. In accordance with the June 25, 2024 guidance provided by EPA regarding Class VI Well Construction, 25Cr was utilized and installed across the entirety of the permitted upper confining zone. Additionally, 25Cr was installed at intra-permitted injection zone shale boundaries which correspond to notional packer placement depths and provide further redundancy. 13Cr was utilized across all perforated intervals.

The well design allowed for monitoring of each casing and tubing annulus for wellbore and mechanical integrity parameters. Appendices D.1 provide the wellbore designs and completion configurations for Injection Wells No. 01, No. 02, and No. 03, respectively, along with the certified well-location plats.

The production casing, or long-string casing, was the final, permanently cemented string of casing to be installed in each well. The production casing was run from the surface to total depth (TD) and cemented back to the surface. The key design criteria for the long string included the use of:

- 25Cr material used across the entirety of the permitted upper confining zone. Additionally, 25Cr was installed at intra-permitted injection zone shale boundaries.
- 13Cr material from the base of the permitted upper confining zone through the Fleming Sand perforation intervals and again across the Frio Sand perforation intervals
- Fiber optic line along the exterior of the production casing, terminating 50 ft into the Anahuac Shale
- CO2-compatible cement systems from 300 ft above the permitted upper confining zone across the entirety of the permitted upper confining zone to TD.

To reduce the potential for CO2 migration out of the injection interval, CO2-compatible cement was run from TD to at least 300 ft above the permitted upper confining zone, to provide a suitable barrier across the upper composite confining zone (UCCZ). By using CO2-compatible material, the cement is protected from carbonic acid, maintaining integrity throughout the life of the Project.

Throughout the life of each well, the Project will have a continual temperature monitoring system in place. The system is designed to measure and record downhole temperatures, as discussed in Section 5 – Testing and Monitoring Plan. Monitoring systems include a fiber optic cable with distributed temperature sensing outside of the 9-5/8 in. production casing. The fiber optic cable was installed at the top of the Anahuac Shale and cemented into place when the 9-5/8 in. casing-cementing job was performed.

The engineering and design parameters for the production casing are summarized in Tables 4-4 and 4-5. These depths are based on final logging of the injection wells.

Table 4-4: Production Casing Specifications

Section	OD (in.)	ID (in.)	Drift (in.)	Weight (lb/ft)	Burst (psi)	Collapse (psi)	Tensile (kips)	Intervals (ft TVD KB)		
								Well No. 01	Well No. 02	Well No. 03
9-5/8-in. L-80	9.625	8.681	8.525	47	6,870	4,760	1,086	0'–3,002'	0'–3,049'	0'–2,934'
9-5/8-in. 13Cr-80	9.625	8.681	8.525	47	6,870	4,760	1,086	3,552'–3,976', 4,233'–4,885', 5,066'–5,311'	3,597'–4,129' 4,347'–4,966' 5,147'–6,428' 6,647'–8,092'	3,476'–3,967' 4,224'–4,803' 4,946'–6,218' 6,437'–8,421'
9-5/8-in. 13Cr-80	9.625	8.535	8.379	53.5	7,930	6,620	1,244	5,311'–6,338' 6,555'–8,533'	8,092'–8,610'	N/A
9-5/8 in. 25Cr-125	9.625	8.535	8.379	53.5	12,740	8,440	1,943	3,002'–3,552', 3,976'–4,233', 4,885'–5,066', 6,338'–6,555'	3,049'–3,597' 4,129'–4,347' 4,966'–5,147' 6,428'–6,647'	2,934'–3,476' 3,967'–4,224' 4,803'–4,946' 6,218'–6,437'
9-5/8-in. L-80	9.625	8.535	8.379	53.5	7,930	6,620	1,244	8,533'–8,654'	8,610–8,731'	8,421'–8,542'

ft = feet; ID = inner diameter; KB = Kelly Bushing; kips = 1,000 pound-force; lb = pound; OD = outer diameter; psi = pounds per square inch

Table 4-5: Production Casing Design Calculations

- 9-5/8-in. Casing
- 9-5/8-in. 47 ppf L80, Semi-Premium, 0 - 3,049 ft
- 9-5/8-in. 53.5 ppf 25Cr-125, Premium, 3,049 ft – 3,597 ft, 4,129 ft – 4,347 ft, 4,966 ft – 5,147 ft, 6,428 ft – 6,647 ft
- 9-5/8-in. 47 ppf L80-13Cr, Premium, 3,597 – 4,129 ft, 4,347 ft – 4,966 ft, 5,147 ft – 6,428 ft, 6,647 ft – 8,610 ft
- 9-5/8-in. 53.5 ppf L80, Premium, 8,610 ft – 8,731 ft

9-5/8-in.	Load Type - Working Stress Design	Load (lb) or (psi)	Depth (ft)	Min SF	Depth (ft)
Burst	Tubing Leak – 2,750 psi Injection Pressure, 6.1 ppg packer fluid	2,750 (psi)	0	2.5	0
	Pressure Test – 4,000 psi with 8.5 ppg FW	4,000 (psi)	0	1.5	8,473
	Casing Frac – 2,533 psi with 7.5 ppg Inj. Fluid	2,533 (psi)	0	2.5	8,473
Tension	Green Cement – 4,000 psi with 10.0 ppg NADF	447 (kips)	0	1.8	0
	Running With Overpull – 100 kips	459 (kips)	0	2.4	0
	Buckling Check – cement to surface, injection temperature	0	0	5.2	0
Collapse	Evacuated Collapse – Full evacuation	4,531 (psi)	8,731	1.0	8,610

kips = 1,000 pound-force; lb = pound; NADF = non-aqueous drilling fluid; ppf = pounds per foot; ppg = pounds per gallon; psi = pounds per square inch; SF = safety factor
Note: maximum anticipated surface pressure = 5,000 psi (production packer setting pressure)

Tables 4-6 to 4-8 provide the production casing cement volume calculations for each injection well.

Table 4-6: Production Casing Cement Volume Calculations for Injection Well No. 01

Section	Footage (ft)	Capacity (ft^3/ft)	Excess (%)	Cement Volume (ft^3)
Surface/Production Casing Annulus	2,203’	0.335	10	812
Open Hole/Casing Annulus	6,451’	0.313	20	3,631
Shoe Track	43’	0.397	0	17
Total Volume, ft^3 (bbl)				3,252 (579)
Actual Volume Pumped, bbl (sacks)				682 (2035)

bbl = barrel; ft^3 = cubic feet

Table 4-7: Production Casing Cement Volume Calculations for Injection Well No. 02

Section	Footage (ft)	Capacity (ft^3/ft)	Excess (%)	Cement Volume (ft^3)
Surface/Production Casing Annulus	2,244	0.335	10	827
Open Hole/Casing Annulus	6,508	0.313	20	2,444
Shoe Track	80	0.397	0	32
Total Volume, ft^3 (bbl)				3,303 (588 bbl)
Actual Volume Pumped, bbl (sacks)				678 (2115)
bbl = barrel; ft^3 = cubic feet				

Table 4-8: Production Casing Cement Volume Calculations for Injection Well No. 03

Section	Footage (ft)	Capacity (ft^3/ft)	Excess (%)	Cement Volume (ft^3)
Surface/Production Casing Annulus	2,170	0.335	10	794
Open Hole/Casing Annulus	6,380	0.313	20	2,408
Shoe Track	80	0.397	0	32
Total Volume, ft^3 (bbl)				3,234 (576)
Actual Volume Pumped, bbl (sacks)				678 (2115)
bbl = barrel; ft^3 = cubic feet				

Centralizer placement for the 9-5/8-in. production casing was designed to accommodate the installation of the fiber optic cable and to promote a continuous, uniform column of cement throughout the production casing annulus achieving greater than 80% displacement efficiency. Clamp centralizers and eccentric centralizers were used to reduce the potential for damage to the fiber optic cable. The placement of centralizers through the production casing is shown in Table 4-9.

Table 4-9: Production Casing Centralizer Program

Centralizer Type	Centralizer Frequency	Injection Well No. 01		Injection Well No. 02		Injection Well No. 03	
		Depth (ft)	Qty	Depth (ft)	Qty	Depth (ft)	Qty
Centralized cross coupling protector	Every other joint	0’–2,065’	25	0’–2,124’	25	0’–2,213’	28
Cast coupling centralizer	Every other joint	0’–2,065’	25	0’–2,124’	25	0’–2,213’	28
Cast coupling centralizer	One every joint	2,188’–6,101’	79	2,245’–6,184’	79	2,213’–6,095’	83
Cable detection clamp	One every joint	3,552’–3,938’ 4,234’–4,846’, 5,066’–6,101’	48	3,597’–4,090’ 4,347’–4,927’ 5,147’–6,184’	48	3,476’–3,928’ 4,224’–4,765’ 4,946’–6,095’	52
Centralizers	One every joint	6,101’ – 8,652’	63	6,184’ – 8,729’	61	6,095’ – 8,539’	59

4.2.3 Injection Tubing Design and Completion

The 7-in. injection tubing size and material were selected for use in the Project wells based on injection volumes, rates, and injectate composition. Consistent with the design approach used for the casing strings, the injectate and the potential for a corrosive environment are important considerations when selecting the metallurgy of the tubing. The design offers protection from the potential corrosive environment of the injectate stream and potential for influx of reservoir brine.

The production tubing is 7-in. 13Cr-80, installed with an injection packer. This design uses 13Cr material or its equivalent in all sections where the CO2 will contact the tubulars. A tubing design analysis was conducted that considered calculated pipe-friction losses, exit velocities, and compression requirements.

Table 4-10: Composition of the Most-Concentrated Constituents in Injectate

Constituents	Mole Percent
Carbon dioxide	>97%
Hydrogen	<1%
Methane	<3%

The input injection parameters from the model are shown in Table 4-11 and 4-12. The calculated injection parameters are shown in Tables 4-13 through Table 4-15 for Injection Wells No. 01 to No. 03, respectively.

Table 4-11: CO2 Standard Conditions

Temperature °F	Pressure psia	Density lbm/ft^3	Enthalpy Btu/lbm	Entropy Btu/lbm-°R
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

°F = degrees Fahrenheit; °R = Rankine; Btu = British thermal unit; ft^3 = cubic feet; lbm = pounds mass; psia = pounds per square inch absolute

Table 4-12: Input Injection Parameters for Injection Wells No. 01, No. 02, and No. 03

Parameter	Injection Well No. 01	Injection Well No. 02	Injection Well No. 03
Max Injection Rate (MMta)	1.67	1.67	1.67
[redacted]	[redacted]	[redacted]	[redacted]
Injection Duration (years)	13	13	13
7-in. Tubing Inner Diameter (in.)	6.276	6.276	6.276
7-in. Tubing Initial Setting Depth (ft)	7,421’	7,516’	7,308’
Wellhead Temperature °F	80	80	80
°F = degree Fahrenheit; psi = pounds per square inch			

Table 4-13: Modeled Injection Rates and Pressures for Injection Well No. 01

Stage	Year After Startup	Max. Rate (MMta)	Avg. Rate (MMta)	Max. BHP (psi)	Avg. BHP (psi)
1	0.00	1.67	1.67	3,720	3,600

Stage	Year After Startup	Max. Rate (MMta)	Avg. Rate (MMta)	Max. BHP (psi)	Avg. BHP (psi)
2	2.00	1.67	1.67	3,543	3,462
3	4.00	1.67	1.67	3,544	3,465
4	6.00	1.43	1.43	2,825	2,667
5	8.00	1.43	1.43	2,627	2,563
6	10.00	1.26	1.26	2,140	2,100
7	12.00	1.1	1.1	1,777	1,731
psi = pounds per square inch					

Table 4-14: Modeled Injection Rates and Pressures for Injection Well No. 02

Stage	Year After Startup	Max. Rate (MMta)	Avg. Rate (MMta)	Max. BHP (psi)	Avg. BHP (psi)
1	0.00	1.67	1.67	3,828	3,666
2	2.00	1.67	1.67	3,588	3,460
3	4.00	1.67	1.67	3,482	3,439
4	6.00	0.94	0.94	2,705	2,648
5	8.00	0.94	0.94	2,623	2,553
6	10.00	1.26	1.26	2,152	2,111
7	12.00	1.32	1.32	1,868	1,791
psi = pounds per square inch					

Table 4-15: Modeled Injection Rates and Pressures for Injection Well No. 03

Stage	Year After Startup	Max. Rate (MMta)	Avg. Rate (MMta)	Max. BHP (psi)	Avg. BHP (psi)
1	0.00	1.67	1.67	3,796	3,602
2	2.00	1.67	1.67	3,518	3,419
3	4.00	1.67	1.67	3,473	3,408
4	6.00	0.94	0.94	2,617	2,581
5	8.00	0.94	0.94	2,568	2,518
6	10.00	0.73	0.73	2,165	2,102
7	12.00	0.88	0.88	1,811	1,725
psi = pounds per square inch					

13Cr material was used for the tubing strings. The tubing was installed using premium connections. A single pressure and temperature gauge was installed above the packer to monitor CO2 injection through the tubing. Tables 4-16 and 4-17 provide the tubing design parameters.

Table 4-16: Tubing Specifications

Section	OD (in.)	ID (in.)	Drift (in.)	Weight (lb/ft)	Burst (psi)	Collapse (psi)	Tensile (kips)	Intervals (ft)		
								Injection Well No. 01	Injection Well No. 02	Injection Well No. 03

7-in. L80-13Cr	7.000	6.276	6.151	26.0	7,240	5,410	604	0–7,421’	0–7,516’	1,610’–7,308’
7” 25Cr-125	7.000	6.276	6.151	26.0	11,640	6,450	944	-	-	0-1,610’
ID = inner diameter; kips = thousand pounds; lb = pound; OD = outer diameter; psi = pounds per square inch 1 maximum setting depth										

Table 4-17: Engineering Design Calculations for Tubing

Production tubing 13Cr, VAM21					
7-in.	Load Type - Working Stress Design	Load (kips) or (psi)	Depth (ft)	Min SF	Depth (ft)
Burst	Tubing	4,750 (psi)	7,500	1.31	7,500
	Injection test	2,500 (psi)	7,500	2.50	7,500
Tension	Buoyed weight + 100kips overpull	275 (kips)	0	2.19	0
	1.67 MMta per well	153 (kips)	0	3.62	0
Collapse	Long shut-in	950* (psi)	7,500	2.03	7,500
	Tubing evacuation	1,050** (psi)	7,500	1.67	7,500
kips = 1,000 pound-force; lb = pound; psi = pounds per square inch; SF = safety factor Note: maximum anticipated surface pressure = 5,000 psi (production packer setting pressure) *With 2,250 psi on the A-Annulus **With 1,800 reservoir pressure (end of life BHP) with .01 psi/ft gas gradient to surface and 2,250 on A-Annulus					

4.2.4 Surface Conductor Pipe Design and Completion

The unconsolidated nature of the sediments in the upper subsurface soil required the installation of a conductor pipe to establish and maintain borehole integrity. A cellar was installed, a 26-in. hole was drilled to depth, and a 20-in. casing was then run and cemented conventionally. A 17 1/2-in. bit was used to drill the next section of the well through the conductor pipe.

4.2.5 Surface Casing Design and Completion

The surface hole was drilled to below the USDW with a 17 1/2-in. bit, with surface casing set at approximately 2,200 ft for each of the injection wells. A string of 13 3/8-in. casing was run and cemented with the casing centered in the open hole with centralizers. The generalized surface casing centralizer placement for the injection wells is provided in Table 4-18.

Table 4-18: Summary of Design for Surface Casing Centralizer

Centralizer Type	Centralizer Frequency	Depth (ft)	Quantity
Bow Spring	One every joint	2,118’–2,203’	2
Bow Spring	One every third joint	126’–2,118’	16
		Total:	18

A summary of surface casing design parameters is presented in Tables 4-19 through 4-21. The engineering calculations for the three injection wells are based on the wellbore conditions and maximum setting depth for the surface casing at Injection Well No. 02.

Table 4-19: Summary of Design for Surface Casing Completion for Injection Wells No. 01, No. 02, and No. 03

Section	OD (in.)	ID (in.)	Drift (in.)	Weight (lb/ft)	Burst (psi)	Collapse (psi)	Tensile (kips)	Intervals (ft)		
								Injection Well No. 01	Injection Well No. 02	Injection Well No. 03
13-3/8-in. J-55	13.375	12.415	12.259	68.0	3,450	1,950	1,069	0'–2,203'	0'–2,244'	0'–2,155'
ID = inner diameter; kips = thousand pounds; lb = pound; OD = outer diameter; psi = pounds per square inch										

Table 4-20: Surface Casing Design Calculations for Injection Wells

13-3/8-in. Casing 13-3/8-in. 68 ppf J-55 BTC, 0 - 2,250 ft					
13-3/8-in.	Load Type - Working Stress Design	Load (lb) or (psi)	Depth (ft)	Min SF	Depth (ft)
Burst	Kick	1,574 (psi)	0	2.2	0
	Pressure Test – 2,750 psi with 10 ppg OBM	2,926 (psi)	2,250	1.2	2,250
Tension	Green Cement – 2,750 psi with 10 ppg OBM	422 (kips)	0	1.4	0
	Running With Overpull – 100 kips	231 (kips)	0	4.6	0
	Buckling Check – cement to surface, max MW 11.0 ppg	86 (kips)	0	12.4	0
Collapse	Cementing Collapse	297 (psi)	2,215	6.5	2,215
	Future Drilling – minimum MW 8.5 ppg	471 (psi)	2,250	4.1	2,250
BTC = buttress-thread and coupled; kips = thousand pounds; lb = pound; MW = mud weight; OBM = Oil Based Mud; ppf = pounds per foot; ppg = pounds per gallon; psi = pounds per square inch; SF = safety factor					

Table 4-21: Surface Casing Cement Volume Calculations for Injection Wells

Section	Barrels	Sacks
Injection Well No. 01	424	1575
Injection Well No. 02	394	1115
Injection Well No. 03	384	1093

4.2.6 Injection Tubing Packer Design and Completion

A wireline-set injection packer was installed with the 7-in. injection tubing. The hydrogenated nitrile rubber (HNBR) element and flow-wetted material components were specifically selected for compatibility with the expected composition of the CO2 injection stream and well fluids in the wellbore. Prior to setting the packer, the tubing annulus was filled with a non-corrosive fluid. Figure 4-1 provides a schematic illustration of a suitable packer design and completion for the Project.

Figure 4-1: Schematic for the Injection Packer Design Tubing

Injection Packer		
	Size	13Cr Halliburton Perma series or suitable equivalent 9-5/8” x 5-1/2”
	Setting	Wireline set
	Sealbore extension	6” x 10’ 13Cr
	Differential pressure	7,500psi
	Min ID (with sealbore)	4.67”
	Temperature	40-350 F

4.2.7 Safety and Continuous Monitoring Device Design and Completion

The following safety and continuous monitoring devices were designed for installation in the injection wells.

4.2.7.1 Safety Injection Valve

A 5.963-in. landing nipple profile was installed above the packer in each 7-in. tubing string to set a safety/injection valve in the injection wells. In the event that injection is interrupted, the injection valve will limit the potential for fluid backflow into the injection tubing string and will keep the reservoir pressurized until equilibrium is achieved. When the safety injection valve is closed, it will maintain the injected CO2 below the valve in a supercritical state.

The safety injection valve was run on wireline and set in a no-go nipple profile located above the injection packer. The valve was designed to the API 14A standard. The operation of the valve consists of a variable orifice that actively adjusts the instantaneous injection flow to maintain a consistent low-back pressure without a flapper or flow tube. The valve will be retrieved each time an intervention is required to isolate an injection zone or make new perforations. Figure 4-2 provides a schematic and specifications for the safety injection valve..

Figure 4-2: Safety Injection Valve



Tool Description	
Valve Description	5.500 Inject**GARD™** Safety Valve with 5.963" RPT Lock
Technical Specifications	
Polished Bore	5.963 inch
Lock Mandrel Type	Halliburton RPT
Overall Length	52 inch
Valve Max OD	4.375 inch
Valve Min ID	2.790 inch
Spacer Max OD	6.025 inch
Spacer Min ID	2.790 inch
Flow Area	6.11 sq. inch
Flow Wetted Materials	Inconel 718, Inconel 925, 6% TC, Boron
Seal Material	Hydrogenated Nitrile Rubber, PEEK
Temperature Rating	-110°F to 275°F
Working Pressure Rating	10,000 psi
Maximum Injection Rate	2.0 MTPA Liquid Carbon Dioxide
QMS System	API Q1/ISO 9001:2015 (E)
Industry Standards	API-14A, Validation Grade V3 SSISV

4.2.7.2 Downhole Pressure and Temperature Gauge Design and Completion

A single pressure and temperature gauge was run above the injection packer in each injection well to provide real-time bottomhole monitoring data. The gauge was ported to the interior of the injection tubing and pressure and temperature measurements will be fed to the surface using the installed tubing encapsulated conductor line. Figure 4-3 provides specifications of the downhole pressure and temperature gauge.

Figure 4-3: Downhole Pressure and Temperature Gauge

GAUGE OPSIS VENDOR PN WDB206-10-150



Design Specifications

SAP Part Number: 102815210
Legacy Part Number: OPS34S1015000

Name	Value
GAUGE SETUP	SINGLE
CALIBRATION PRESSURE RANGE	200-10000 PSI
CALIBRATION TEMPERATURE RANGE	25-150 DEG. C
SERVICE	H2S/CO2
SERVICE REMARKS	H2S AND/OR CO2 SERVICE BASED ON CUSTOMER DEFINED, WELL SPECIFIC CONDITIONS. APPLICATIONS MUST BE REVIEWED FOR SPECIFIC ENVIRONMENTAL COMPATIBILITY.
MATERIAL	MP-35-N
PRESSURE READING ACCURACY	0.015 % FULL SCALE
ACHIEVABLE PRESSURE RESOLUTION	LESS THAN 0.006 PSI/SEC
PRESSURE DRIFT AT MAX TEMP AND PRESSURE	0.02% FULL SCALE/YEAR
TEMPERATURE ACCURACY	0.5 DEG. C
ACHIEVABLE TEMPERATURE RESOLUTION	LESS THAN 0.005 DEG. C/SEC
MAXIMUM OD	0.765 inch
MINIMUM STORAGE TEMPERATURE	-40
MINIMUM OPERATING TEMPERATURE	-20 Deg. C
MAXIMUM STORAGE TEMPERATURE	65 Deg. C
MAXIMUM OPERATING RANDOM VIBRATION	10Grms
MAXIMUM OPERATING SHOCK	500g 2MS 1/2 SINE 6-AXIS
MAXIMUM SAMPLING RATE	0.24 second
OPERATING VOLTAGE	18:60 volt DC
MAXIMUM ACTIVE CURRENT CONSUMPTION	0.02 ampere
COMMUNICATION PROTOCOL	MODBUS RTU
GAUGE SIZE	0.75 inch
LENGTH	13.742 inch
APPROXIMATE PART WEIGHT	2.0 pound
CONNECTION TYPE	CABLE TERM
OUTSIDE DIAMETER	0.765 inch

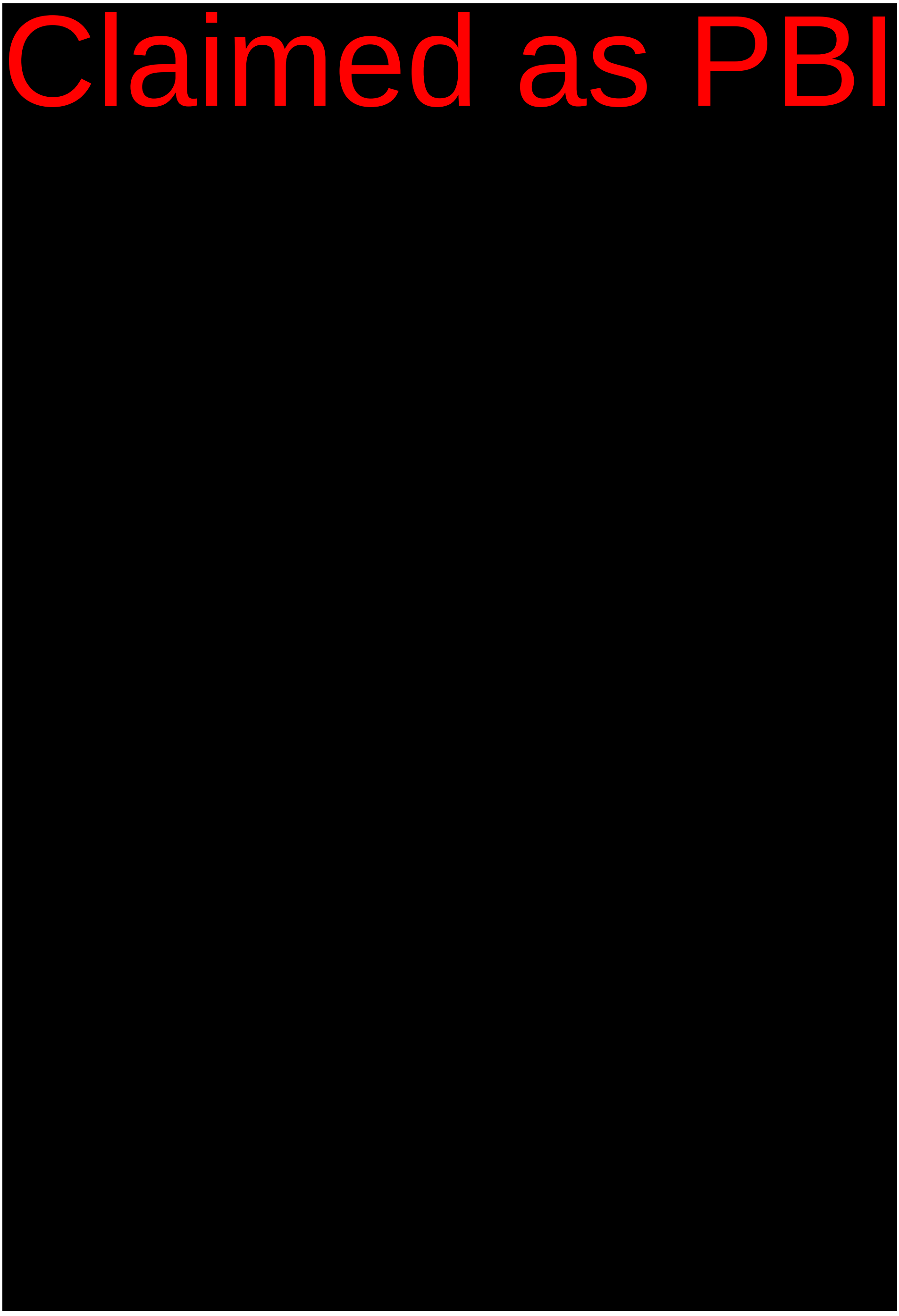
4.2.7.3 Fiber Optic Design and Completion

Fiber optic cable was run on the production casing string in each injection well to monitor temperature.

4.2.8 Wellhead Equipment Design and Completion

The wellhead was designed to manage working pressures and provide a high degree of mechanical integrity for the injection well. The wellhead equipment was manufactured with stainless-steel components across the hanger, casing spool, and tree assembly and Inconel cladding as described in Figure 4-4 below. The wellheads were configured as illustrated in Figure 4-4.

Figure 4-4: Typical Wellhead Configuration for Injection Wells



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4.3 Well Drilling and Completion Design

The drilling and completion design for each injection well is described in the following sections. Appendix D.1 provides the final well design and completions details.

4.3.1 Drilling and Completion Design for Injection Well No. 01

Claimed as PBI



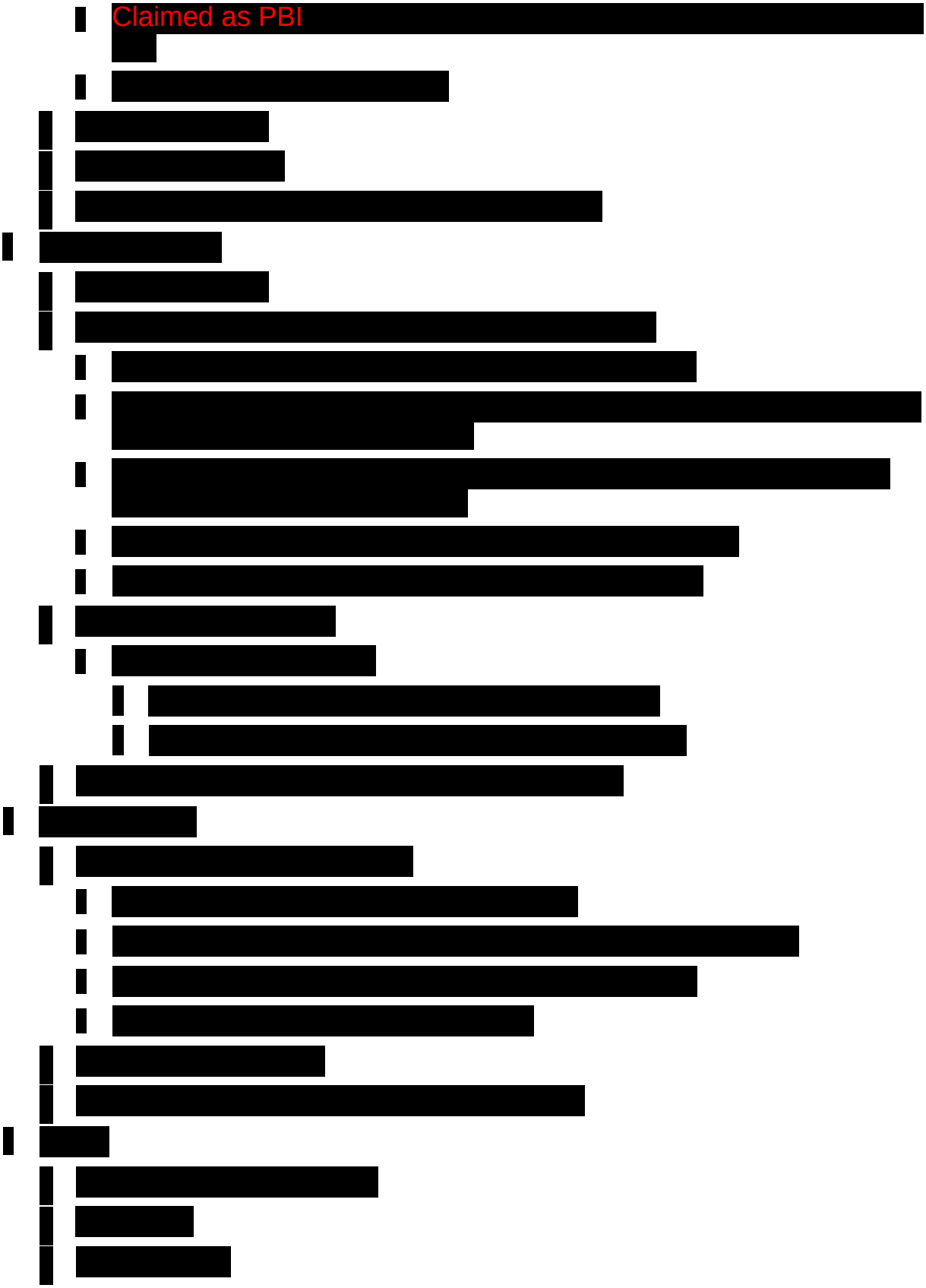
Claimed as PBI

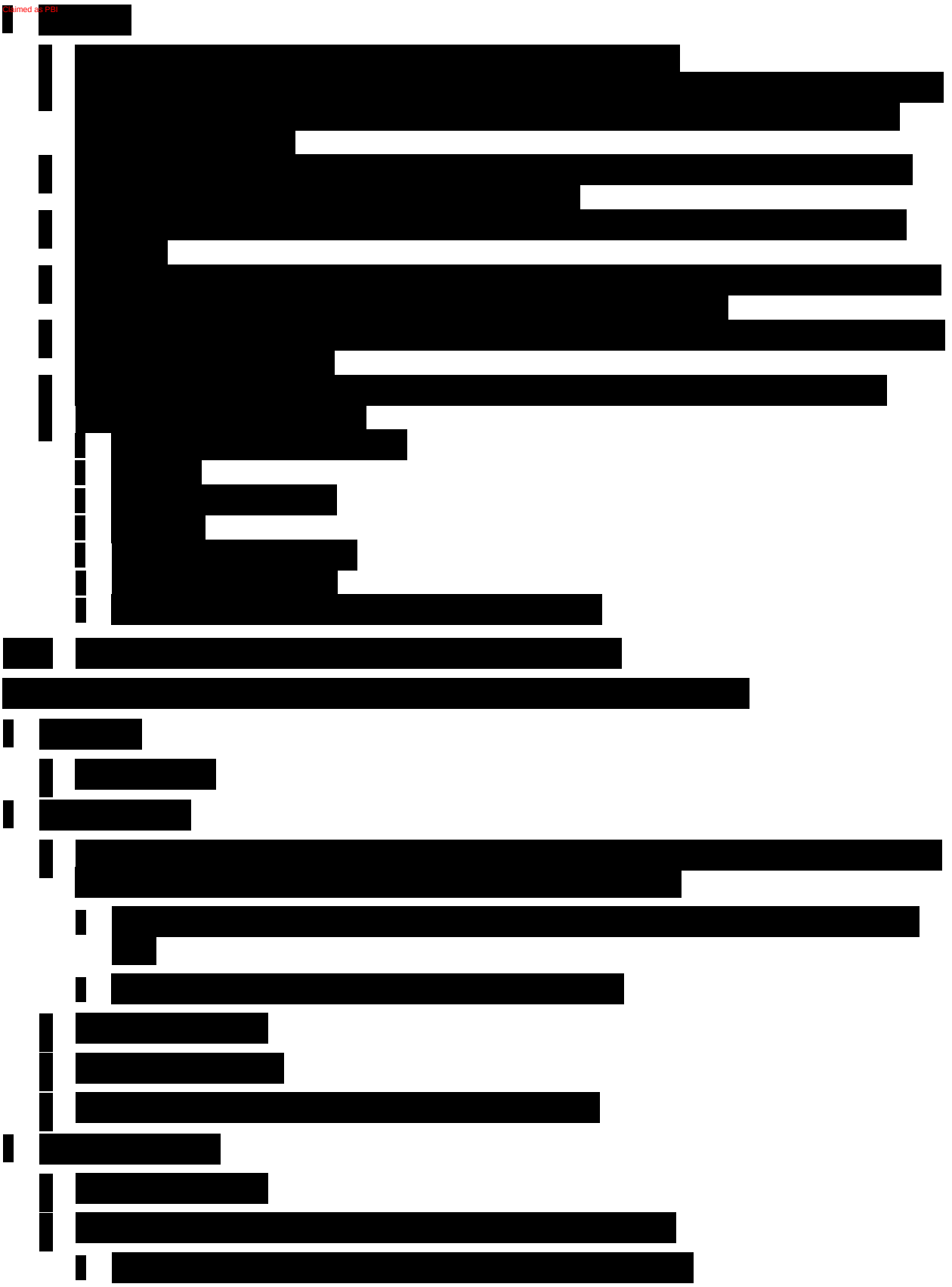


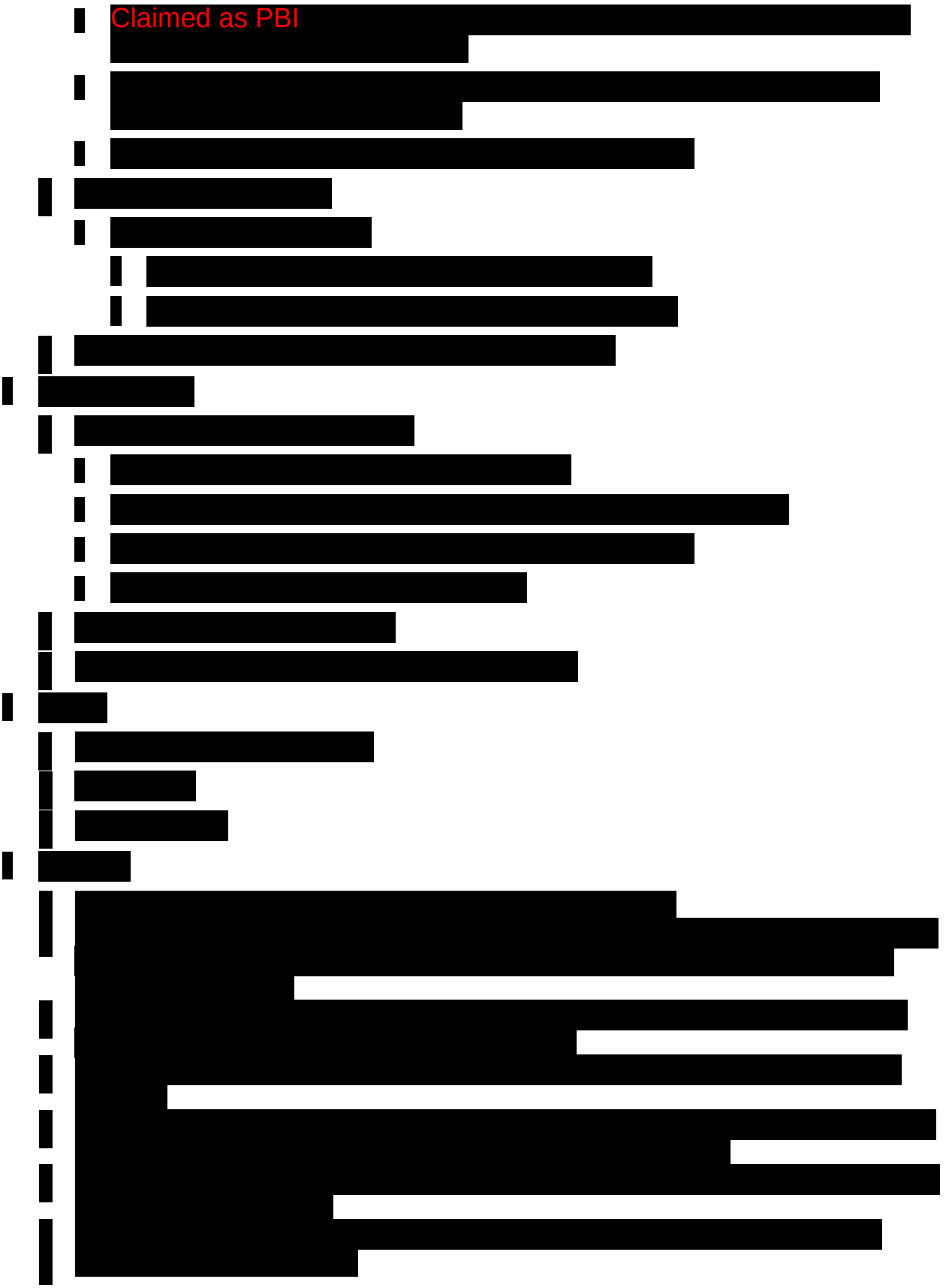
4.3.2 Drilling and Completion Design for Injection Well No. 02

Claimed as PBI




Claimed as PBI


Claimed as PBI


Claimed as PBI

Claimed as PBI

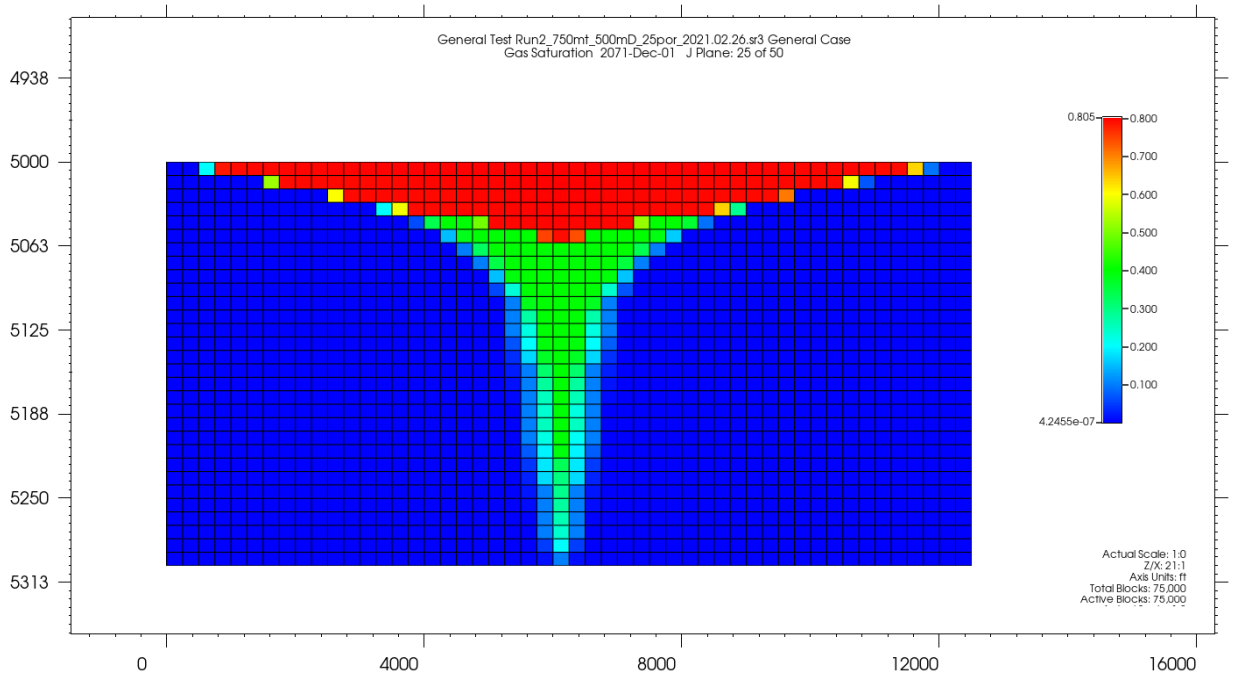
A detailed drilling and completion schematic for each injection well is included in Appendix D.1.

4.3.4 Injection Well Completion Stage and Injection Interval

The density difference between injected CO2 and connate brine, in addition to the relatively high vertical permeability in the Fleming and Upper Frio sands, allows the CO2 to migrate vertically to the top of each discrete injection interval and laterally under the confining layer (or baffle) that exists at the top of that injection interval.

The result is a significant “mushroom cap” effect wherein gravity override of the less dense CO2 plume occurs due to gravity segregation over distance, with the top of the mushroom expanding outwardly from the injection well (Figure 4-5). Additional details regarding the predicted plume movement and pressurization of the injection zone are presented in Section 3 – Area of Review and Corrective Action Plan.

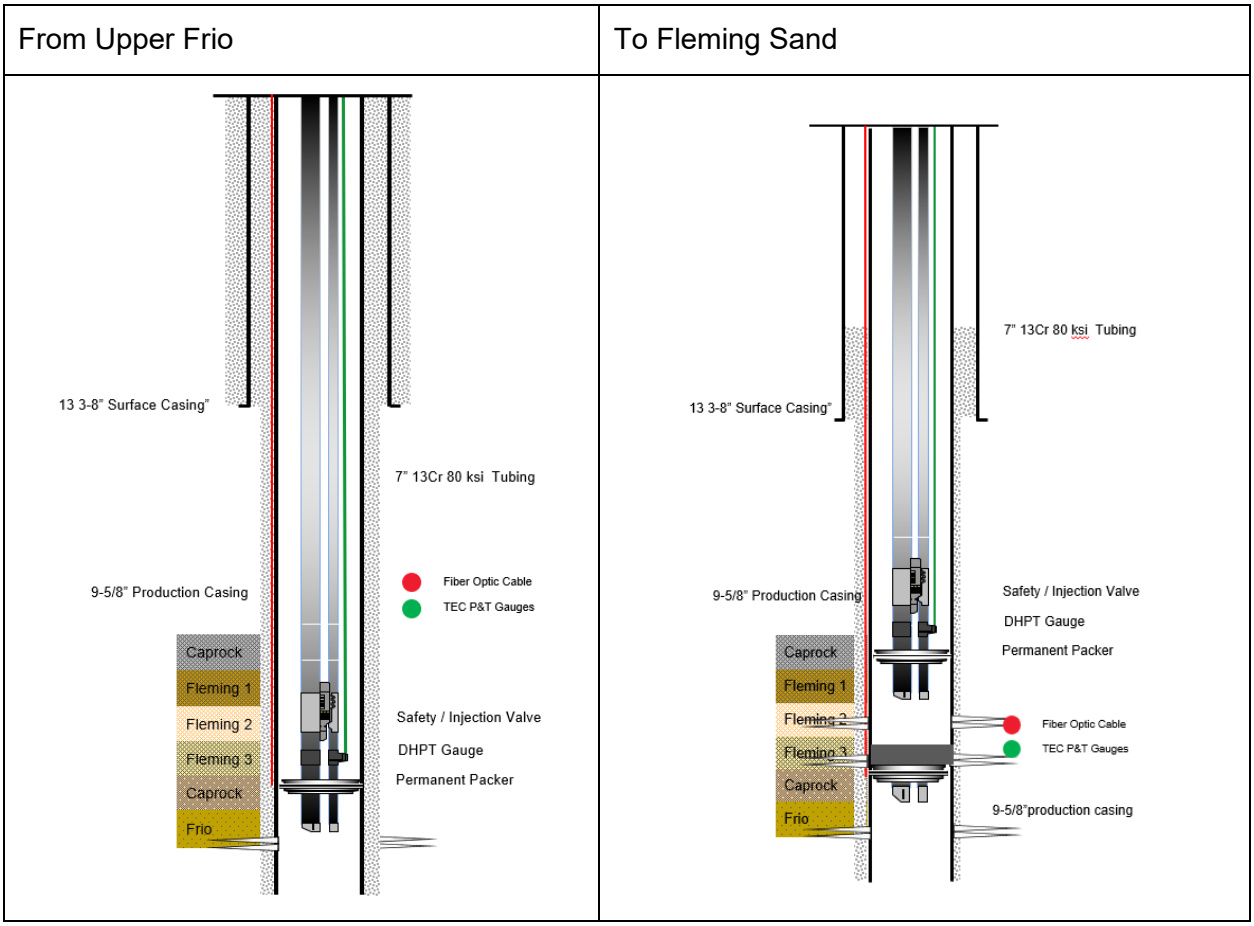
Figure 4-5: Typical Plume Profile in High Permeability Formations



To maximize the use of pore space and minimize the cone-of-influence pressure that is created due to injection, discrete injection stages must be completed over limited periods of the total operational life of the Project. Reservoir management is important for sequestration operations in thick, high permeability, poorly consolidated sand formations. Through modeling of injection in the reservoir, predictions of the CO2 plume development were generated based on this well-specific completion strategy.

As mentioned above, Figure 4-6 illustrates the sequencing plan for completing the four target injection stages within the injection interval of the injection zone. At the end of this initial injection period and each subsequent injection period, workover operations will be executed to recomplete into a new stage. A plug will be set to isolate each injection stage that has met the CO_2 storage target and the 9-5/8 in. production string will be perforated to access the next injection stage. This process will be repeated until the end of the Project operating life. Figure 4-6 depicts this process in a general form.

Figure 4-6: Operational Completion Strategy for Injection Wells



Each discrete injection stage was selected to maximize the use of the pore space and collectively maximize the usage of the acreage position for CO_2 sequestration. A summary of the planned injection stages and duration by sand unit are listed in Tables 4-22 through 4-35. These stages are based on the current geologic model and stratigraphic well results.

Table 4-22: Injection Intervals for Injection Well No. 01

Completion Stage	Completion Years after Startup	Injection Duration (years)	Top Depth TVDSS (ft)	Bottom Depth TVDSS (ft)	Net Reservoir (ft)
Upper Frio Sand	0.00	2.00	7,441	8,084	353

Completion Stage	Completion Years after Startup	Injection Duration (years)	Top Depth TVDSS (ft)	Bottom Depth TVDSS (ft)	Net Reservoir (ft)
Upper Frio Sand	2.00	2.00	7,163	7,348	185
Upper Frio Sand	4.00	2.00	6,938	7,122	164
Fleming Sand 3	6.00	2.00	5,561	5,922	120
Fleming Sand 3	8.00	2.00	5,131	5,492	223
Fleming Sand 2	10.00	2.00	4,187	4,766	186
Fleming Sand 1	12.00	1.00	3,472	3,932	293
TVDSS = True Vertical Depth Subsea					

Table 4-23: Injection Intervals for Injection Well No. 02

Completion Stage	Completion Years after Startup	Injection Duration (years)	Top Depth TVDSS (ft)	Bottom Depth TVDSS (ft)	Net Reservoir (ft)
Upper Frio Sand	0.00	2.00	7,540	8,160	327
Upper Frio Sand	2.00	2.00	7,163	7,435	251
Upper Frio Sand	4.00	2.00	6,933	7,142	125
Fleming Sand 3	6.00	2.00	5,670	6,094	289
Fleming Sand 3	8.00	2.00	5,030	5,503	165
Fleming Sand 2	10.00	2.00	4,337	4,916	255
Fleming Sand 1	12.00	1.00	3,481	4,014	335
TVDSS = True Vertical Depth Subsea					

Table 4-24: Injection Intervals for Injection Well No. 03

Completion Stage	Completion Years after Startup	Injection Duration (years)	Top Depth TVDSS (ft)	Bottom Depth TVDSS (ft)	Net Reservoir (ft)
Upper Frio Sand	0.00	2.00	7,332	7,986	382
Upper Frio Sand	2.00	2.00	7,011	7,265	212
Upper Frio Sand	4.00	2.00	6,778	6,985	143
Fleming Sand 3	6.00	2.00	5,509	5,896	185
Fleming Sand 3	8.00	2.00	5,055	5,458	219
Fleming Sand 2	10.00	2.00	4,146	4,665	163
Fleming Sand 1	12.00	1.00	3,382	3,893	229
TVDSS = True Vertical Depth Subsea					

4.4 Pre-Operational Testing Plan

The scope of the pre-operational testing plan included geophysical and core data collection in the stratigraphic well, fluid sampling at target intervals, and pressure testing to assess the injection intervals. The Testing and Monitoring Plan (Section 5 – Testing and Monitoring Plan) provides the data collection activities for the pre-operational phase and the operational phase of the Project. A summary of that discussion is provided below for ease of review, with reference to the complete discussion in Section 5 for the pre-operational testing plan.

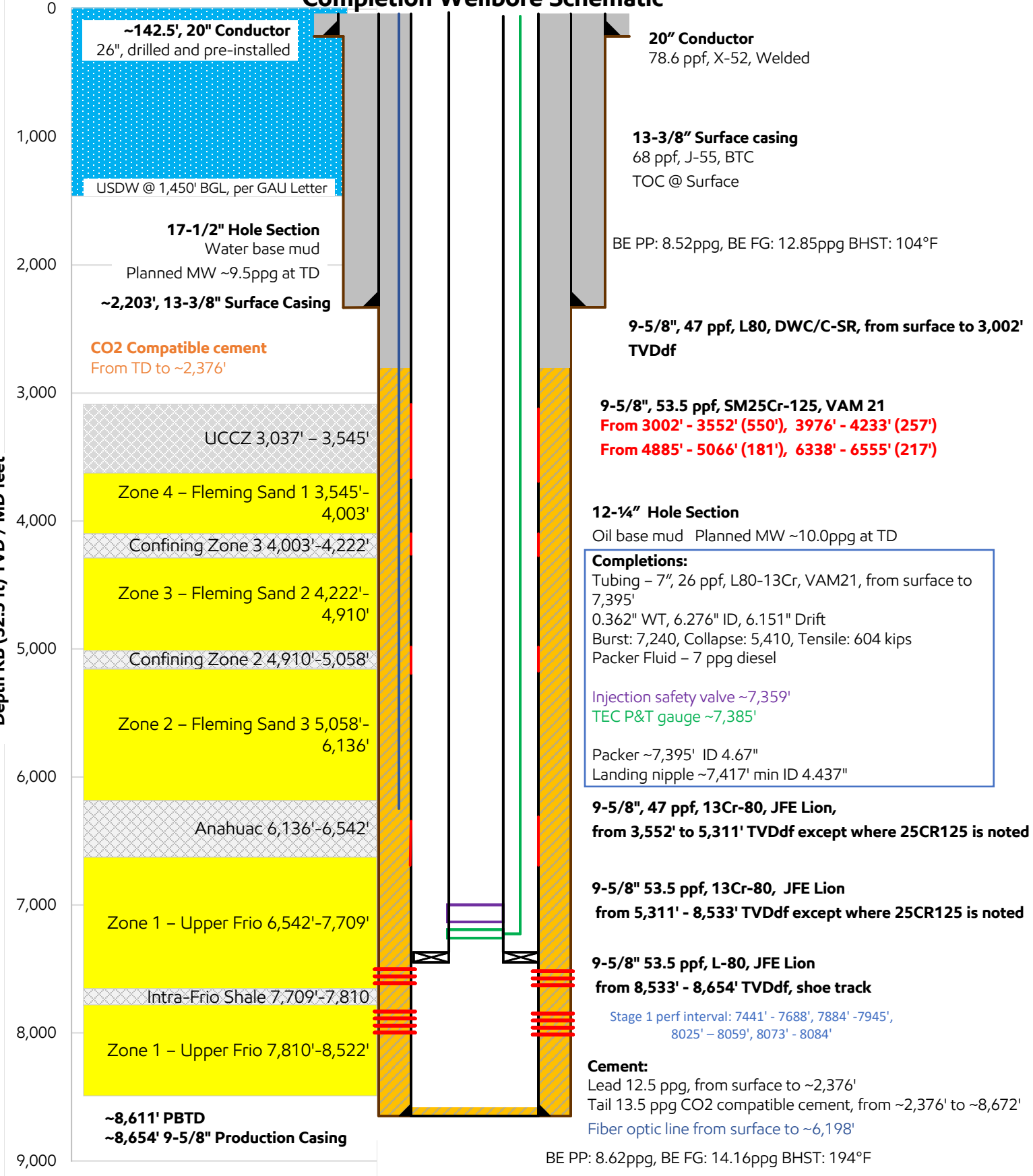
Appendix D Well Construction Schematics and Procedures

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Appendix D.1: Well Construction Design and Completion

CONFIDENTIAL BUSINESS INFORMATION

Labelle Properties Ltd No. 1
Rose CCS Project Injection Well No. 01
Completion Wellbore Schematic



CONFIDENTIAL BUSINESS INFORMATION

API No. 42-245-32913
Drilling Permit # 898448
SWR Exception

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

APPLICATION FOR PERMIT TO DRILL, RECOMPLETE, OR RE-ENTER

This facsimile W-1 was generated electronically from data submitted to the RRC.
A certification of the automated data is available in the RRC's Austin office.

FORM W-1 07/2004

Permit Status: Approved

1. RRC Operator No.: 101256

2. Operator's Name (as shown on form P-5, Organization Report): EXXONMOBIL LOW C SOL ON STOR LLC

3. Operator Address (include street, city, state, zip):
ATTN EDWARD E GRAHAM
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389-0000

4. Lease Name: LABELLE PROPERTIES LTD

5. Well No.: 1

GENERAL INFORMATION

6. Purpose of filing (mark ALL appropriate boxes): [X] New Drill [ ] Recompletion [ ] Reclass [ ] Field Transfer [ ] Re-Enter [ ] Amended [ ] Amended as Drilled (BHL) (Also File Form W-1D)

7. Wellbore Profile (mark ALL appropriate boxes): [X] Vertical [ ] Horizontal (Also File Form W-1H) [ ] Directional (Also File Form W-1D) [ ] Sidetrack

8. Total Depth: 10000

9. Do you have the right to develop the minerals under any right-of-way ? [X] Yes [ ] No

10. Is this well subject to Statewide Rule 36 (hydrogen sulfide area)? [ ] Yes [X] No

SURFACE LOCATION AND ACREAGE INFORMATION

11. RRC District No.: 03

12. County: JEFFERSON

13. Surface Location [X] Land [ ] Bay/Estuary [ ] Inland Waterway [ ] Offshore

14. This well is to be located 4.5 miles in a SE direction from China which is the nearest town in the county of the well site.

15. Section: 42

16. Block:

17. Survey: T&NO RR CO/STARK, W L

18. Abstract No.: A-874

19. Distance to nearest lease line: ft.

20. Number of contiguous acres in lease, pooled unit, or unitized tract: 569.27

21. Lease Perpendiculars: 371 ft from the NORTH line and 2016 ft from the WEST line.

22. Survey Perpendiculars: 371 ft from the NORTH line and 2016 ft from the WEST line.

23. Is this a pooled unit? [ ] Yes [X] No

24. Unitization Docket No:

25. Are you applying for Substandard Acreage Field? [ ] Yes (attach Form W-1A) [X] No

FIELD INFORMATION List all fields of anticipated completion including Wildcat. List one zone per line.

26. RRC District No.	27. Field No.	28. Field Name (exactly as shown in RRC records)	29. Well Type	30. Completion Depth	31. Distance to Nearest Well in this Reservoir	32. Number of Wells on this lease in this Reservoir
03	00006001	WILDCAT	Exploratory Test Well	8700	0.00	1

BOTTOMHOLE LOCATION INFORMATION is required for DIRECTIONAL, HORIZONTAL, AND AMENDED AS DRILLED PERMIT APPLICATIONS

Remarks
See W1 Comments attached

Certificate:
I certify that information stated in this application is true and complete, to the best of my knowledge.

Josh Calkin — Name of filer
Mar 27, 2024 — Date submitted

(281)702-5537 — Phone
Josh.Calkin@erm.com — E-mail Address (OPTIONAL)

RRC Use Only Data Validation Time Stamp: Mar 26, 2025 1:44 PM(Current Version)

CONFIDENTIAL BUSINESS INFORMATION

Permit Status: Approved

The RRC has not approved this application. Duplication or distribution of information is at the user's own risk.

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

APPLICATION FOR PERMIT TO DRILL, RECOMPLETE, OR RE-ENTER

This facsimile W-1 was generated electronically from data submitted to the RRC.
A certification of the automated data is available in the RRC's Austin office.

W-1 Comments

Permit # 898448

Approved Date: Apr 05, 2024

[RRC STAFF Mar 28, 2024 4:28 PM]: There have been problems identified with this permit (see problem letter attachment). Notification sent.; [RRC STAFF Apr 4, 2024 9:05 AM]: Problems identified with this permit are resolved.; [RRC STAFF Apr 4, 2024 9:06 AM]: Per Joshua Calkin, "This well is being drilled as a stratigraphic well to gather data. At a future date, the well may be re-completed on a future date for injection."; [RRC STAFF Apr 4, 2024 9:06 AM]: Amended plat uploaded; [RRC STAFF Apr 4, 2024 9:24 AM]: There have been problems identified with this permit (see problem letter attachment). Notification sent.; [RRC STAFF Apr 5, 2024 8:06 AM]: Problems identified with this permit are resolved.; [RRC STAFF Apr 5, 2024 8:07 AM]: Per phone conversation with Josh Calkin, this is not a pooled unit.; [RRC STAFF Apr 5, 2024 8:12 AM]: Corrected acreage from 600 acres to 569.27 acres per plat and problem response from filer.

CONFIDENTIAL BUSINESS INFORMATION

Railroad Commission of Texas

PERMIT TO DRILL, RE-COMPLETE, OR RE-ENTER ON REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

CONDITIONS AND INSTRUCTIONS

Permit Invalidation. It is the operator's responsibility to make sure that the permitted location complies with Commission density and spacing rules in effect on the spud date. The permit becomes invalid automatically if, because of a field rule change or the drilling of another well, the stated location is not in compliance with Commission field rules on the spud date. If this occurs, application for an exception to Statewide Rules 37 and 38 must be made and a special permit granted prior to spudding. Failure to do so may result in an allowable not being assigned and/or enforcement procedures being initiated.

Notice Requirements. Per H.B 630, signed May 8, 2007, the operator is required to provide notice to the surface owner no later than the 15th business day after the Commission issues a permit to drill. Please refer to subchapter Q Sec. 91.751-91.755 of the Texas Natural Resources Code for applicability.

Permit expiration. This permit expires two (2) years from the date of issuance shown on the original permit. The permit period will not be extended.

Drilling Permit Number. The drilling permit number shown on the permit MUST be given as a reference with any notification to the district (see below), correspondence, or application concerning this permit.

Rule 37 Exception Permits. This Statewide Rule 37 exception permit is granted under either provision Rule 37 (h)(2)(A) or 37(h)(2)(B). Be advised that a permit granted under Rule 37(h)(2)(A), notice of application, is subject to the General Rules of Practice and Procedures and if a protest is received under Section 1.3, "Filing of Documents," and/or Section 1.4, "Computation of Time," the permit may be deemed invalid.

Before Drilling

Fresh Water Sand Protection. The operator must set and cement sufficient surface casing to protect all usable-quality water, as defined by the Railroad Commission of Texas (RRC) Groundwater Advisory Unit (GWAU). Before drilling a well, the operator must obtain a letter from the Railroad Commission of Texas stating the depth to which water needs protection, Write: Railroad Commission of Texas, Groundwater Advisory Unit (GWAU), P.O. Box 12967, Austin, TX 78711-3087. File a copy of the letter with the appropriate district office.

Accessing the Well Site. If an OPERATOR, well equipment TRANSPORTER or WELL service provider must access the well site from a roadway on the state highway system (Interstate, U.S. Highway, State Highway, Farm-to-Market Road, Ranch-to-Market Road, etc.), an access permit is required from TxDOT. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

Water Transport to Well Site. If an operator intends to transport water to the well site through a temporary pipeline laid above ground on the state's right-of-way, an additional TxDOT permit is required. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

*NOTIFICATION

The operator is **REQUIRED** to notify the district office when setting surface casing, intermediate casing, and production casing, or when plugging a dry hole. The district office **MUST** also be notified if the operator intends to re-enter a plugged well or re-complete a well into a different regulatory field. Time requirements are given below. The drilling permit number **MUST** be given with such notifications.

During Drilling

Permit at Drilling Site. A copy of the Form W-1 Drilling Permit Application, the location plat, a copy of Statewide Rule 13 alternate surface casing setting depth approval from the district office, if applicable, and this drilling permit must be kept at the permitted well site throughout drilling operations.

***Notification of Setting Casing.** The operator MUST call in notification to the appropriate district office (phone number shown the on permit) a minimum of eight (8) hours prior to the setting of surface casing, intermediate casing, AND production casing. The individual giving notification MUST be able to advise the district office of the drilling permit number.

***Notification of Re-completion/Re-entry.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of eight (8) hours prior to the initiation of drilling or re-completion operations. The individual giving notification MUST be able to advise the district office of the drilling permit number.

Completion and Plugging Reports

Hydraulic Fracture Stimulation using Diesel Fuel: Most operators in Texas do not use diesel fuel in hydraulic fracturing fluids. Section 322 of the Energy Policy Act of 2005 amended the Underground Injection Control (UIC) portion of the federal Safe Drinking Water Act (42 USC 300h(d)) to define "underground Injection" to *EXCLUDE* " ...the underground injection of fluids or propping agents (*other than diesel fuels*) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities." (italic and underlining added.) Therefore, hydraulic fracturing may be subject to regulation under the federal UIC regulations if diesel fuel is injected or used as a propping agent. EPA defined "diesel fuel" using the following five (5) Chemical Abstract Service numbers: 68334-30-5 Primary Name: Fuels, diesel; 68476-34-6 Primary Name: Fuels, diesel, No. 2; 68476-30-2 Primary Name: Fuel oil No. 2; 68476-31-3 Primary Name: Fuel oil, No. 4; and 8008-20-6 Primary Name: Kerosene. As a result, an injection well permit would be required before performing hydraulic fracture stimulation using diesel fuel as defined by EPA on any well in Texas. Hydraulic fracture stimulation using diesel fuel as defined by EPA on a well in Texas without an injection well permit could result in enforcement action.

Producing Well. Statewide Rule 16 states that the operator of a well shall file with the Commission the appropriate completion report within ninety (90) days after completion of the well or within one hundred and fifty (150) days after the date on which the drilling operation is completed, whichever is earlier. Completion of the well in a field authorized by this permit voids the permit for all other fields included in the permit unless the operator indicates on the initial completion report that the well is to be a dual or multiple completion and promptly submits an application for multiple completion. All zones are required to be completed before the expiration date on the existing permit. Statewide Rule 40(d) requires that upon successful completion of a well in the same reservoir as any other well previously assigned the same acreage, proration plats and P-15s or P-16s (if required) or a lease plat and P-16 must be submitted with no double assignment of acreage unless authorized by rule.

Dry or Noncommercial Hole. Statewide Rule 14(b)(2) prohibits suspension of operations on each dry or non-commercial well without plugging unless the hole is cased and the casing is cemented in compliance with Commission rules. If properly cased, Statewide Rule 14(b)(2) requires that plugging operations must begin within a period of one (1) year after drilling or operations have ceased. Plugging operations must proceed with due diligence until completed. An extension to the one-year plugging requirement may be granted under the provisions stated in Statewide Rule 14(b)(2).

Intention to Plug. The operator must file a Form W-3A (Notice of Intention to Plug and Abandon) with the district office at least five (5) days prior to beginning plugging operations. If, however, a drilling rig is already at work on location and ready to begin plugging operations, the district director or the director's delegate may waive this requirement upon request, and verbally approve the proposed plugging procedures.

***Notification of Plugging a Dry Hole.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of four (4) hours prior to beginning plugging operations. The individual giving the notification MUST be able to advise the district office of the drilling permit number and all water protection depths for that location as stated in the Groundwater Advisory Unit letter.

DIRECT INQUIRIES TO: DRILLING PERMIT SECTION, OIL AND GAS DIVISION

PHONE
(512) 463-6751

MAIL:
PO Box 12967
Austin, Texas, 78711-2967

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER	DATE PERMIT ISSUED OR AMENDED	DISTRICT
898448	Apr 05, 2024	* 03
API NUMBER	**FORM W-1 RECEIVED**	**COUNTY**
42-245-32913	Mar 27, 2024	JEFFERSON
TYPE OF OPERATION	**WELLBORE PROFILE(S)**	**ACRES**
NEW DRILL	Vertical	569.27

OPERATOR 101256

EXXONMOBIL LOW C SOL ON STOR LLC

ATTN EDWARD E GRAHAM
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389-0000

NOTICE

This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored.

District Office Telephone No:

(713) 869-5001

LEASE NAME	WELL NUMBER
LABELLE PROPERTIES LTD	1
LOCATION	**TOTAL DEPTH**
4.5 miles SE direction from CHINA	10000

Section, Block and/or Survey

SECTION 42 BLOCK ABSTRACT 874

SURVEY T&NO RR CO/STARK, W L

DISTANCE TO SURVEY LINES	DISTANCE TO NEAREST LEASE LINE
371 ft. NORTH 2016 ft. WEST	ft.
DISTANCE TO LEASE LINES	**DISTANCE TO NEAREST WELL ON LEASE**
371 ft. NORTH 2016 ft. WEST	See FIELD(s) Below

FIELD(s) and LIMITATIONS:

* SEE FIELD DISTRICT FOR REPORTING PURPOSES *

FIELD NAME / LEASE NAME	ACRES / NEAREST LEASE	DEPTH	WELL # / NEAREST WE	DIST
WILDCAT	569.27	8,700	1	03
LABELLE PROPERTIES LTD			0	

RESTRICTIONS: For exploratory test only

THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS

This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.

This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

SWR #13 Formation Data

JEFFERSON (245) County

Formation	Remarks	Geological Order	Effective Date
LAFAYETTE	disposal	1	12/17/2013
CAPROCK	disposal	2	12/17/2013
SPINDLETOP SALT DOME	disposal	3	12/17/2013
FANNETT SALT DOME	disposal	4	12/17/2013
BIG HILL SALT DOME	disposal	5	12/17/2013
PLEISTOCENE-LISSIE	disposal	6	12/17/2013
MIOCENE	disposal	7	12/17/2013
FRIO	disposal	8	12/17/2013
MARINULINA	disposal	9	12/17/2013
HETEROSTEGINA	disposal	10	12/17/2013

The above list may not be all inclusive, and may also include formations that do not intersect all wellbores. The listing order of the Formation information reflects the general stratigraphic order and relative geologic age. This is a dynamic list subject to updates and revisions. It is the operator's responsibility to make sure that at the time of spudding the well the most current list is being referenced. Refer to the RRC website at the following address for the most recent information.
http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info

CONFIDENTIAL BUSINESS INFORMATION

GROUNDWATER PROTECTION DETERMINATION

Form GW-2

Groundwater Advisory Unit

Date Issued:	31 December 2024	**GAU Number:**	389625

Attention:	EXXONMOBIL LOW C SOL ON ATTN EDWARD E GRAHAM SPRING, TX 77389	**API Number:**	24532913
		County:	JEFFERSON
		Lease Name:	LaBelle Properties, Ltd
		Lease Number:	
Operator No.:	101256	**Well Number:**	1
		Total Vertical	10000
		Latitude:	29.999463
		Longitude:	-94.284922
		Datum:	NAD27

Purpose: Injection into Non-producing Zone (W-14)

Location: Survey-T&NO RR CO/STARK, W L; Abstract-874; Section-42

To protect usable-quality groundwater at this location, the Groundwater Advisory Unit of the Railroad Commission of Texas recommends:

This Initial Recommendation is for the purpose of Class VI injection only.

Usable-quality water occurs from the land surface to a depth of 1,225 feet. Moreover, the interval from the land surface to a depth of 700 feet contains water of superior quality which must be isolated from water in underlying beds.

The BASE OF UNDERGROUND SOURCES OF DRINKING WATER (USDW) is estimated to occur at a depth of 1,450 feet at the site of the referenced well.

*(SIP Purpose Only) Water Code Section 27.046(a) requires the GAU to issue a GW-2 letter containing Non-Endangerment language prior to issuance of a class VI permit. An additional letter will be required before SIP can issue a final permit because this letter is silent on endangerment of fresh water. *

Note: Unless stated otherwise, this recommendation is intended to apply to all wells drilled within 200 feet of the subject well. Unless stated otherwise, this recommendation is for normal drilling, production, and plugging operations only.

This determination is based on information provided when the application was submitted on 12/18/2024. If the location information has changed, you must contact the Groundwater Advisory Unit, and submit a new application if necessary. If you have questions, please contact us at 512-463-2741 or gau@rrc.texas.gov.

Groundwater Advisory Unit, Oil and Gas Division

CONFIDENTIAL BUSINESS INFORMATION

GROUNDWATER PROTECTION DETERMINATION

Form GW-2

Groundwater Advisory Unit

Date Issued:	28 January 2025	**GAU Number:**	390197

Attention:	EXXONMOBIL LOW C SOL ON ATTN EDWARD E GRAHAM SPRING, TX 77389	**API Number:**	24532913
		County:	JEFFERSON
		Lease Name:	LaBelle Properties, Ltd
		Lease Number:	
Operator No.:	101256	**Well Number:**	1
		Total Vertical	10000
		Latitude:	29.999463
		Longitude:	-94.284922
		Datum:	NAD27

Purpose: Injection into Non-producing Zone (W-14)

Location: Survey-T&NO RR CO/STARK, W L; Abstract-874; Section-42

To protect usable-quality groundwater at this location, the Groundwater Advisory Unit of the Railroad Commission of Texas recommends:

This Recommendation is for the purpose of Class VI injection only.

Usable-quality water occurs from the land surface to a depth of 1200 feet. Moreover, the interval from the land surface to a depth of 700 feet contains water of superior quality which must be isolated from water in underlying beds.

The BASE OF UNDERGROUND SOURCES OF DRINKING WATER (USDW) is estimated to occur at a depth of 1450 feet at the site of the referenced well.

This recommendation is applicable to an area extent within a radius of 1.0 mile of this location.

The vertical geological isolation from both bases of usable quality water and underground source of drinking water is at 3,200 feet in TVD depth (for UIC Purpose Only).

Injection into the subsurface interval from 3,400 to 8,600 feet in TVD depth, as proposed in the submitted W14 (Class VI) application dated on December 18th of 2024 , WILL NOT ENDANGER the PROTECTED WATER STRATA geologically at the proposed location in this area (for UIC Purpose Only).

Note: Unless stated otherwise, this recommendation is intended to apply to all wells drilled within 200 feet of the subject well. Unless stated otherwise, this recommendation is for normal drilling, production, and plugging operations only.

This determination is based on information provided when the application was submitted on 01/22/2025. If the location information has changed, you must contact the Groundwater Advisory Unit, and submit a new application if necessary. If you have questions, please contact us at 512-463-2741 or gau@rrc.texas.gov.

Groundwater Advisory Unit, Oil and Gas Division

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

Form W-2

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

Status: Approved
Date: 02/12/2025
Tracking No.: 326094

OIL WELL POTENTIAL TEST, COMPLETION OR RECOMPLETION REPORT,

OPERATOR INFORMATION

Operator EXXONMOBIL LOW C SOL ON STOR LLC **Operator** 101256
Operator ATTN EDWARD E GRAHAM 22777 SPRINGWOODS VILLAGE PKWY SPRING, TX 77389-0000

WELL INFORMATION

API 42-245-32913 **County:** JEFFERSON
Well No.: 1 **RRC District** 03
Lease LABELLE PROPERTIES LTD **Field** WILDCAT
RRC Lease 28199 **Field No.:** 00006001
Location Section: 42, Block: , Survey: T&NO RR CO/STARK, W L, Abstract: 874

Latitude 29 **Longitud** -94
This well is 4.5 **miles in a** SE
direction from CHINA,
which is the nearest town in the

FILING INFORMATION

Purpose of Well Record Only
Type of New Well
Well Type: Shut-In Producer **Completion or Recompletion** 10/03/2024

Type of Permit	Date	Permit No.
Permit to Drill, Plug Back, or	04/05/2024	898448
Rule 37 Exception		
Fluid Injection		
O&G Waste Disposal		
Other:		

COMPLETION INFORMATION

Spud 06/23/2024 **Date of first production after rig** 10/03/2024
Date plug back, deepening, drilling operation 06/23/2024 **Date plug back, deepening, recompletion, drilling operation** 10/03/2024
Number of producing wells on this lease this field (reservoir) including this 0 **Distance to nearest well in lease & reservoir** 0.0
Total number of acres in 569.27 **Elevation** 23 GL
Total depth TVD 8672 **Total depth MD**
Plug back depth TVD 8612 **Plug back depth MD**
Was directional survey made other inclination (Form W- No **Rotation time within surface casing** 42.0
Is Cementing Affidavit (Form W-15) Yes
Recompletion or No **Multiple** No
Type(s) of electric or other log(s) Gamma Ray (MWD)
Electric Log Other Description:
Location of well, relative to nearest lease of lease on which this well is 371.0 **Feet from the** North **Line and** 2016.0 **Feet from the** West **Line of the** LABELLE PROPERTIES LTD **Lease.** **Off Lease :** No

FORMER FIELD (WITH RESERVOIR) & GAS ID OR OIL LEASE NO.

Field & Reservoir	Gas ID or Oil Lease	Well No.	Prior Service Type

PACKET: N/A

W2: N/A

FOR NEW DRILL OR RE-ENTRY, SURFACE CASING DEPTH DETERMINED BY:

GAU Groundwater Protection Determination		**Depth**	1200.0	**Date**	03/07/2024
SWR 13 Exception		**Depth**	2230.0		

INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION

Date of		**Production**	
Number of hours	24	**Choke**	
Was swab used during this	No	**Oil produced prior to**	

PRODUCTION DURING TEST PERIOD:

Oil		**Gas**	
Gas - Oil	0	**Flowing Tubing**	
Water			

CALCULATED 24-HOUR RATE

Oil		**Gas**	
Oil Gravity - API - 60.:		**Casing**	
Water			

CASING RECORD

Ro	Type of Casing	Casing Size (in.)	Hole Size	Setting Depth	Multi - Stage Tool	Multi - Stage Shoe	Cement Class	Cement Amoun	Slurry Volume (cu.	Top of Cement (ft.)	TOC Determined By
1	Surface	13 3/8	17 1/2	2203			H	1204	2382.0	0	Circulated to Surface
2	Conductor	20	26	110			A	225	349.0	0	Circulated to Surface
3	Conventional Production	9 5/8	12 1/4	8654			H	2035	3829.3	0	Circulated to Surface

LINER RECORD

Ro	Liner Size	Hole Size	Liner Top	Liner Bottom	Cement Class	Cement Amoun	Slurry Volume (cu.	Top of Cement (ft.)	TOC Determined

N/A

TUBING RECORD

Ro	Size (in.)	Depth Size (ft.)	Packer Depth (ft.)/Type
1	7	7395	7395 / WIRELINE SET, PERMANENT

PRODUCING/INJECTION/DISPOSAL INTERVAL

Ro	Open hole?	From (ft.)	To (ft.)
1	No	L 7441	7688.0
2	No	L 7884	7945.0
3	No	L 8073	8084.0
4	No	L 8025	8059.0

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC.

Was hydraulic fracturing treatment No

Is well equipped with a downhole sleeve? No

If yes, actuation pressure

Production casing test pressure (PSIG)

Actual maximum pressure (PSIG) during hydraulic fracturing

fracturin

Has the hydraulic fracturing fluid disclosure been

No

Ro	Type of Operation	Amount and Kind of Material Used	Depth Interval (ft.)	
1	Other	PERFORATIONS	7441	8059

FORMATION RECORD

Formations	Encountere	Depth TVD	Depth MD	Is formation	Remarks
LAFAYETTE - DISPOSAL	No			No	MUD LOGGING AND CUTTING SAMPLES WERE NOT COLLECTED IN THE SHALLOW HOLE SECTION. THEREFORE, SHALLOW FORMATIONS ENCOUNTERED COULD NOT BE CONFIRMED AS LAFAYETTE AND/OR PLEISTOCENE.
CAPROCK - DISPOSAL	No			No	NOT ENCOUNTERED
SPINDLETOP SALT DOME - DISPOSAL	No			No	NOT ENCOUNTERED
FANNETT SALT DOME - DISPOSAL	No			No	NOT ENCOUNTERED
BIG HILL SALT DOME - DISPOSAL	No			No	NOT ENCOUNTERED
PLEISTOCENE-LISSIE - DISPOSAL	No			No	MUD LOGGING AND CUTTING SAMPLES WERE NOT COLLECTED IN THE SHALLOW HOLE SECTION. THEREFORE, SHALLOW FORMATIONS ENCOUNTERED COULD NOT BE CONFIRMED AS LAFAYETTE AND/OR PLEISTOCENE.
MIOCENE - DISPOSAL	Yes	3545.0	3545.0	Yes	LOGGED
FRIO - DISPOSAL	Yes	6542.0	6542.0	Yes	LOGGED, PERFORATIONS IN THE LOWER FRIO SAND FROM 7,441'-8,084'
MARINULINA - DISPOSAL	Yes	6136.1	6136.0	Yes	LOGGED
HETEROSTEGINA - DISPOSAL	Yes	6231.0	6290.0	Yes	LOGGED

Do the producing interval of this well produce H2S with a concentration in excess of 100 ppm No

Is the completion being downhole commingled No

REMARKS

THE WELL WAS PERFORATED AND SHUT IN. THIS WELL HAS NOT PRODUCED.

RRC REMARKS

PUBLIC COMMENTS:

CASING RECORD :

NONE.

TUBING RECORD:

PRODUCING/INJECTION/DISPOSAL INTERVAL :

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC. :

POTENTIAL TEST DATA:

OPERATOR'S CERTIFICATION

Printed	Josh Calkin	**Title:**	
Telephone	(281) 702-5537	**Date**	02/11/2025

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name: Exxon Mobil low Carbon Solutions	Operator P-5 No.: 101256
Cementer Name: Halliburton	Cementer P-5 No.: 347151

WELL INFORMATION

District No.: 3	County: Jefferson	
Well No.: 1	API No.: 42-245-32913	Drilling Permit No.: 898448
Lease Name: Labelle Properties LTD	Lease No.:	
Field Name: Wild Cat	Field No.:	

I. CASING CEMENTING DATA

Type of casing: ☐ Conductor ☒ Surface ☐ Intermediate ☐ Liner ☐ Production

Drilled hole size (in.): 17 1/2"	Depth of drilled hole (ft.): 2,213	Est. % wash-out or hole enlargement: 20
Size of casing in O.D. (in.): 13 3/8"	Casing weight (lbs/ft) and grade: 68# J55	No. of centralizers used: 18
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☒ YES ☐ NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 2,203	Top of liner (ft.): / Setting depth liner (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.): Surface	Cementing date: 6/25/2024

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	785	XA	SEE REMARKS	1848	1486
2	419	H	SEE REMARKS	534	716
3					
Total	1204			2382	2202

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth shoe (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth tool (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS

EXXON, LABELLE PROPERTIES, LABELLE PROPERTIES LTC #1
SLURRY 1: ECONO CEM
SKLURRY 2: HAL CEM

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

DAVID NGUYEN, SERVICE SUPERVISOR	Halliburton	Daniel Nguyen	
Name and title of cementer's representative	Cementing Company	Signature	
4720 Industrial	Bossier City, LA 71112	903-986-5096	6/25/24
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

James Harvey	ops. supervisor		
Typed or printed name of operator's representative	Title	Signature	
22777 Springwoods Village	Spring, TX 77389	512-949-8272	6/25/24
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

A. **What to file:** An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on one form.

The Form W-15 should be filed with the Form W-3, Plugging Record, unless the Form W-3 is signed by the cementing company representative. When reporting dry holes, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.

B. **How to file:** An oil and gas completion report and Form W-15 may be filed online using the Commission's Online System (https://webapps.rrc.state.tx.us/security/login.do) or a paper copy of the form may be mailed to the Commission in Austin (P.O. Box 12967, Austin, Texas 78711-2967).

C. **Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.

To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 (http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.

D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing **and** Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name: EXXONMOBIL LOW C SOL ON STOR LLC	**Operator P-5 No.:**
Cementer Name: DOC ENERGY SERVICES INC	**Cementer P-5 No.:** 221887

WELL INFORMATION

District No.: 3	**County:** JEFFERSON	
Well No.: 1	**API No.:** 42-245-32913	**Drilling Permit No.:** 898448
Lease Name: LABELLE PROPERTIES LTD	**Lease No.:**	
Field Name: Wildcat	**Field No.:**	

I. CASING CEMENTING DATA

Type of casing: ☑ Conductor ☐ Surface ☐ Intermediate ☐ Liner ☐ Production

Drilled hole size (in.): 26	**Depth of drilled hole (ft.):** 110	**Est. % wash-out or hole enlargement:** 35
Size of casing in O.D. (in.): 20	**Casing weight (lbs/ft) and grade:** 78.6 ppf X-52 (Welded)	**No. of centralizers used:**
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☑ YES ☐ NO If no for surface casing, explain in Remarks.	**Setting depth shoe (ft.):** 110	**Top of liner (ft.):** / **Setting depth liner (ft.):**
Hrs. waiting on cement before drill-out:	**Calculated top of cement (ft.):** 0	**Cementing date:** 6/14/2024

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	225	A	4% GELL & 2% CACL2	349	167
2					
3					
Total	225			349	167

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	**Depth of drilled hole (ft.):**	**Est. % wash-out or hole enlargement:**
Size of casing in O.D. (in.):	**Casing weight (lbs/ft) and grade:**	**No. of centralizers used:**
Tapered string drilled hole size (in.) Upper: Lower:	**Tapered string depth of drilled hole (ft.)** Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	**Tapered string casing weight(lbs/ft) and grade** Upper: Lower:	**Tapered string no. of centralizers used** Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		**Setting depth shoe (ft.):**
Hrs. waiting on cement before drill-out:	**Calculated top of cement (ft.):**	**Cementing date:**

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	**Depth of drilled hole (ft.):**	**Est. % wash-out or hole enlargement:**
Size of casing in O.D. (in.):	**Casing weight (lbs/ft) and grade:**	**No. of centralizers used:**
Tapered string drilled hole size (in.) Upper: Lower:	**Tapered string depth of drilled hole (ft.)** Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	**Tapered string casing weight(lbs/ft) and grade** Upper: Lower:	**Tapered string no. of centralizers used** Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		**Setting depth tool (ft.):**
Hrs. waiting on cement before drill-out:	**Calculated top of cement (ft.):**	**Cementing date:**

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

JERRY T MOON JR	DOC ENERGY SERVICES INC		
Name and title of cementer's representative	Cementing Company	Signature	
P.O.BOX 580	OIL CITY, LA 71061	318-995-7126	6/19/2024
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

MICHAEL MATHIS, EXXONMOBIL	WELL OPS SUPERVISOR				
Typed or printed name of operator's representative	Title			Signature	
22777 Springwoods Village	Spring	TX	77389	512-949-8272	06/25/2024
Address	City,	State,	Zip Code	Tel: Area Code Number	Date: mo. day yr.

Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

A. **What to file:** An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on one form.

The Form W-15 should be filed with the Form W-3, Plugging Record, unless the Form W-3 is signed by the cementing company representative. When reporting dry holes, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.

B. **How to file:** An oil and gas completion report and Form W-15 may be filed online using the Commission's Online System (https://webapps.rrc.state.tx.us/security/login.do) or a paper copy of the form may be mailed to the Commission in Austin (P.O. Box 12967, Austin, Texas 78711-2967).

C. **Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.

To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 (http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.

D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing **and** Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name: Exxon Mobil Low Carbon Solution		Operator P-5 No.: 101256	
Cementer Name: Halliburton		Cementer P-5 No.: 347151	

WELL INFORMATION

District No.: 03		County: Jefferson	
Well No.: 1		API No.: 42-245-32913	Drilling Permit No.: 898448
Lease Name: Labelle Properties LTD		Lease No.:	
Field Name: Wildcat		Field No.:	

I. CASING CEMENTING DATA

Type of casing: ☐ Conductor ☐ Surface ☐ Intermediate ☐ Liner ☑ Production

Drilled hole size (in.): 12.25"	Depth of drilled hole (ft.): 8,672'	Est. % wash-out or hole enlargement: 25%	
Size of casing in O.D. (in.): 9 5/8"	Casing weight (lbs/ft) and grade: 47/53.50 L80/CR13/CR25	No. of centralizers used: 150	
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☑ YES ☐ NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 8,654'	Top of liner (ft.):	
		Setting depth liner (ft.):	
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.): 0	Cementing date: 7/11/2024	

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	775	H	SEE RAMARKS	1395	4012
2	1260	H	SEE REMARKS	2434.32	6301
3					
Total	2035			3829.32	10313

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth shoe (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth tool (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS

909436927,EXXONMOBIL LOW CARBON-EBUS,LABELLE PROPERTIES LTD,1,PRODUCTION:
SLURRY 1:CorossaCem , SLURRY 2:CorossaLock

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

ZOUHIR ROUBACHE	Halliburton			
Name and title of cementer's representative	Cementing Company		Signature	
4720 Industrial	Bossier City, LA 71112		903-986-5096	7/11/2024
Address	City, State, Zip Code		Tel: Area Code Number	Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

James Harvey	Drlg. OPS. Supervisor			
Typed or printed name of operator's representative	Title		Signature	
22777 Spring Woods Village	Spring	Tx 77389	512-949-8272	7/13/24
Address	City,	State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

Instructions for Form W-15, Cementing Report

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D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing **and** Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON | Sperry Drilling

DGR / EWR-P4 / DIR

Powered by INSITE™

1 : 500

MD Phase Attenuation Log

Country : USA
Field : WILDCAT
Location : Lat: 29° 59' 58.84" North Long: 94° 17' 6.39" West
Well : LABELLE PROPERTIES LTD 1
Company : EXXONMOBIL LOW C SOL ON STOR LL
Rig : NABORS X33

Company	:	EXXONMOBIL LOW C SOL ON STOR LL
Rig	:	NABORS X33
Well	:	LABELLE PROPERTIES LTD 1
Field	:	WILDCAT
Country	:	USA
API Number	:	4224532913

LOCATION

Latitude : 29° 59' 58.84" North
Longitude : 94° 17' 6.39" West

StatePlane X = 3,460,521.210 usft
StatePlane Y = 13,941,119.320 usft

Other Services

Permanent Datum : Ground Level
Elevation : 26.60 ft
Log Measured From : Drill Floor
32.52 ft Above Permanent Datum
Drilling Measured From : Drill Floor

MD LOG

Elev. KB
DF 59.12 ft
GL 26.60 ft
WD

Depth Logged : 142.00 ft To 8,672.00 ft
Date Logged : 23-Jun-24 To 01-Jul-24
Total Depth MD : 8,672.00 ft TVD : 8,671.78 ft
Spud Date : 22-Jun-24

Unit No. :
Job No. :LF-XX-0909034765
Plot Type : Final
Plot Date : 24-Jul-24

Run No.	Borehole Record (MD)			Size	Casing Record (MD)		
	Size	From	To		Weight	From	To
100	17.500 in	142.00 ft	2,213.00 ft	20.000 in	94.00 lbpf	SURFACE	142.00 ft
200	12.250 in	2,213.00 ft	3,565.00 ft	13.375 in	68.00 lbpf	SURFACE	2,203.00 ft
201	12.250 in	3,565.00 ft	3,626.00 ft				
300	12.250 in	3,626.00 ft	7,481.00 ft				
301	12.250 in	7,481.00 ft	7,541.00 ft				
400	12.250 in	7,541.00 ft	8,672.00 ft				

WELL INFORMATION

MWD Run Number	100	200	300	400	
Date run completed	24-Jun-24	27-Jun-24	30-Jun-24	02-Jul-24	
Rig Bit Number	100	200	300	400	
Bit Size (in)	17.500	12.250	12.250	12.250	
Tool Nominal OD (in)	8.000	8.000	8.000	8.000	
Log Start Depth (MD, ft)	142.00	2,213.00	3,626.00	7,541.00	
Log End Depth (MD, ft)	2,213.00	3,565.00	7,481.00	8,672.00	
Drill or Wipe	Drill	Drill	Drill	Drill	
Drill/Wipe Start Date and Time	23-Jun-24 06:20	26-Jun-24 09:22	28-Jun-24 15:15	01-Jul-24 11:30	
Drill/Wipe End Date and Time	23-Jun-24 23:50	27-Jun-24 03:09	29-Jun-24 16:43	01-Jul-24 19:05	
Min Inc (deg) @ Depth (MD, ft)	0.06 @ 584.00	0.06 @ 3,400.00	0.00 @ 4,345.00	0.19 @ 8,031.00	
Max Inc (deg) @ Depth (MD, ft)	1.13 @ 1,237.00	0.67 @ 2,455.00	0.86 @ 7,189.00	0.57 @ 7,464.00	
Bit TFA(in2) / Bit Type	1.23 / GT65s	0.91 / HD65s	0.91 / HD65s	0.91 / HD65s	
Flow Rate (gpm)	700.00	650.00	650.00	750.00	
Max AV (fpm) / CV (fpm) @ MWD	84.0 / 260.0	105.9 / 105.9	182.0 / 358.0	213.0 / 540.0	
Fluid Type	Native/Spud Mud	Diesel Mud Base	Diesel Mud Base	Diesel Mud Base	
Density (ppg) / Viscosity (spqt)	8.60 / 31.00	9.80 / 65.00	9.90 / 58.00	10.20 / 56.00	
Filtrate CL (ppm)	1,100.00	44,000.00	49,000.00	66,000.00	
pH / API Filtrate (mptm)	8.30 / 9	N/A / 7	N/A / 7	N/A / 3	
PV (cP) / YP (lhf2)	2 / 4.00	17 / 12.00	19 / 11.00	25 / 18.00	
% Solids / % Sand	4.9 / .01	9.1 / N/A	9.7 / N/A	9.8 / 0.01	
% Oil / Oil:Water Ratio	0 / 0:100	53.5 / 63:37	59 / 67:33	58 / 65:35	
Rm @ Measured Temp (degF)	0.100 @ 74.00	N/A @ N/A	N/A @ N/A	N/A @ N/A	
Rmf @ Measured Temp (degF)	0.100 @ 74.00	N/A @ N/A	N/A @ N/A	N/A @ N/A	
Rmc @ Measured Temp (degF)	0.100 @ 74.00	N/A @ N/A	N/A @ N/A	N/A @ N/A	
Max Tool Temp (degF) / Source	113.18 / HCIM	141.41 / HCIM	158.00 / PCDC	176.00 / PCDC	
Rm @ Max Tool Temp (degF)	0.0673 @ 113.18	N/A @ 141.41	N/A @ 158.00	N/A @ 176.00	
Lead MWD Engineer	Thomas Shea	Thomas Shea	Thomas Shea	Thomas Shea	
Customer Representative	James Harvey	Mike Mathis	Mike Mathis	Mike Mathis	

SENSOR INFORMATION

Downhole Processor Information

Tool Type	HCIM	HCIM	HCIM	HCIM	
Software Version	98.43	98.43	98.43	98.43	
Sub Serial Number	11700362	11700362	11700362	11700362	
Insert Serial Number	11618726	11618726	11618726	11618726	
Date and Time Initialized	22-Jun-24 15:49	26-Jun-24 06:33	28-Jun-24 12:13	01-Jul-24 07:11	
Date and Time Read	23-Jun-24 19:41	27-Jun-24 09:17	30-Jun-24 01:03	02-Jul-24 10:40	
ECMB SW Version	N/A	N/A	N/A	N/A	

Directional Sensor Information

Tool Type	PCDC	PCDC	PCDC	PCDC	
Distance From Bit (ft)	39.96	70.27	70.27	70.29	
Software Version	6.43	6.43	6.43	6.43	
Sub Serial Number	10436639	10436639	10436639	10436639	
Sonde Serial Number	11902174	11902174	11902174	11902174	
Sensor ID Number	N/A	N/A	N/A	N/A	
Toolface Offset (deg)	0.00	230.30	230.30	230.30	

Gamma Ray Sensor Information

Tool Type	DGR	DGR	DGR	DGR	
Distance From Bit (ft)	24.09	59.50	59.50	59.49	
Recorded Sample Period (sec)	4	4	4	4	
Software Version	N/A	N/A	N/A	N/A	
Sub Serial Number	11618726	11618726	1161826	1161826	
Insert/Sonde Serial Number	11700362	11700362	11700362	11700362	

Resistivity Sensor Information

Tool Type	EWR-P4				
Distance From Bit (ft)	10.09				
Recorded Sample Period (sec)	4				
Software Version	1.51				
Sub Serial Number	11973885				
Receiver Insert Serial Number	11281932				
Transmitter Insert Serial Number	11193458				
Receiver Orientation	Down				

REMARKS

All depths are referenced to the driller's pipe tally.

DGXT - Gamma Ray formation exposure time
EWXT - Resistivity formation exposure time

Default 1:500 Log Smoothing:
Interval Resolution: 0.5ft
Window Interval:(+/-) 0.6ft
Gap Fill: 3.0ft

Archive Name: LABELLE_PROPERTIES_LTD_1_500MD_PHASE_ATTEN_142_8672

Plot Width: 8.25 in

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
Oil and Gas Division
Tracking No.: 326094

ELECTRIC LOG STATUS REPORT

This facsimile L-1 was generated electronically from data submitted to the RRC.

FORM L-1

Instructions

When to File Form L-1:
- with Forms G-1, W-2, and GT-1 for new and deepened gas, oil, and geothermal wells
- with Form W-3 for plugged dry holes
- when sending in a log which was held under a request for confidentiality and the period for confidentiality has not yet expired.

When is Form L-1 NOT required:
- with Forms W-2, G-1, and GT-1 filed for injection wells, disposal wells, water supply wells, service wells, re-test wells, re-classifications, and plugbacks of oil, gas or geothermal wells
- with Form W-3 for plugging of other than a dry hole

Where to File Form L-1:
- with the appropriate Commission district office

Filling out Form L-1:
- Section I and the signature section must be filled out for all wells
- complete only the appropriate part of Section II

Type of log required:
- any wireline survey run for the purpose of obtaining lithology, porosity, or resistivity information
- no more than one such log is required but it must be of the subject well
- if such log is NOT run on the subject well, do NOT substitute any other type of log; just select Section II, Part A below

SECTION I. IDENTIFICATION

Operator Name: EXXONMOBIL LOW C SOL ON STOR LLC	District No. 03	Completion Date: 10/03/2024
Field Name WILDCAT	Drilling Permit No. 898448	
Lease Name LABELLE PROPERTIES LTD	Lease/ID No. 28199	Well No. 1
County JEFFERSON	API No. 42- 245-32913	

SECTION II. LOG STATUS (Complete either A or B)

☐ A. BASIC ELECTRIC LOG NOT RUN

☒ B. BASIC ELECTRIC LOG RUN. (Select one)

☒ 1. Confidentiality is requested and a copy of the header for each log that has been run on the well is attached.

☐ 2. Confidentiality already granted on basic electric log covering this interval (applicable to deepened wells only).

☐ 3. Basic electric log covering this interval already on file with Commission (applicable to deepened wells only).

☐ 4. Log attached to (select one):

☐ (a) Form L-1 (this form). If the company/lease name on log is different from that shown in Section I, please enter name on log here: _____

Check here if attached log is being submitted after being held confidential. ☐

☐ (b) Form P-7, Application for Discovery Allowable and New Field Designation.

☐ (c) Form W-4, Application for Multiple Completion:

Lease or ID No(s). _____

Well No(s). _____

Josh Calkin
Signature

Title

EXXONMOBIL LOW C SOL ON STOR LLC
Name (print)

(281) 702-5537
Phone

12/19/2024
Date

-FOR RAILROAD COMMISSION USE ONLY-

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON

4607 HWY 90 EAST • BROUSSARD, LA 70518

PHONE 337 837 3061 • FAX 337 837 4400

Jefferson County,
State of Texas

I, **Kristen Killen,** certify that: I am employed by Halliburton Energy Service and that I did on the day(s) of **June 23, 2024 to July 1, 2024** conduct or supervise the taking of Directional Surveys as follow:

- **396' to a depth of 8604' MWD surveys performed by Sperry Drilling MWD**
- **Final survey is projected to a total depth of 8672'**

I certify that the data is true, correct, complete and within the limitations of the tool as set forth by Halliburton Energy Services. I further certify that I am authorized and qualified to make this report, that this survey was conducted at the request of **EXXONMOBIL LOW C SOL ON STOR LLC** for the **LABELLE PROPERTIES LTD 1** in **Jefferson County, TX,** and that I have reviewed this report and find that it conforms to the principles and procedures set forth by Halliburton Energy Service for quality well surveying.

Kristen Killen, Log Analyst

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON

4607 HWY 90 EAST • BROUSSARD, LA 70518

PHONE 337 837 3061 • FAX 337 837 4400

July 24, 2024

Railroad Commission of Texas
Oil and Gas Division
P.O. Box 12967
Capital Station
Austin, TX 78711

Re: EXXONMOBIL LOW C SOL ON STOR LLC
R.R.C. Operator No. 101256
LABELLE PROPERTIES LTD 1
Permit No. 898448
Jefferson County, TX
API # 42-245-32913

Attention: Ms. Pam Johns

Enclosed, please find one copy of the survey performed on the above referenced well by Halliburton Energy Services, Inc. Operator #347-151.

Other information required by your office is as follows:

Name & Title of Surveyor	-	Kristen Killen, Log Analyst
Drainhole Number	-	Original
Surveyed Depths	-	396' – 8604' MWD Surveys performed by Sperry Drilling
Dates Performed	-	June 23, 2024 to July 1, 2024
Type of Survey	-	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the listed e-mail address.

Respectfully,

Kristen Killen
Log Analyst
Kristen.Killen@Halliburton.com
Halliburton / Sperry Drilling

Enclosures
RE: LA-MM 909034765

CONFIDENTIAL BUSINESS INFORMATION

ExxonMobil

Jefferson County, Tx_NAD83
Rose Prospect CCS
Labelle Properties LTD #1
42245332913
001 ST00BP00

Design: 001 ST00BP00

Sperry Drilling Services

Geodetic Report

19 July, 2024

Well Coordinates: 13,941,119.32 N, 3,460,521.21 E (29° 59' 58.84" N, 094° 17' 06.39" W)
Ground Level: 26.60 usft

Local Coordinate Origin:	Centered on Well Labelle Properties LTD #1
Viewing Datum:	(32.52') Nabors X-33 @ 59.12usft (Before Spud)
TVDs to System:	N
North Reference:	Grid
Unit System:	API US Survey Feet

Version: 5000.17 Build: 02

HALLIBURTON

Design Report for Labelle Properties LTD #1 - 001 ST00BP00

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude (usft)	Geographic Coordinates Longitude (usft)	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	29° 59' 58.843 N	94° 17' 6.388 W	13,941,119.32	3,460,521.21
396.00	0.31	302.42	396.00	0.57	-0.90	29° 59' 58.849 N	94° 17' 6.398 W	13,941,119.89	3,460,520.31
491.00	0.33	316.43	491.00	0.91	-1.31	29° 59' 58.852 N	94° 17' 6.403 W	13,941,120.23	3,460,519.90
584.00	0.06	160.13	584.00	1.06	-1.48	29° 59' 58.854 N	94° 17' 6.405 W	13,941,120.38	3,460,519.73
679.00	0.31	105.12	679.00	0.94	-1.21	29° 59' 58.853 N	94° 17' 6.402 W	13,941,120.26	3,460,520.00
765.00	0.25	190.83	764.99	0.70	-1.02	29° 59' 58.850 N	94° 17' 6.400 W	13,941,120.02	3,460,520.19
862.00	0.28	223.68	861.99	0.32	-1.23	29° 59' 58.846 N	94° 17' 6.402 W	13,941,119.64	3,460,519.98
956.00	0.19	251.73	955.99	0.11	-1.53	29° 59' 58.844 N	94° 17' 6.406 W	13,941,119.43	3,460,519.68
1,043.00	0.59	311.75	1,042.99	0.36	-2.00	29° 59' 58.847 N	94° 17' 6.411 W	13,941,119.68	3,460,519.21
1,139.00	0.65	324.96	1,138.99	1.13	-2.69	29° 59' 58.855 N	94° 17' 6.418 W	13,941,120.45	3,460,518.52
1,237.00	1.13	346.55	1,236.97	2.53	-3.23	29° 59' 58.869 N	94° 17' 6.424 W	13,941,121.85	3,460,517.98
1,334.00	1.02	341.03	1,333.96	4.28	-3.73	29° 59' 58.887 N	94° 17' 6.429 W	13,941,123.60	3,460,517.48
1,423.00	0.84	310.12	1,422.95	5.44	-4.49	29° 59' 58.898 N	94° 17' 6.437 W	13,941,124.76	3,460,516.72
1,519.00	0.61	306.92	1,518.94	6.21	-5.44	29° 59' 58.906 N	94° 17' 6.447 W	13,941,125.53	3,460,515.77
1,612.00	0.33	217.44	1,611.94	6.29	-5.99	29° 59' 58.907 N	94° 17' 6.454 W	13,941,125.61	3,460,515.22
1,707.00	0.42	215.22	1,706.93	5.79	-6.36	29° 59' 58.903 N	94° 17' 6.458 W	13,941,125.11	3,460,514.85
1,804.00	0.43	218.07	1,803.93	5.21	-6.79	29° 59' 58.897 N	94° 17' 6.463 W	13,941,124.53	3,460,514.42
1,894.00	0.89	271.47	1,893.93	4.96	-7.70	29° 59' 58.895 N	94° 17' 6.474 W	13,941,124.28	3,460,513.51
1,991.00	0.70	257.71	1,990.92	4.86	-9.03	29° 59' 58.894 N	94° 17' 6.489 W	13,941,124.18	3,460,512.18
2,088.00	0.31	300.25	2,087.91	4.86	-9.84	29° 59' 58.895 N	94° 17' 6.498 W	13,941,124.18	3,460,511.37
2,171.00	0.26	350.35	2,170.91	5.16	-10.06	29° 59' 58.898 N	94° 17' 6.500 W	13,941,124.48	3,460,511.15
2,267.00	0.57	26.56	2,266.91	5.80	-9.88	29° 59' 58.904 N	94° 17' 6.498 W	13,941,125.12	3,460,511.33
2,363.00	0.63	17.23	2,362.90	6.73	-9.51	29° 59' 58.913 N	94° 17' 6.494 W	13,941,126.05	3,460,511.70
2,455.00	0.67	26.51	2,454.90	7.70	-9.12	29° 59' 58.923 N	94° 17' 6.489 W	13,941,127.02	3,460,512.09
2,549.00	0.58	25.23	2,548.89	8.62	-8.68	29° 59' 58.932 N	94° 17' 6.483 W	13,941,127.94	3,460,512.53
2,645.00	0.42	12.95	2,644.89	9.40	-8.39	29° 59' 58.939 N	94° 17' 6.480 W	13,941,128.72	3,460,512.82
2,742.00	0.25	14.60	2,741.89	9.95	-8.26	29° 59' 58.945 N	94° 17' 6.478 W	13,941,129.27	3,460,512.95
2,832.00	0.32	347.80	2,831.89	10.39	-8.26	29° 59' 58.949 N	94° 17' 6.478 W	13,941,129.71	3,460,512.95
2,929.00	0.18	359.49	2,928.88	10.81	-8.32	29° 59' 58.953 N	94° 17' 6.478 W	13,941,130.13	3,460,512.89
3,025.00	0.09	307.84	3,024.88	11.00	-8.38	29° 59' 58.955 N	94° 17' 6.479 W	13,941,130.32	3,460,512.83
3,121.00	0.09	276.88	3,120.88	11.06	-8.52	29° 59' 58.956 N	94° 17' 6.480 W	13,941,130.38	3,460,512.69
3,214.00	0.13	264.11	3,213.88	11.06	-8.69	29° 59' 58.956 N	94° 17' 6.482 W	13,941,130.38	3,460,512.52
3,309.00	0.09	161.81	3,308.88	10.98	-8.78	29° 59' 58.955 N	94° 17' 6.483 W	13,941,130.30	3,460,512.43
3,400.00	0.06	225.09	3,399.88	10.87	-8.79	29° 59' 58.954 N	94° 17' 6.483 W	13,941,130.19	3,460,512.42
3,496.00	0.25	142.62	3,495.88	10.67	-8.70	29° 59' 58.952 N	94° 17' 6.482 W	13,941,129.99	3,460,512.51
3,507.17	0.25	145.70	3,507.05	10.63	-8.67	29° 59' 58.951 N	94° 17' 6.482 W	13,941,129.95	3,460,512.54
3,686.00	0.28	195.98	3,685.88	9.90	-8.57	29° 59' 58.944 N	94° 17' 6.481 W	13,941,129.22	3,460,512.64
3,782.00	0.18	201.29	3,781.88	9.53	-8.69	29° 59' 58.941 N	94° 17' 6.483 W	13,941,128.85	3,460,512.52
3,876.00	0.06	170.16	3,875.88	9.34	-8.74	29° 59' 58.939 N	94° 17' 6.483 W	13,941,128.66	3,460,512.47
3,967.00	0.22	345.14	3,966.88	9.47	-8.77	29° 59' 58.940 N	94° 17' 6.484 W	13,941,128.79	3,460,512.44
4,065.00	0.25	12.46	4,064.88	9.86	-8.78	29° 59' 58.944 N	94° 17' 6.484 W	13,941,129.18	3,460,512.43
4,161.00	0.14	3.58	4,160.88	10.18	-8.72	29° 59' 58.947 N	94° 17' 6.483 W	13,941,129.50	3,460,512.49

Design Report for Labelle Properties LTD #1 - 001 ST00BP00

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude (usft)	Geographic Coordinates Longitude (usft)	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
4,250.00	0.14	10.43	4,249.88	10.39	-8.70	29° 59' 58.949 N	94° 17' 6.483 W	13,941,129.71	3,460,512.51
4,345.00	0.00	91.76	4,344.88	10.51	-8.68	29° 59' 58.950 N	94° 17' 6.482 W	13,941,129.83	3,460,512.53
4,442.00	0.13	284.23	4,441.88	10.54	-8.78	29° 59' 58.951 N	94° 17' 6.483 W	13,941,129.86	3,460,512.43
4,539.00	0.28	249.99	4,538.88	10.48	-9.11	29° 59' 58.950 N	94° 17' 6.487 W	13,941,129.80	3,460,512.10
4,630.00	0.13	167.76	4,629.88	10.30	-9.30	29° 59' 58.948 N	94° 17' 6.489 W	13,941,129.62	3,460,511.91
4,725.00	0.19	159.33	4,724.88	10.05	-9.22	29° 59' 58.946 N	94° 17' 6.489 W	13,941,129.37	3,460,511.99
4,817.00	0.42	147.25	4,816.88	9.63	-8.98	29° 59' 58.942 N	94° 17' 6.486 W	13,941,128.95	3,460,512.23
4,911.00	0.25	157.32	4,910.87	9.15	-8.72	29° 59' 58.937 N	94° 17' 6.483 W	13,941,128.47	3,460,512.49
5,008.00	0.35	153.99	5,007.87	8.68	-8.51	29° 59' 58.932 N	94° 17' 6.481 W	13,941,128.00	3,460,512.70
5,099.00	0.26	82.39	5,098.87	8.46	-8.18	29° 59' 58.930 N	94° 17' 6.478 W	13,941,127.78	3,460,513.03
5,195.00	0.18	52.96	5,194.87	8.58	-7.84	29° 59' 58.931 N	94° 17' 6.474 W	13,941,127.90	3,460,513.37
5,292.00	0.42	34.84	5,291.87	8.97	-7.52	29° 59' 58.934 N	94° 17' 6.470 W	13,941,128.29	3,460,513.69
5,388.00	0.31	24.73	5,387.87	9.49	-7.21	29° 59' 58.940 N	94° 17' 6.466 W	13,941,128.81	3,460,514.00
5,482.00	0.42	342.12	5,481.87	10.05	-7.21	29° 59' 58.945 N	94° 17' 6.466 W	13,941,129.37	3,460,514.00
5,574.00	0.36	329.02	5,573.86	10.62	-7.46	29° 59' 58.951 N	94° 17' 6.468 W	13,941,129.94	3,460,513.75
5,670.00	0.53	314.29	5,669.86	11.19	-7.94	29° 59' 58.957 N	94° 17' 6.474 W	13,941,130.51	3,460,513.27
5,767.00	0.50	313.01	5,766.86	11.79	-8.57	29° 59' 58.963 N	94° 17' 6.480 W	13,941,131.11	3,460,512.64
5,858.00	0.25	295.28	5,857.86	12.14	-9.04	29° 59' 58.967 N	94° 17' 6.486 W	13,941,131.46	3,460,512.17
5,955.00	0.18	274.92	5,954.85	12.25	-9.38	29° 59' 58.968 N	94° 17' 6.489 W	13,941,131.57	3,460,511.83
6,052.00	0.25	226.53	6,051.85	12.12	-9.68	29° 59' 58.967 N	94° 17' 6.493 W	13,941,131.44	3,460,511.53
6,238.00	0.40	184.93	6,237.85	11.19	-10.03	29° 59' 58.957 N	94° 17' 6.497 W	13,941,130.51	3,460,511.18
6,428.00	0.43	142.07	6,427.85	9.97	-9.65	29° 59' 58.945 N	94° 17' 6.494 W	13,941,129.29	3,460,511.56
6,522.00	0.31	101.91	6,521.85	9.64	-9.19	29° 59' 58.942 N	94° 17' 6.488 W	13,941,128.96	3,460,512.02
6,638.00	0.35	51.62	6,637.84	9.79	-8.60	29° 59' 58.943 N	94° 17' 6.482 W	13,941,129.11	3,460,512.61
6,706.00	0.36	33.75	6,705.84	10.10	-8.32	29° 59' 58.946 N	94° 17' 6.478 W	13,941,129.42	3,460,512.89
6,803.00	0.36	13.29	6,802.84	10.65	-8.08	29° 59' 58.951 N	94° 17' 6.475 W	13,941,129.97	3,460,513.13
6,897.00	0.43	358.50	6,896.84	11.29	-8.02	29° 59' 58.958 N	94° 17' 6.474 W	13,941,130.61	3,460,513.19
6,994.00	0.44	344.45	6,993.84	12.01	-8.13	29° 59' 58.965 N	94° 17' 6.475 W	13,941,131.33	3,460,513.08
7,189.00	0.86	346.17	7,188.82	14.15	-8.68	29° 59' 58.986 N	94° 17' 6.481 W	13,941,133.47	3,460,512.53
7,284.00	0.84	340.34	7,283.81	15.50	-9.09	29° 59' 59.000 N	94° 17' 6.485 W	13,941,134.82	3,460,512.12
7,381.00	0.67	318.96	7,380.80	16.60	-9.70	29° 59' 59.011 N	94° 17' 6.491 W	13,941,135.92	3,460,511.51
7,409.00	0.45	321.74	7,408.80	16.81	-9.87	29° 59' 59.013 N	94° 17' 6.493 W	13,941,136.13	3,460,511.34
7,464.00	0.57	329.25	7,463.80	17.21	-10.15	29° 59' 59.017 N	94° 17' 6.496 W	13,941,136.53	3,460,511.06
7,653.00	0.43	306.59	7,652.79	18.44	-11.20	29° 59' 59.030 N	94° 17' 6.507 W	13,941,137.76	3,460,510.01
7,749.00	0.39	272.61	7,748.79	18.67	-11.81	29° 59' 59.032 N	94° 17' 6.514 W	13,941,137.99	3,460,509.40
7,941.00	0.31	214.26	7,940.79	18.27	-12.76	29° 59' 59.029 N	94° 17' 6.525 W	13,941,137.59	3,460,508.45
8,031.00	0.19	194.93	8,030.79	17.93	-12.93	29° 59' 59.025 N	94° 17' 6.527 W	13,941,137.25	3,460,508.28
8,123.00	0.25	138.03	8,122.79	17.63	-12.84	29° 59' 59.022 N	94° 17' 6.526 W	13,941,136.95	3,460,508.37
8,220.00	0.25	146.32	8,219.79	17.30	-12.58	29° 59' 59.019 N	94° 17' 6.524 W	13,941,136.62	3,460,508.63
8,314.00	0.36	131.85	8,313.78	16.93	-12.25	29° 59' 59.015 N	94° 17' 6.520 W	13,941,136.25	3,460,508.96
8,407.00	0.26	84.39	8,406.78	16.76	-11.82	29° 59' 59.013 N	94° 17' 6.515 W	13,941,136.08	3,460,509.39
8,501.00	0.38	54.36	8,500.78	16.96	-11.35	29° 59' 59.015 N	94° 17' 6.510 W	13,941,136.28	3,460,509.86

Design Report for Labelle Properties LTD #1 - 001 ST00BP00

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude (usft)	Geographic Coordinates Longitude (usft)	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
8,604.00	0.32	61.67	8,603.78	17.29	-10.82	29° 59' 59.018 N	94° 17' 6.504 W	13,941,136.61	3,460,510.39
8,672.00	0.32	61.67	8,671.78	17.47	-10.49	29° 59' 59.020 N	94° 17' 6.500 W	13,941,136.79	3,460,510.72

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
8,672.00	8,671.78	17.47	-10.49	Proj. to Bit

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	0.00	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
396.00	2,171.00	01 HAL MWD (MagVarMS) 17 1/2" Hole 396' - 2171'	3_MWD+HRGM+MS
2,267.00	8,604.00	02 HAL MWD (MagVarMS) 12 1/4" Hole 2267' - XX'	3_MWD+HRGM+MS

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
150.00	150.00	20" Conductor Casing	20	20

Design Report for Labelle Properties LTD #1 - 001 ST00BP00

Design Targets

Shape	Target Name	TVD ()	Northing ()	Easting ()	+N/-S	+E/-W	Created	Updated

Directional Difficulty Index

Average Dogleg over Survey:	0.20 °/100usft	Maximum Dogleg over Survey:	0.80 °/100usft at 1,894.00 usft
Net Tortousity applicable to Plans:	0.20 °/100usft	Directional Difficulty Index:	2.984

Audit Info

North Reference Sheet for Rose Prospect CCS - Labelle Properties LTD #1 - 001 ST00BP00

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to (32.52') Nabors X-33 @ 59.12usft (Before Spud). Northing and Easting are relative to Labelle Properties LTD #1

Coordinate System is US State Plane 1983, Texas South Central Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is 99° 0' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:30° 17' 0.000 N°

False Easting: 1,968,500.00usft, False Northing: 13,123,333.33usft, Scale Reduction: 0.99993037

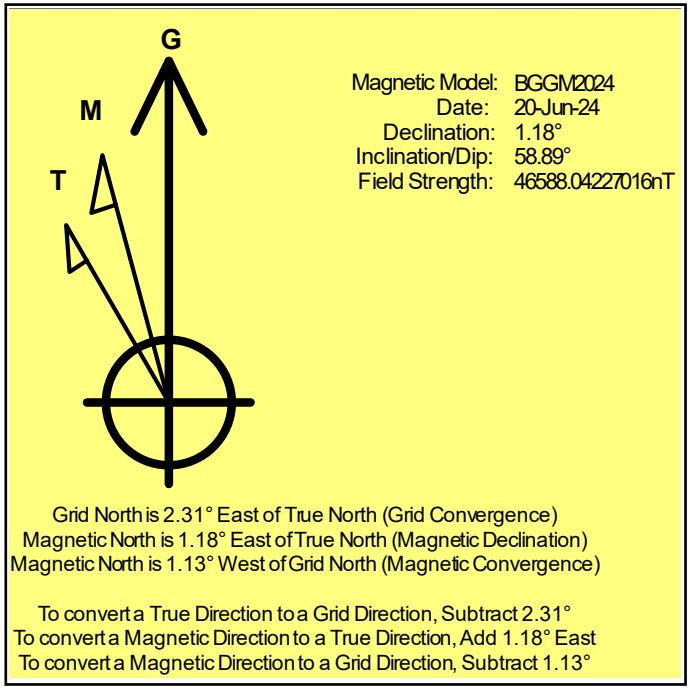
Grid Coordinates of Well: 13,941,119.32 usft N, 3,460,521.21 usft E

Geographical Coordinates of Well: 29° 59' 58.84" N, 094° 17' 06.39" W

Grid Convergence at Surface is: 2.31°

Based upon Minimum Curvature type calculations, at a Measured Depth of 8,672.00usft

the Bottom Hole Displacement is 20.38usft in the Direction of 329.02° (Grid).
Magnetic Convergence at surface is: 1.13° (20 June 2024, , BGGM2024)



CONFIDENTIAL BUSINESS INFORMATION

Railroad Commission of Texas

PERMIT TO DRILL, RE-COMPLETE, OR RE-ENTER ON REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

CONDITIONS AND INSTRUCTIONS

Permit Invalidation. It is the operator's responsibility to make sure that the permitted location complies with Commission density and spacing rules in effect on the spud date. The permit becomes invalid automatically if, because of a field rule change or the drilling of another well, the stated location is not in compliance with Commission field rules on the spud date. If this occurs, application for an exception to Statewide Rules 37 and 38 must be made and a special permit granted prior to spudding. Failure to do so may result in an allowable not being assigned and/or enforcement procedures being initiated.

Notice Requirements. Per H.B 630, signed May 8, 2007, the operator is required to provide notice to the surface owner no later than the 15th business day after the Commission issues a permit to drill. Please refer to subchapter Q Sec. 91.751-91.755 of the Texas Natural Resources Code for applicability.

Permit expiration. This permit expires two (2) years from the date of issuance shown on the original permit. The permit period will not be extended.

Drilling Permit Number. The drilling permit number shown on the permit MUST be given as a reference with any notification to the district (see below), correspondence, or application concerning this permit.

Rule 37 Exception Permits. This Statewide Rule 37 exception permit is granted under either provision Rule 37 (h)(2)(A) or 37(h)(2)(B). Be advised that a permit granted under Rule 37(h)(2)(A), notice of application, is subject to the General Rules of Practice and Procedures and if a protest is received under Section 1.3, "Filing of Documents," and/or Section 1.4, "Computation of Time," the permit may be deemed invalid.

Before Drilling

Fresh Water Sand Protection. The operator must set and cement sufficient surface casing to protect all usable-quality water, as defined by the Railroad Commission of Texas (RRC) Groundwater Advisory Unit (GWAU). Before drilling a well, the operator must obtain a letter from the Railroad Commission of Texas stating the depth to which water needs protection, Write: Railroad Commission of Texas, Groundwater Advisory Unit (GWAU), P.O. Box 12967, Austin, TX 78711-3087. File a copy of the letter with the appropriate district office.

Accessing the Well Site. If an OPERATOR, well equipment TRANSPORTER or WELL service provider must access the well site from a roadway on the state highway system (Interstate, U.S. Highway, State Highway, Farm-to-Market Road, Ranch-to-Market Road, etc.), an access permit is required from TxDOT. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

Water Transport to Well Site. If an operator intends to transport water to the well site through a temporary pipeline laid above ground on the state's right-of-way, an additional TxDOT permit is required. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

*NOTIFICATION

The operator is **REQUIRED** to notify the district office when setting surface casing, intermediate casing, and production casing, or when plugging a dry hole. The district office **MUST** also be notified if the operator intends to re-enter a plugged well or re-complete a well into a different regulatory field. Time requirements are given below. The drilling permit number **MUST** be given with such notifications.

During Drilling

Permit at Drilling Site. A copy of the Form W-1 Drilling Permit Application, the location plat, a copy of Statewide Rule 13 alternate surface casing setting depth approval from the district office, if applicable, and this drilling permit must be kept at the permitted well site throughout drilling operations.

***Notification of Setting Casing.** The operator MUST call in notification to the appropriate district office (phone number shown the on permit) a minimum of eight (8) hours prior to the setting of surface casing, intermediate casing, AND production casing. The individual giving notification MUST be able to advise the district office of the drilling permit number.

***Notification of Re-completion/Re-entry.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of eight (8) hours prior to the initiation of drilling or re-completion operations. The individual giving notification MUST be able to advise the district office of the drilling permit number.

Completion and Plugging Reports

Hydraulic Fracture Stimulation using Diesel Fuel: Most operators in Texas do not use diesel fuel in hydraulic fracturing fluids. Section 322 of the Energy Policy Act of 2005 amended the Underground Injection Control (UIC) portion of the federal Safe Drinking Water Act (42 USC 300h(d)) to define "underground Injection" to *EXCLUDE* " ...the underground injection of fluids or propping agents (*other than diesel fuels*) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities." (italic and underlining added.) Therefore, hydraulic fracturing may be subject to regulation under the federal UIC regulations if diesel fuel is injected or used as a propping agent. EPA defined "diesel fuel" using the following five (5) Chemical Abstract Service numbers: 68334-30-5 Primary Name: Fuels, diesel; 68476-34-6 Primary Name: Fuels, diesel, No. 2; 68476-30-2 Primary Name: Fuel oil No. 2; 68476-31-3 Primary Name: Fuel oil, No. 4; and 8008-20-6 Primary Name: Kerosene. As a result, an injection well permit would be required before performing hydraulic fracture stimulation using diesel fuel as defined by EPA on any well in Texas. Hydraulic fracture stimulation using diesel fuel as defined by EPA on a well in Texas without an injection well permit could result in enforcement action.

Producing Well. Statewide Rule 16 states that the operator of a well shall file with the Commission the appropriate completion report within ninety (90) days after completion of the well or within one hundred and fifty (150) days after the date on which the drilling operation is completed, whichever is earlier. Completion of the well in a field authorized by this permit voids the permit for all other fields included in the permit unless the operator indicates on the initial completion report that the well is to be a dual or multiple completion and promptly submits an application for multiple completion. All zones are required to be completed before the expiration date on the existing permit. Statewide Rule 40(d) requires that upon successful completion of a well in the same reservoir as any other well previously assigned the same acreage, proration plats and P-15s or P-16s (if required) or a lease plat and P-16 must be submitted with no double assignment of acreage unless authorized by rule.

Dry or Noncommercial Hole. Statewide Rule 14(b)(2) prohibits suspension of operations on each dry or non-commercial well without plugging unless the hole is cased and the casing is cemented in compliance with Commission rules. If properly cased, Statewide Rule 14(b)(2) requires that plugging operations must begin within a period of one (1) year after drilling or operations have ceased. Plugging operations must proceed with due diligence until completed. An extension to the one-year plugging requirement may be granted under the provisions stated in Statewide Rule 14(b)(2).

Intention to Plug. The operator must file a Form W-3A (Notice of Intention to Plug and Abandon) with the district office at least five (5) days prior to beginning plugging operations. If, however, a drilling rig is already at work on location and ready to begin plugging operations, the district director or the director's delegate may waive this requirement upon request, and verbally approve the proposed plugging procedures.

***Notification of Plugging a Dry Hole.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of four (4) hours prior to beginning plugging operations. The individual giving the notification MUST be able to advise the district office of the drilling permit number and all water protection depths for that location as stated in the Groundwater Advisory Unit letter.

DIRECT INQUIRIES TO: DRILLING PERMIT SECTION, OIL AND GAS DIVISION

PHONE
(512) 463-6751

MAIL:
PO Box 12967
Austin, Texas, 78711-2967

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER	DATE PERMIT ISSUED OR AMENDED	DISTRICT
898448	Apr 05, 2024	* 03
API NUMBER	**FORM W-1 RECEIVED**	**COUNTY**
42-245-32913	Mar 27, 2024	JEFFERSON
TYPE OF OPERATION	**WELLBORE PROFILE(S)**	**ACRES**
NEW DRILL	Vertical	569.27

OPERATOR 101256

EXXONMOBIL LOW C SOL ON STOR LLC

ATTN EDWARD E GRAHAM
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389

NOTICE

This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored.

District Office Telephone No:

(713) 869-5001

LEASE NAME	WELL NUMBER
LABELLE PROPERTIES LTD	1
LOCATION	**TOTAL DEPTH**
4.5 miles SE direction from CHINA	10000

Section, Block and/or Survey

SECTION 42 BLOCK ABSTRACT 874

SURVEY T&NO RR CO/STARK, W L

DISTANCE TO SURVEY LINES	DISTANCE TO NEAREST LEASE LINE
371 ft. NORTH 2016 ft. WEST	ft.
DISTANCE TO LEASE LINES	**DISTANCE TO NEAREST WELL ON LEASE**
371 ft. NORTH 2016 ft. WEST	See FIELD(s) Below

FIELD(s) and LIMITATIONS:

* SEE FIELD DISTRICT FOR REPORTING PURPOSES *

FIELD NAME / LEASE NAME	ACRES / NEAREST LEASE	DEPTH	WELL # / NEAREST WE	DIST
WILDCAT	569.27	8,700	1	03
LABELLE PROPERTIES LTD			0	

RESTRICTIONS: For exploratory test only

THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS

This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.

This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

SWR #13 Formation Data

JEFFERSON (245) County

Formation	Remarks	Geological Order	Effective Date
LAFAYETTE	disposal	1	12/17/2013
CAPROCK	disposal	2	12/17/2013
SPINDLETOP SALT DOME	disposal	3	12/17/2013
FANNETT SALT DOME	disposal	4	12/17/2013
BIG HILL SALT DOME	disposal	5	12/17/2013
PLEISTOCENE-LISSIE	disposal	6	12/17/2013
MIOCENE	disposal	7	12/17/2013
FRIO	disposal	8	12/17/2013
MARINULINA	disposal	9	12/17/2013
HETEROSTEGINA	disposal	10	12/17/2013

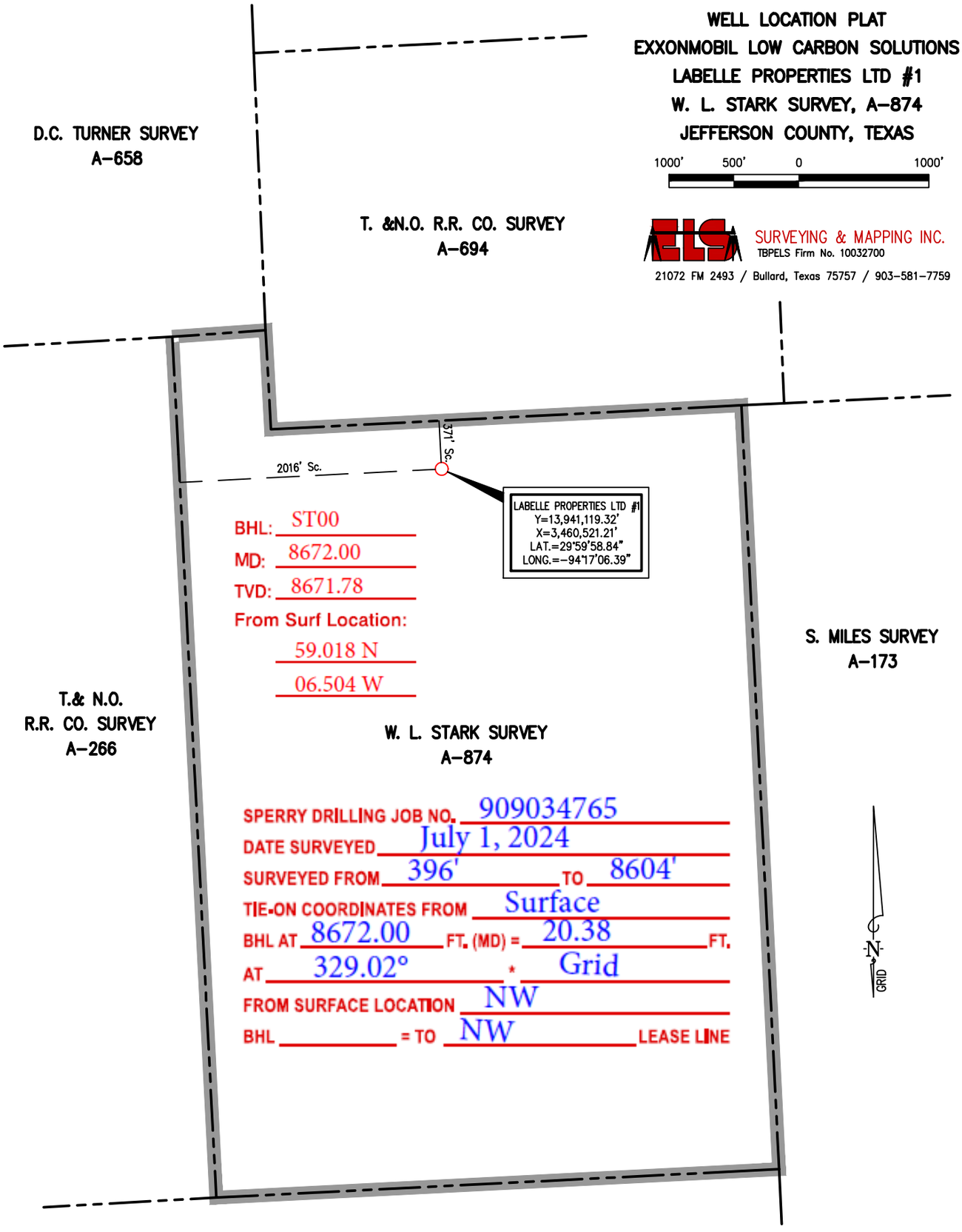
The above list may not be all inclusive, and may also include formations that do not intersect all wellbores. The listing order of the Formation information reflects the general stratigraphic order and relative geologic age. This is a dynamic list subject to updates and revisions. It is the operator's responsibility to make sure that at the time of spudding the well the most current list is being referenced. Refer to the RRC website at the following address for the most recent information.
http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info

CONFIDENTIAL BUSINESS INFORMATION

WELL LOCATION PLAT
EXXONMOBIL LOW CARBON SOLUTIONS
LABELLE PROPERTIES LTD #1
W. L. STARK SURVEY, A-874
JEFFERSON COUNTY, TEXAS

1000' 500' 0 1000'

SURVEYING & MAPPING INC.
TBPELS Firm No. 10032700
21072 FM 2493 / Bullard, Texas 75757 / 903-581-7759



SHL	TRACT CALLS	SURVEY CALLS	ELEV.
LABELLE PROPERTIES LTD #1	371' Sc. FNL 2016' Sc. FWL	371' Sc. FNL 2016' Sc. FWL	22.9'

Location is approximately
10.4 miles SW of Beaumont, Tx.
"FANNETT WEST" Quadrangle

Driving Directions:
From the Intersection of I10 and Smith Road near Cheek, TX, go Northwest on Smith Road, .8 miles turn left (West) Kidd Road. Go 1.6 miles turn right (North) on Boyt Road. Go 1.1 miles stay straight (West) on Lawhon Rd. Go 1.9 miles turn left (South). Drive on location.

DATE SURVEYED: 8/23/2023-8/28/2023

Location is staked from tract lines as evidenced by occupation, information obtained from the Tx. R.R.C and provided deed records. Distances shown are not intended to be definitive in establishing actual title boundaries. The deed data and tract acreages shown hereon were furnished by others. This is not a title survey. Vesting documents may not have been provided. Bearings and distances are based on the Texas State Plane Coordinate System N.A.D. 83 (2011) (South Central Zone) derived from GPS Observations.

LEGEND
= TRACT LINE
= SURVEY LINE
= PROPOSED WELL

STATE OF TEXAS REGISTERED
JIM G. GLASS
5262
PROFESSIONAL LAND SURVEYOR

FOR THE EXCLUSIVE USE OF
EXXONMOBIL LOW CARBON SOLUTIONS

STATE OF TEXAS - - - COUNTY OF SMITH
I, Jim G. Glass, Registered Professional Land Surveyor, do hereby certify the above plat to be true and correct to the best of my knowledge.
Date: April 2, 2024 Bullard, Texas
E.L.S. Surveying & Mapping, Inc.

Registered Professional Land Surveyor No. 5262

Drafter: ECJ FB 2744/88-97 Job No. 430923 Map No. J-0923-LOC-INJ1B

CONFIDENTIAL BUSINESS INFORMATION

CHRISTI CRADDICK, CHAIRMAN
WAYNE CHRISTIAN, COMMISSIONER
JIM WRIGHT, COMMISSIONER



DANNY SORRELLS
DIRECTOR, OIL AND GAS DIVISION

PETER FISHER, P.G.
DISTRICT DIRECTOR

RAILROAD COMMISSION OF TEXAS

OIL AND GAS DIVISION

OPERATOR Name:	EXXONMOBIL LOW C SOL ON	**RE:**	**Lease:**	LaBelle Properties, Ltd
Address1:	ATTN EDWARD E GRAHAM W1.2B.02			
Address2:	22777 SPRINGWOODS VILLAGE PKWY	**Well No:**	1	
City:	SPRING	**Sec:**	42	**Block:**
State:	TX	**County:**	JEFFERSON	
		Survey Name:	Stark, W. L.	

SWR13EX Application Number: 130360 **Drilling Permit No:**

SWR 13 CASING EXCEPTION APPLICATION/ALTERNATIVE REQUEST APPROVED

The Proposed Casing and Cementing Program submitted for **LEASE** LaBelle Properties, Ltd ; **WELL** 1 has been approved by the Railroad Commission of Texas District Office.

a. A copy of this approved letter must be kept on location during all phases of drilling and/or plugging operations. Once approved, changes CANNOT be made to the Proposed Casing Program on the original application without additional approval from the Railroad Commission of Texas District Office.

b. Any substantive modifications to the cement program require prior approval from the Railroad Commission of Texas District Office, and may require re-submission of the SWR 13 (Statewide Rule 13) Alternate Surface Casing Application. Contact the Railroad Commission of Texas District Office for more information.

c. The tail slurry must be sufficient to fill the Zone of Critical Cement as described in Statewide Rule 13(b)(1)(H)(i). In addition, all cement slurries must be mixed on location as described in Application for Alternate Surface Casing Program.

d. The casing and cement program shall adhere to the following specifications:

Set 2230 feet of surface casing and circulate cement from the shoe to the ground surface.

DP 898448 - Exxonmobil, Labelle Properties Ltd Lease Well 1 (245 32913)

IF CEMENT IS NOT CIRCULATED TO THE GROUND SURFACE AS REQUIRED BY THIS EXCEPTION, YOU MUST CONTACT THE RAILROAD COMMISSION OF TEXAS DISTRICT OFFICE IMMEDIATELY AND FOLLOW THE PROCEDURES SET OUT IN RULE 13(b)(1)(H)(iii) OR AS REQUIRED BY THE RAILROAD COMMISSION OF TEXAS DISTRICT OFFICE.

CONFIDENTIAL BUSINESS INFORMATION

You must comply with all other provisions of SWR 13 (Statewide Rule 13) and a representative of the cementing company who performs the cementing job for the protection of usable quality water strata must sign the Form W-15 attesting to the information regarding cementing operations performed; including circulation of cement. (Note: If surface casing is set below the approved depth, this can result in denial of future Statewide Rule 13(b)(1)(H)(i) requests.) A condition of the approved drilling permit requires notification to the Railroad Commission of Texas District Office eight (8) hours prior to the time casing is to be set/cemented in the well. If your exception request was submitted after the subject well has been drilled and completed, the operator may be referred for enforcement action.

This authorization shall expire within five (5) years from the date the Groundwater Protection Determination was issued, or at the expiration of the drilling permit (if the well is not spudded prior to expiration) for the referenced well, whichever occurs first. Furthermore, this authorization supersedes any prior authorizations issued for the referenced well.

This exception is based on information provided when the application was submitted 05/20/2024 .
If any information has changed, you must contact the appropriate Railroad Commission of Texas District Office, and submit a new application if applicable. If you have questions, please contact the appropriate Oil and Gas District office.

RRC APPROVAL BY: AUDREY KUKLENZ DATE: 05/20/2024

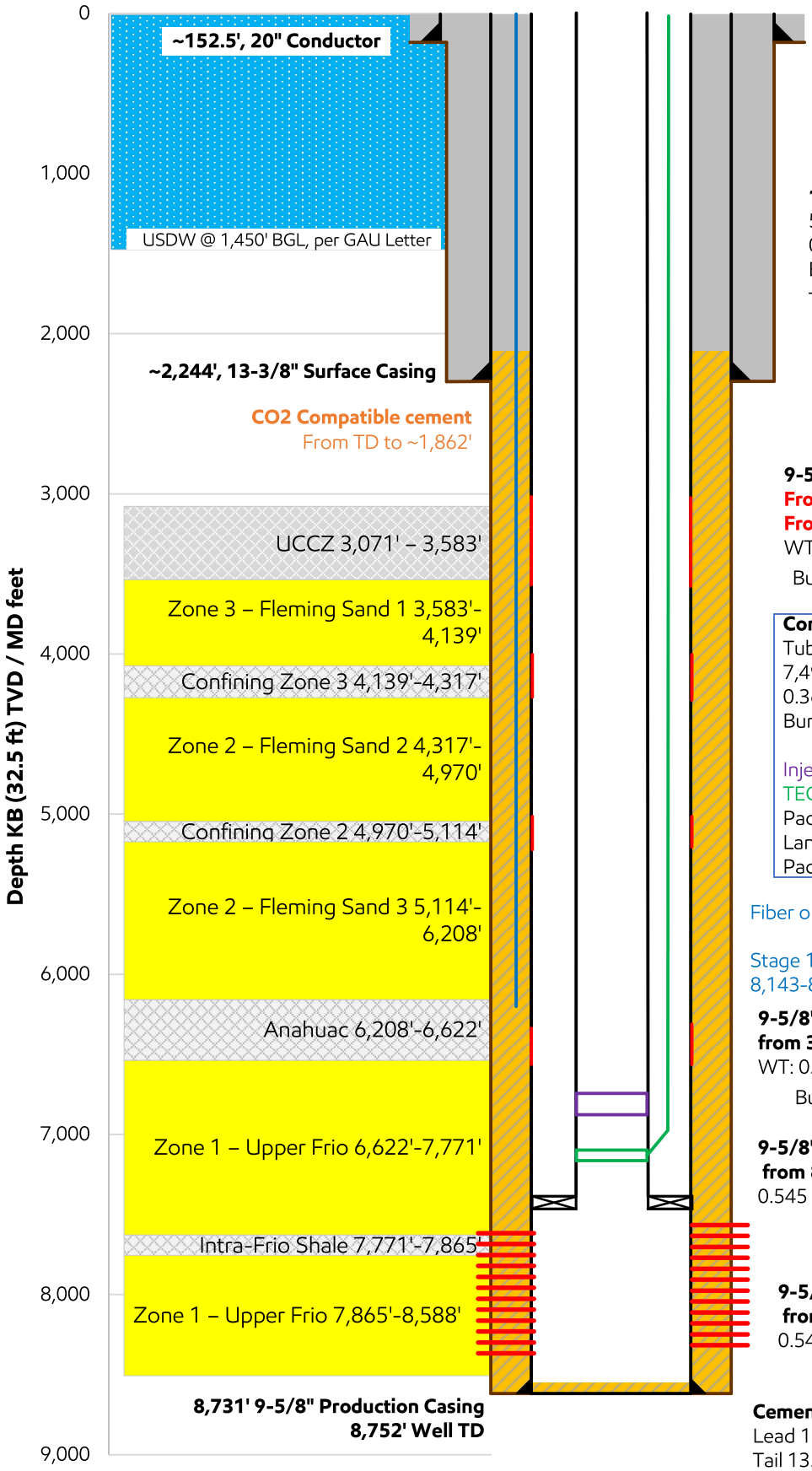
PETER FISHER, P.G.

DISTRICT DIRECTOR

CONFIDENTIAL BUSINESS INFORMATION

Rose CCS Project Bead Farm Co 2

Completion Wellbore Schematic



20" Conductor
78.6 ppf, X-52, Welded
0.375" WT, 19.25" ID
Burst: 1,950, Collapse: 320 psi, Tensile: 1,202 kips

13-3/8" Surface casing
54.5 ppf, J-55, BTC
0.380" WT, 12.615" ID, 12.459" Drift
Burst: 2,740 psi, Collapse: 1,130 psi, Tensile: 853 kips
TOC @ Surface

9-5/8", 47 ppf, L80, DWC/C-SR, from surface to 3,049' TVDdf
0.472 WT, 8.681" ID, 8.525 Drift
Burst: 6,870 psi, Collapse: 4,760 psi, 1,086 kips

9-5/8", 53.5 ppf, SM25Cr-125, VAM 21
From 3,049' – 3,597 (548'), 4,129'- 4,347' (218')
From 4,966' – 5,147' (181'), 6,428' – 6,647' (219')
WT: 0.545" 8.535" ID, 8.5" drift
Burst: 12,740 psi, Collapse: 8,440 psi, Tensile: 1,943 kips

Completions:
Tubing – 7", 26 ppf, L80-13Cr, VAM21, from surface to 7,491'
0.362" WT, 6.276" ID, 6.151" Drift
Burst: 7,240, Collapse: 5,410, Tensile: 604 kips

Injection safety valve ~7,456'
TEC P&T gauge ~7,481'
Packer ~7,491'
Landing nipple ~7,513' min ID 4.437"
Packer Fluid – 7 ppg Diesel

Fiber optic line from surface to ~6,184'

Stage 1 perf interval: 7,540'-7,769'; 7,962'-8,026'; 8,107'-8,124'; 8,143-8,160'

9-5/8", 47 ppf, 13Cr-80, JFE Lion, from 3,597' to 8,092' TVDdf except where 25CR125 is noted
WT: 0.4472" 8.681" ID, 8.525" drift
Burst: 6,870 psi, Collapse: 4,750 psi, Tensile: 1,086 kips

9-5/8" 53.5 ppf, 13Cr-80, JFE Lion from 8,092' - 8,610' TVDdf
0.545 WT, 8.535" ID, 8.50" Drift
Burst: 7,930 psi, Collapse: 6,620 psi, 1,244 kips

9-5/8" 53.5 ppf, L-80, JFE Lion from 8,610' - 8,731' TVDdf (shoe track)
0.545 WT, 8.535" ID, 8.50" Drift
Burst: 7,930 psi, Collapse: 6,620 psi, 1,244 kips

Cement:
Lead 12.5 ppg, from surface to ~1,862'
Tail 13.5 ppg CO2 compatible cement, from ~1,862' to ~8,752'

CONFIDENTIAL BUSINESS INFORMATION

API No. 42-245-32911
Drilling Permit # 898449
SWR Exception

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

APPLICATION FOR PERMIT TO DRILL, RECOMPLETE, OR RE-ENTER

This facsimile W-1 was generated electronically from data submitted to the RRC.
A certification of the automated data is available in the RRC's Austin office.

FORM W-1 07/2004

Permit Status: Approved

1. RRC Operator No.: 101256

2. Operator's Name (as shown on form P-5, Organization Report): EXXONMOBIL LOW C SOL ON STOR LLC

3. Operator Address (include street, city, state, zip): ATTN EDWARD E GRAHAM, 22777 SPRINGWOODS VILLAGE PKWY, SPRING, TX 77389-0000

4. Lease Name: BEAD FARM CO.

5. Well No.: 2

GENERAL INFORMATION

6. Purpose of filing (mark ALL appropriate boxes): [X] New Drill [ ] Recompletion [ ] Reclass [ ] Field Transfer [ ] Re-Enter [ ] Amended [ ] Amended as Drilled (BHL) (Also File Form W-1D)

7. Wellbore Profile (mark ALL appropriate boxes): [X] Vertical [ ] Horizontal (Also File Form W-1H) [ ] Directional (Also File Form W-1D) [ ] Sidetrack

8. Total Depth: 10000

9. Do you have the right to develop the minerals under any right-of-way ? [X] Yes [ ] No

10. Is this well subject to Statewide Rule 36 (hydrogen sulfide area)? [ ] Yes [X] No

SURFACE LOCATION AND ACREAGE INFORMATION

11. RRC District No.: 03

12. County: JEFFERSON

13. Surface Location [X] Land [ ] Bay/Estuary [ ] Inland Waterway [ ] Offshore

14. This well is to be located 4.5 miles in a SE direction from China which is the nearest town in the county of the well site.

15. Section: 41

16. Block:

17. Survey: T&NO RR CO

18. Abstract No.: A-266

19. Distance to nearest lease line: ft.

20. Number of contiguous acres in lease, pooled unit, or unitized tract: 470

21. Lease Perpendiculars: 692 ft from the WEST line and 2409 ft from the SOUTH line.

22. Survey Perpendiculars: 1535 ft from the WEST line and 2409 ft from the SOUTH line.

23. Is this a pooled unit? [ ] Yes [X] No

24. Unitization Docket No:

25. Are you applying for Substandard Acreage Field? [ ] Yes (attach Form W-1A) [X] No

FIELD INFORMATION — List all fields of anticipated completion including Wildcat. List one zone per line.

26. RRC District No.	27. Field No.	28. Field Name (exactly as shown in RRC records)	29. Well Type	30. Completion Depth	31. Distance to Nearest Well in this Reservoir	32. Number of Wells on this lease in this Reservoir
03	00006001	WILDCAT	Exploratory Test Well	8800	0.00	1

BOTTOMHOLE LOCATION INFORMATION is required for DIRECTIONAL, HORIZONTAL, AND AMENDED AS DRILLED PERMIT APPLICATIONS

Remarks

[RRC STAFF Mar 28, 2024 4:31 PM]: There have been problems identified with this permit (see problem letter attachment). Notification sent.; [RRC STAFF Apr 4, 2024 3:00 PM]: Problems identified with this permit are resolved.; [RRC STAFF Apr 4, 2024 3:06 PM]: Changed survey line call from 692' W to 1535' W per plat.; [RRC STAFF Apr 4, 2024 3:07 PM]: Amended plat uploaded.

RRC Use Only Data Validation Time Stamp: Mar 26, 2025 1:51 PM(Current Version)

Certificate:

I certify that information stated in this application is true and complete, to the best of my knowledge.

Josh Calkin — Name of filer
Mar 27, 2024 — Date submitted

(281)702-5537 — Phone
Josh.Calkin@erm.com — E-mail Address (OPTIONAL)

CONFIDENTIAL BUSINESS INFORMATION

Railroad Commission of Texas

PERMIT TO DRILL, RE-COMPLETE, OR RE-ENTER ON REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

CONDITIONS AND INSTRUCTIONS

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Completion and Plugging Reports

Hydraulic Fracture Stimulation using Diesel Fuel: Most operators in Texas do not use diesel fuel in hydraulic fracturing fluids. Section 322 of the Energy Policy Act of 2005 amended the Underground Injection Control (UIC) portion of the federal Safe Drinking Water Act (42 USC 300h(d)) to define "underground Injection" to *EXCLUDE* " ...the underground injection of fluids or propping agents (*other than diesel fuels*) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities." (italic and underlining added.) Therefore, hydraulic fracturing may be subject to regulation under the federal UIC regulations if diesel fuel is injected or used as a propping agent. EPA defined "diesel fuel" using the following five (5) Chemical Abstract Service numbers: 68334-30-5 Primary Name: Fuels, diesel; 68476-34-6 Primary Name: Fuels, diesel, No. 2; 68476-30-2 Primary Name: Fuel oil No. 2; 68476-31-3 Primary Name: Fuel oil, No. 4; and 8008-20-6 Primary Name: Kerosene. As a result, an injection well permit would be required before performing hydraulic fracture stimulation using diesel fuel as defined by EPA on any well in Texas. Hydraulic fracture stimulation using diesel fuel as defined by EPA on a well in Texas without an injection well permit could result in enforcement action.

Producing Well. Statewide Rule 16 states that the operator of a well shall file with the Commission the appropriate completion report within ninety (90) days after completion of the well or within one hundred and fifty (150) days after the date on which the drilling operation is completed, whichever is earlier. Completion of the well in a field authorized by this permit voids the permit for all other fields included in the permit unless the operator indicates on the initial completion report that the well is to be a dual or multiple completion and promptly submits an application for multiple completion. All zones are required to be completed before the expiration date on the existing permit. Statewide Rule 40(d) requires that upon successful completion of a well in the same reservoir as any other well previously assigned the same acreage, proration plats and P-15s or P-16s (if required) or a lease plat and P-16 must be submitted with no double assignment of acreage unless authorized by rule.

Dry or Noncommercial Hole. Statewide Rule 14(b)(2) prohibits suspension of operations on each dry or non-commercial well without plugging unless the hole is cased and the casing is cemented in compliance with Commission rules. If properly cased, Statewide Rule 14(b)(2) requires that plugging operations must begin within a period of one (1) year after drilling or operations have ceased. Plugging operations must proceed with due diligence until completed. An extension to the one-year plugging requirement may be granted under the provisions stated in Statewide Rule 14(b)(2).

Intention to Plug. The operator must file a Form W-3A (Notice of Intention to Plug and Abandon) with the district office at least five (5) days prior to beginning plugging operations. If, however, a drilling rig is already at work on location and ready to begin plugging operations, the district director or the director's delegate may waive this requirement upon request, and verbally approve the proposed plugging procedures.

***Notification of Plugging a Dry Hole.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of four (4) hours prior to beginning plugging operations. The individual giving the notification MUST be able to advise the district office of the drilling permit number and all water protection depths for that location as stated in the Groundwater Advisory Unit letter.

DIRECT INQUIRIES TO: DRILLING PERMIT SECTION, OIL AND GAS DIVISION

PHONE
(512) 463-6751

MAIL:
PO Box 12967
Austin, Texas, 78711-2967

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER	DATE PERMIT ISSUED OR AMENDED	DISTRICT
898449	Apr 04, 2024	* 03
API NUMBER	**FORM W-1 RECEIVED**	**COUNTY**
42-245-32911	Mar 27, 2024	JEFFERSON
TYPE OF OPERATION	**WELLBORE PROFILE(S)**	**ACRES**
NEW DRILL	Vertical	470

OPERATOR 101256

EXXONMOBIL LOW C SOL ON STOR LLC

ATTN EDWARD E GRAHAM
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389-0000

NOTICE

This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored.

District Office Telephone No:

(713) 869-5001

LEASE NAME	WELL NUMBER
BEAD FARM CO.	2
LOCATION	**TOTAL DEPTH**
4.5 miles SE direction from CHINA	10000

Section, Block and/or Survey

SECTION 41 BLOCK ABSTRACT 266

SURVEY T&NO RR CO

DISTANCE TO SURVEY LINES	DISTANCE TO NEAREST LEASE LINE
1535 ft. WEST 2409 ft. SOUTH	ft.
DISTANCE TO LEASE LINES	**DISTANCE TO NEAREST WELL ON LEASE**
692 ft. WEST 2409 ft. SOUTH	See FIELD(s) Below

FIELD(s) and LIMITATIONS:

* SEE FIELD DISTRICT FOR REPORTING PURPOSES *

FIELD NAME / LEASE NAME	ACRES / NEAREST LEASE	DEPTH	WELL # / NEAREST WE	DIST
WILDCAT	470.00	8,800	2	03
BEAD FARM CO.			0	

RESTRICTIONS: For exploratory test only

THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS

This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.

This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

SWR #13 Formation Data

JEFFERSON (245) County

Formation	Remarks	Geological Order	Effective Date
LAFAYETTE	disposal	1	12/17/2013
CAPROCK	disposal	2	12/17/2013
SPINDLETOP SALT DOME	disposal	3	12/17/2013
FANNETT SALT DOME	disposal	4	12/17/2013
BIG HILL SALT DOME	disposal	5	12/17/2013
PLEISTOCENE-LISSIE	disposal	6	12/17/2013
MIOCENE	disposal	7	12/17/2013
FRIO	disposal	8	12/17/2013
MARINULINA	disposal	9	12/17/2013
HETEROSTEGINA	disposal	10	12/17/2013

The above list may not be all inclusive, and may also include formations that do not intersect all wellbores. The listing order of the Formation information reflects the general stratigraphic order and relative geologic age. This is a dynamic list subject to updates and revisions. It is the operator's responsibility to make sure that at the time of spudding the well the most current list is being referenced. Refer to the RRC website at the following address for the most recent information.
http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info

CONFIDENTIAL BUSINESS INFORMATION

GROUNDWATER PROTECTION DETERMINATION

Form GW-2

Groundwater Advisory Unit

Date Issued:	31 December 2024	**GAU Number:**	389717

Attention:	EXXONMOBIL LOW C SOL ON ATTN EDWARD E GRAHAM SPRING, TX 77389	**API Number:**	24532911
		County:	JEFFERSON
		Lease Name:	Bead Farm Co.
		Lease Number:	
Operator No.:	101256	**Well Number:**	2
		Total Vertical	10000
		Latitude:	29.990801
		Longitude:	-94.297850
		Datum:	NAD27

Purpose: Injection into Non-producing Zone (W-14)

Location: Survey-T&NO RR CO; Abstract-266; Section-41

To protect usable-quality groundwater at this location, the Groundwater Advisory Unit of the Railroad Commission of Texas recommends:

This Initial Recommendation is for the purpose of Class VI injection only.

Usable-quality water occurs from the land surface to a depth of 1,200 feet. Moreover, the interval from the land surface to a depth of 700 feet contains water of superior quality which must be isolated from water in underlying beds.

The BASE OF UNDERGROUND SOURCES OF DRINKING WATER (USDW) is estimated to occur at a depth of 1,450 feet at the site of the referenced well.

*(SIP Purpose Only) Water Code Section 27.046(a) requires the GAU to issue a GW-2 letter containing Non-Endangerment language prior to issuance of a class VI permit. An additional letter will be required before SIP can issue a final permit because this letter is silent on endangerment of fresh water. *

Note: Unless stated otherwise, this recommendation is intended to apply to all wells drilled within 200 feet of the subject well. Unless stated otherwise, this recommendation is for normal drilling, production, and plugging operations only.

This determination is based on information provided when the application was submitted on 12/19/2024. If the location information has changed, you must contact the Groundwater Advisory Unit, and submit a new application if necessary. If you have questions, please contact us at 512-463-2741 or gau@rrc.texas.gov.

Groundwater Advisory Unit, Oil and Gas Division

CONFIDENTIAL BUSINESS INFORMATION

GROUNDWATER PROTECTION DETERMINATION

Form GW-2

Groundwater Advisory Unit

Date Issued:	11 February 2025	**GAU Number:**	390198

Attention:	EXXONMOBIL LOW C SOL ON ATTN EDWARD E GRAHAM SPRING, TX 77389	**API Number:**	24532911
		County:	JEFFERSON
		Lease Name:	Bead Farm Co.
		Lease Number:	
Operator No.:	101256	**Well Number:**	2
		Total Vertical	10000
		Latitude:	29.990801
		Longitude:	-94.297850
		Datum:	NAD27

Purpose: Injection into Non-producing Zone (W-14)

Location: Survey-T&NO RR CO; Abstract-266; Section-41

To protect usable-quality groundwater at this location, the Groundwater Advisory Unit of the Railroad Commission of Texas recommends:

This Recommendation is for the purpose of Class VI injection only.

Usable-quality water occurs from the land surface to a depth of 1,200 feet. Moreover, the interval from the land surface to a depth of 700 feet contains water of superior quality which must be isolated from water in underlying beds.

The BASE OF UNDERGROUND SOURCES OF DRINKING WATER (USDW) is estimated to occur at a depth of 1,450 feet at the site of the referenced well.

This recommendation is applicable to an area extent within a radius of 0.8 mile of this location.

The vertical geological isolation from both bases of usable quality water and underground source of drinking water is at 3,200 feet in TVD depth (for UIC Purpose Only).

Injection into the subsurface interval from 3,400 to 8,600 feet in TVD depth, as proposed in the submitted W14 (Class VI) application dated on December 18th of 2024 , WILL NOT ENDANGER the PROTECTED WATER STRATA geologically at the proposed location in this area (for UIC Purpose Only).

Note: Unless stated otherwise, this recommendation is intended to apply to all wells drilled within 200 feet of the subject well. Unless stated otherwise, this recommendation is for normal drilling, production, and plugging operations only.

This determination is based on information provided when the application was submitted on 01/22/2025. If the location information has changed, you must contact the Groundwater Advisory Unit, and submit a new application if necessary. If you have questions, please contact us at 512-463-2741 or gau@rrc.texas.gov.

Groundwater Advisory Unit, Oil and Gas Division

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

Form W-2

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

Status: Approved
Date: 02/20/2025
Tracking No.: 326169

OIL WELL POTENTIAL TEST, COMPLETION OR RECOMPLETION REPORT,

OPERATOR INFORMATION

Operator EXXONMOBIL LOW C SOL ON STOR LLC **Operator** 101256
Operator ATTN EDWARD E GRAHAM 22777 SPRINGWOODS VILLAGE PKWY SPRING, TX 77389-0000

WELL INFORMATION

API 42-245-32911 **County:** JEFFERSON
Well No.: 2 **RRC District** 03
Lease BEAD FARM CO. **Field** WILDCAT
RRC Lease 28125 **Field No.:** 00006001
Location Section: 41, Block: , Survey: T&NO RR CO, Abstract: 266

Latitude 29 **Longitud** -94
This well is 4.5 **miles in a** SE
direction from CHINA,
which is the nearest town in the

FILING INFORMATION

Purpose of Well Record Only
Type of New Well
Well Type: Shut-In Producer **Completion or Recompletion** 10/09/2024

Type of Permit	Date	Permit No.
Permit to Drill, Plug Back, or	04/04/2024	898449
Rule 37 Exception		
Fluid Injection		
O&G Waste Disposal		
Other:		

COMPLETION INFORMATION

Spud 07/15/2024 **Date of first production after rig** 10/09/2024
Date plug back, deepening, drilling operation 07/15/2024 **Date plug back, deepening, recompletion, drilling operation** 10/09/2024
Number of producing wells on this lease this field (reservoir) including this 0 **Distance to nearest well in lease & reservoir** 0.0
Total number of acres in 470.00 **Elevation** 22 GL
Total depth TVD 8752 **Total depth MD**
Plug back depth TVD 8650 **Plug back depth MD**
Was directional survey made other inclination (Form W- No **Rotation time within surface casing Is Cementing Affidavit (Form W-15)** 55.5 Yes
Recompletion or No **Multiple** No
Type(s) of electric or other log(s) Gamma Ray (MWD)
Electric Log Other Description:
Location of well, relative to nearest lease of lease on which this well is 692.0 **Feet from the** West **Line and** 2409.0 **Feet from the** South **Line of the** BEAD FARM CO. **Lease.** **Off Lease :** No

FORMER FIELD (WITH RESERVOIR) & GAS ID OR OIL LEASE NO.

Field & Reservoir	Gas ID or Oil Lease	Well No.	Prior Service Type

PACKET: N/A

W2: N/A

FOR NEW DRILL OR RE-ENTRY, SURFACE CASING DEPTH DETERMINED BY:

GAU Groundwater Protection Determination		**Depth**	1100.0	**Date**	03/21/2024
SWR 13 Exception		**Depth**	2265.0		

INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION

Date of		**Production**	
Number of hours	24	**Choke**	
Was swab used during this	No	**Oil produced prior to**	

PRODUCTION DURING TEST PERIOD:

Oil		**Gas**	
Gas - Oil	0	**Flowing Tubing**	
Water			

CALCULATED 24-HOUR RATE

Oil		**Gas**	
Oil Gravity - API - 60.:		**Casing**	
Water			

CASING RECORD

Ro	Type of Casing	Casing Size (in.)	Hole Size	Setting Depth	Multi - Stage Tool	Multi - Stage Shoe	Cement Class	Cement Amoun	Slurry Volume (cu.	Top of Cement (ft.)	TOC Determined By
1	Surface	13 3/8	17 1/2	2244			H	1115	2210.4	0	Circulated to Surface
2	Conductor	20	26	120			A	230	274.0	0	Circulated to Surface
3	Conventional Production	9 5/8	12 1/4	8731			H	2010	3804.0	0	Circulated to Surface

LINER RECORD

Ro	Liner Size	Hole Size	Liner Top	Liner Bottom	Cement Class	Cement Amoun	Slurry Volume (cu.	Top of Cement (ft.)	TOC Determined

N/A

TUBING RECORD

Ro	Size (in.)	Depth Size (ft.)	Packer Depth (ft.)/Type
1	7	7491	7491 / WIRELINE SET, PERMANENT

PRODUCING/INJECTION/DISPOSAL INTERVAL

Ro	Open hole?	From (ft.)	To (ft.)
1	No	L 7540	7769.0
2	No	L 7962	8026.0
3	No	L 8107	8124.0
4	No	L 8143	8160.0

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC.

Was hydraulic fracturing treatment No

Is well equipped with a downhole sleeve? No

If yes, actuation pressure

Production casing test pressure (PSIG) hydraulic fracturing

Actual maximum pressure (PSIG) during fracturin

Has the hydraulic fracturing fluid disclosure been No

Ro	Type of Operation	Amount and Kind of Material Used	Depth Interval (ft.)	
1	Other	PERFORATIONS	7540	8160

FORMATION RECORD

Formations	Encountere	Depth TVD	Depth MD	Is formation	Remarks
LAFAYETTE - DISPOSAL	No			No	MUD LOGGING AND CUTTING SAMPLES WERE NOT COLLECTED IN THE SHALLOW HOLE SECTION. THEREFORE, SHALLOW FORMATIONS ENCOUNTERED COULD NOT BE CONFIRMED AS LAFAYETTE AND/OR PLEISTOCENE.
CAPROCK - DISPOSAL	No			No	NOT ENCOUNTERED
SPINDLETOP SALT DOME - DISPOSAL	No			No	NOT ENCOUNTERED
FANNETT SALT DOME - DISPOSAL	No			No	NOT ENCOUNTERED
BIG HILL SALT DOME - DISPOSAL	No			No	NOT ENCOUNTERED
PLEISTOCENE-LISSIE - DISPOSAL	No			No	MUD LOGGING AND CUTTING SAMPLES WERE NOT COLLECTED IN THE SHALLOW HOLE SECTION. THEREFORE, SHALLOW FORMATIONS ENCOUNTERED COULD NOT BE CONFIRMED AS LAFAYETTE AND/OR PLEISTOCENE.
MIOCENE - DISPOSAL	Yes	3582.0	3583.0	Yes	LOGGED
FRIO - DISPOSAL	Yes	6621.0	6622.0	Yes	LOGGED - PERFORATIONS IN THE LOWER FRIO SAND FROM 7,540'-8,160'
MARINULINA - DISPOSAL	Yes	6208.1	6208.0	Yes	LOGGED
HETEROSTEGINA - DISPOSAL	Yes	6356.0	6357.0	Yes	LOGGED

Do the producing interval of this well produce H2S with a concentration in excess of 100 ppm No

Is the completion being downhole commingled No

REMARKS

THE WELL WAS PERFORATED AND SHUT IN. THIS WELL HAS NOT PRODUCED.

RRC REMARKS

PUBLIC COMMENTS:

CASING RECORD :

NONE.

TUBING RECORD:

PRODUCING/INJECTION/DISPOSAL INTERVAL :

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC. :

POTENTIAL TEST DATA:

OPERATOR'S CERTIFICATION

Printed	Josh Calkin	**Title:**	
Telephone	(281) 702-5537	**Date**	02/10/2025

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name: Exxon Mobil 100 Carbon Solutions	Operator P-5 No.: 101256
Cementer Name: Halliburton	Cementer P-5 No.: 347151

WELL INFORMATION

District No.: 3	County: Jefferson
Well No.: Bead Farm CO. #2	API No.: 42-245-32911 Drilling Permit No.: 898449
Lease Name: Bead Farm CO. #2	Lease No.:
Field Name: Wildcat	Field No.:

I. CASING CEMENTING DATA

Type of casing: ☐ Conductor ☑ Surface ☐ Intermediate ☐ Liner ☐ Production

Drilled hole size (in.): 17.5"	Depth of drilled hole (ft.): 2254	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.): 13 3/8"	Casing weight (lbs/ft) and grade: 68# J55	No. of centralizers used: 19
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☑ YES ☐ NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 2244	Top of liner (ft.): / Setting depth liner (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date: 7/17/2024

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	730	A	SEE RAMARKS	1719.15	2158
2	385	XH	SEE REMARKS	491.26	654
3					
Total	1115			2210.41	2812

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth shoe (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth tool (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS
909463543,EXXONMOBIL LOW CARBON-EBUS,Bead Farm CO #2,SURFACE: SLURRY 1:EconoCem , SLURRY 2:HALCem

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

ZOUHIR ROUBACHE	Halliburton		
Name and title of cementer's representative	Cementing Company	Signature	
4720 Industrial	Bossier City, LA 71112	903-986-5096	7/17/2024
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

James Harvey	Operations Supervisor		
Typed or printed name of operator's representative	Title	Signature	
22777 Springwoods Village	Spring Tx 77389	512 949 8272	7/17/24
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

A. **What to file:** An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on one form.

The Form W-15 should be filed with the Form W-3, Plugging Record, unless the Form W-3 is signed by the cementing company representative. When reporting dry holes, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.

B. **How to file:** An oil and gas completion report and Form W-15 may be filed online using the Commission's Online System (https://webapps.rrc.state.tx.us/security/login.do) or a paper copy of the form may be mailed to the Commission in Austin (P.O. Box 12967, Austin, Texas 78711-2967).

C. **Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.

To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 (http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.

D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing **and** Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name:	Bryd Oilfield	Operator P-5 No.:	
Cementer Name:	CUDD Pumping Services	Cementer P-5 No.:	191917

WELL INFORMATION

District No.:		County:	Jefferson		
Well No.:	#2	API No.:		Drilling Permit No.:	
Lease Name:	Bead Farm Co	Lease No.:			
Field Name:		Field No.:			

I. CASING CEMENTING DATA

Type of casing: [X] Conductor [ ] Surface [ ] Intermediate [ ] Liner [ ] Production

Drilled hole size (in.): 26	Depth of drilled hole (ft.): 120	Est. % wash-out or hole enlargement: 30	
Size of casing in O.D. (in.): 20	Casing weight (lbs/ft) and grade: 78.6 ppf X-52 (Welded)	No. of centralizers used:	
Was cement circulated to ground surface (or bottom of cellar) outside casing? [X] YES [ ] NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 120	Top of liner (ft.):	Setting depth liner (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.): 0	Cementing date: 7/2/2024	

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	230	Class A	Plus Adds	274	182
2					
3					
Total	230			274	182

II. CASING CEMENTING DATA

Type of casing: [ ] Surface [ ] Intermediate [ ] Production [ ] Tapered production [ ] Multi-stage cement shoe [ ] Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:	
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:	
Tapered string drilled hole size (in.) Upper: Lower:		Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:	
Was cement circulated to ground surface (or bottom of cellar) outside casing? [ ] YES [ ] NO	Setting depth shoe (ft.):		
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:	

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

III. CASING CEMENTING DATA

Type of casing: [ ] Surface [ ] Intermediate [ ] Production [ ] Tapered production [ ] Multi-stage cement/DV tool [ ] Multiple parallel strings

Drilled hole size	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:	
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:	
Tapered string drilled hole size (in.) Upper: Lower:		Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:	
Was cement circulated to ground surface (or bottom of cellar) outside casing? [ ] YES [ ] NO	Setting depth tool (ft.):		
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:	

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date				-	-	-	-
Size of hole of pipe (in.)	-	-	-	-	-	-	-
Depth to bottom of tubing or drill pipe (ft.)	-	-	-	-	-	-	-
Cement retainer setting depth (ft.)	-	-	-	-	-	-	-
CIBP setting depth (ft.)	-	-	-	-	-	-	-
Amount of cement on top of CIBP (ft.)	-	-	-	-	-	-	-
Sacks of cement used				-	-	-	-
Slurry volume pumped (cu. ft.)				-	-	-	-
Calculated top of plug (ft.)				-	-	-	-
Measured top of plug, if tagged (ft.)			-	-	-	-	-
Slurry weight (lbs/gal)				-	-	-	-
Class/type of cement				-	-	-	-
Perforate and squeeze (YES/NO)	-	-	-	-	-	-	-

REMARKS	
1	10 Bbls of cement to surface
2	
3	
4	

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

KELSI BARNETT	Service Supervisor	CUDD Pumping Services	Kelsi Barnett
Name and title of cementer's representative		Cementing Company	Signature

1434 CR 422	Pleasanton	TX	78064	(830)-254-4200	7/2/2024
Address	City,	State, Zip Code		Tel: Area Code Number	Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that the data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

Michael Mathis	Rig Supervisor	
Typed or printed name of operator's representative	Title	Signature

			512	949-8272	7/2/2024
Address	City,	State, Zip Code		Tel: Area Code	Number	Date:

Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

A. **What to file:** An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on on form.

The Form W-15 should be filed with the form W-3, Plugging Record, unless the Form W-3 si signed by the cementing company representative. When reporting dry holes, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.

B. **How to file:** An oil and gas completion report and Form W-15 may be filed online using the Commission's Online System (https://webapps.rrc.state.tx.us/security/login.do) or a paper copy of the form may be mailed to the Commission in Austin (P.O. Box 12967, Austin, Texas 78711-2967).

C. **Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.

To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 (http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&ptac=&ti=16&pt=1&ch=3&rl=14). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.

D. **Estimated % wash-out:** If the estimated % wash-outis less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing **and** Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as and attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W15's to show all data for multiple parallel strings.

G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name: ExxonMobil Low Carbon Solution	Operator P-5 No.: 101256
Cementer Name: Halliburton	Cementer P-5 No.: 347151

WELL INFORMATION

District No.: 3	County: Jefferson	
Well No.: Bead Farm Co. #2	API No.: 42-245-32911	Drilling Permit No.: 898449
Lease Name: Bead Farm Co. #2	Lease No.:	
Field Name: Wildcat	Field No.:	

I. CASING CEMENTING DATA

Type of casing: ☐ Conductor ☐ Surface ☐ Intermediate ☐ Liner ☒ Production

Drilled hole size (in.): 12-1/4"	Depth of drilled hole (ft.): 8752'	Est. % wash-out or hole enlargement: 0%
Size of casing in O.D. (in.): 9-5/8"	Casing weight (lbs/ft) and grade: 47/53.5 ppf L80/13Cr/25Cr	No. of centralizers used: 179
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☑ YES ☐ NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 8731'	Top of liner (ft.):
		Setting depth liner (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.): 0	Cementing date: 8-1-2024

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	735	H	N/A	1341	1907
2	1275	H	N/A	2463	6826
3					
Total	2010			3804	8733

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth shoe (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth tool (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS

EXXON, BEAD FARM CO, #2, PRODUCTION

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

JEROD HACK, SERVICE SUPERVISOR	Halliburton		
Name and title of cementer's representative	Cementing Company	Signature	
4720 Industrial	Bossier City, LA 71112	903-986-5096	8-1-2024
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

MICHAEL MATHIS	WELL OPERATIONS SUPERVISOR	
Typed or printed name of operator's representative	Title	Signature
	(512) 949-8272	08-1-2024
Address City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

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D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing **and** Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON | Sperry Drilling

DGR / EWR-P4 / DIR

Powered by INSITE™

1 : 500

MD Phase Attenuation Log

Country : USA
Field : WILDCAT
Location : Lat: 29° 59' 27.66" North Long: 94° 17' 52.93" West
Well : BEAD FARM CO. 2
Company : EXXONMOBIL LOW C SOL ON STOR LL
Rig : NABORS X33

Company : EXXONMOBIL LOW C SOL ON STOR LL
Rig : NABORS X33
Well : BEAD FARM CO. 2
Field : WILDCAT
Country : USA
API Number : 4224532911

LOCATION
Latitude : 29° 59' 27.66" North
Longitude : 94° 17' 52.93" West
StatePlane X = 3,456,559.210 usft
StatePlane Y = 13,937,806.680 usft

Other Services

Permanent Datum : Ground Level
Elevation : 25.90 ft
Log Measured From : Drill Floor
32.52 ft Above Permanent Datum
Drilling Measured From :

MD LOG

Elev. KB
DF 58.42 ft
GL 25.90 ft
WD

Depth Logged : 152.00 ft To 8,752.00 ft
Date Logged : 15-Jul-24 To 24-Jul-24
Total Depth MD : 8,752.00 ft TVD : 8,751.76 ft
Spud Date : 15-Jul-24

Unit No. : NA
Job No. : LF-XX-0909093079
Plot Type : Final
Plot Date : 06-Aug-24

Run No.	Borehole Record (MD)			Casing Record (MD)			
	Size	From	To	Size	Weight	From	To
100	17.500 in	152.00 ft	2,254.00 ft	20.000 in	78.60 lbpf	SURFACE	152.50 ft
200	12.250 in	2,254.00 ft	3,120.00 ft	13.375 in	68.00 lbpf	SURFACE	2,244.00 ft
201	12.250 in	3,120.00 ft	3,150.00 ft	9.625 in	47.00 lbpf	SURFACE	8,731.00 ft
300	12.250 in	3,150.00 ft	4,350.00 ft				
301	12.250 in	4,350.00 ft	4,410.00 ft				
400	12.250 in	4,410.00 ft	7,586.00 ft				
401	12.250 in	7,586.00 ft	7,647.00 ft				
500	12.250 in	7,647.00 ft	8,752.00 ft				

CONFIDENTIAL BUSINESS INFORMATION

WELL INFORMATION

MWD Run Number	100	200	300	400	500
Date run completed	16-Jul-24	18-Jul-24	20-Jul-24	22-Jul-24	25-Jul-24
Rig Bit Number	100	200	300	400	500
Bit Size (in)	17.500	12.250	12.250	12.250	12.250
Tool Nominal OD (in)	8.000	8.000	8.000	8.000	8.000
Log Start Depth (MD, ft)	152.00	2,254.00	3,150.00	4,410.00	7,647.00
Log End Depth (MD, ft)	2,254.00	3,120.00	4,350.00	7,586.00	8,752.00
Drill or Wipe	Drill	Drill	Drill	Drill	Drill
Drill/Wipe Start Date and Time	15-Jul-24 09:55	18-Jul-24 12:02	19-Jul-24 18:40	21-Jul-24 09:21	24-Jul-24 05:40
Drill/Wipe End Date and Time	15-Jul-24 21:40	18-Jul-24 17:31	20-Jul-24 03:03	22-Jul-24 15:52	24-Jul-24 19:25
Min Inc (deg) @ Depth (MD, ft)	0.06 @ 956.00	0.42 @ 2,276.00	0.09 @ 4,323.00	0.18 @ 5,208.00	0.00 @ 8,035.00
Max Inc (deg) @ Depth (MD, ft)	0.97 @ 1,621.00	0.75 @ 2,656.00	0.45 @ 3,128.00	0.56 @ 4,538.00	0.44 @ 7,753.00
Bit TFA(in2) / Bit Type	1.23 / GT65s	1.23 / HD65s	1.23 / HD65s	1.23 / HD65s	1.23 / HD65s
Flow Rate (gpm)	700.00	690.00	690.00	700.00	696.00
Max AV (fpm) / CV (fpm) @ MWD	79.0 / 46.0	61.0 / 40.0	61.5 / 43.0	43.7 / 40.0	43.7 / 40.0
Fluid Type	Native/Spud Mud	Diesel Mud Base	Diesel Mud Base	Diesel Mud Base	Diesel Mud Base
Density (ppg) / Viscosity (spqt)	8.50 / 28.00	10.40 / 103.00	10.40 / 101.00	10.30 / 59.00	10.30 / 64.00
Filtrate CL (ppm)	1,100.00	46,000.00	46,000.00	67,000.00	63,000.00
pH / API Filtrate (mptm)	6.90 / 12	N/A / 12	N/A / 12	N/A / 20	N/A / 20
PV (cP) / YP (lhf2)	2 / 2.00	26 / 19.00	26 / 19.00	19 / 23.00	22 / 20.00
% Solids / % Sand	1 / .01	12.2 / 0.01	12 / .01	8.7 / 0.01	11.1 / 0.01
% Oil / Oil:Water Ratio	0 / 0:100	52 / 60:40	52 / 60:40	56 / 64:36	56 / 65:35
Rm @ Measured Temp (degF)	0.200 @ 74.00	N/A @ N/A	N/A @ N/A	N/A @ N/A	N/A @ N/A
Rmf @ Measured Temp (degF)	0.200 @ 74.00	N/A @ N/A	N/A @ N/A	N/A @ N/A	N/A @ N/A
Rmc @ Measured Temp (degF)	0.200 @ 74.00	N/A @ N/A	N/A @ N/A	N/A @ N/A	N/A @ N/A
Max Tool Temp (degF) / Source	113.18 / HCIM	129.00 / HCIM	141.41 / HCIM	162.00 / HCIM	165.00 / HCIM
Rm @ Max Tool Temp (degF)	N/A @ 113.18	N/A @ 129.00	N/A @ 141.41	N/A @ 162.00	N/A @ 165.00
Lead MWD Engineer	Coy Lorraine	Coy Lorraine	Coy Lorraine	Coy Lorraine	Coy Lorraine
Customer Representative	James Harvey	James Harvey	James Harvey	James Harvey	James Harvey

SENSOR INFORMATION

Downhole Processor Information

Tool Type	HCIM	HCIM	HCIM	HCIM	HCIM
Software Version	98.43	98.43	98.43	98.43	98.43
Sub Serial Number	11717163	11717163	11717163	11717163	11717163
Insert Serial Number	12522587	12522587	12522587	12522587	12522587
Date and Time Initialized	15-Jul-24 09:06	17-Jul-24 23:37	19-Jul-24 16:43	21-Jul-24 02:28	24-Jul-24 01:24
Date and Time Read	16-Jul-24 12:59	19-Jul-24 00:54	20-Jul-24 10:06	23-Jul-24 01:22	25-Jul-24 06:02
ECMB SW Version	N/A	N/A	N/A	N/A	N/A

Directional Sensor Information

Tool Type	PCDC	PCDC	PCDC	PCDC	PCDC
Distance From Bit (ft)	35.84	26.21	26.21	65.57	68.20
Software Version	6.43	6.43	6.43	6.43	6.43
Sub Serial Number	121840	121840	121840	121840	111
Sonde Serial Number	13008879	13008879	13008879	13008879	13008879
Sensor ID Number	N/A	N/A	N/A	N/A	N/A
Toolface Offset (deg)	0.00	0.00	0.00	282.46	271.38

Gamma Ray Sensor Information

Tool Type	DGR	DGR	DGR	DGR	DGR
Distance From Bit (ft)	25.26	15.63	15.63	54.99	57.62
Recorded Sample Period (sec)	4	4	4	4	4
Software Version	N/A	N/A	N/A	N/A	N/A
Sub Serial Number	13166196	13166196	13166196	13166196	13166196
Insert/Sonde Serial Number	11671530	11671530	11671530	11674530	11674530

Resistivity Sensor Information

Tool Type	EWR-P4				
Distance From Bit (ft)	11.03				
Recorded Sample Period (sec)	4				
Software Version	1.51				
Sub Serial Number	10673350				
Receiver Insert Serial Number	11827847				
Transmitter Insert Serial Number	11707807				
Receiver Orientation	Down				

REMARKS

All depths are referenced to the driller's pipe tally.

DGXT - Gamma Ray formation exposure time
EWXT - Resistivity formation exposure time

Default 1:500 Log Smoothing:
Interval Resolution: 0.5ft
Window Interval:(+/-) 0.6ft
Gap Fill: 3.0ft

Archive Name: BEAD_FARM_CO_2_500MD_PHASE_ATTEN_152_8752

Plot Width: 8.25 in

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
Oil and Gas Division
Tracking No.: 326169

ELECTRIC LOG STATUS REPORT

This facsimile L-1 was generated electronically from data submitted to the RRC.

FORM L-1

Instructions

When to File Form L-1:
- with Forms G-1, W-2, and GT-1 for new and deepened gas, oil, and geothermal wells
- with Form W-3 for plugged dry holes
- when sending in a log which was held under a request for confidentiality and the period for confidentiality has not yet expired.

When is Form L-1 NOT required:
- with Forms W-2, G-1, and GT-1 filed for injection wells, disposal wells, water supply wells, service wells, re-test wells, re-classifications, and plugbacks of oil, gas or geothermal wells
- with Form W-3 for plugging of other than a dry hole

Where to File Form L-1:
- with the appropriate Commission district office

Filling out Form L-1:
- Section I and the signature section must be filled out for all wells
- complete only the appropriate part of Section II

Type of log required:
- any wireline survey run for the purpose of obtaining lithology, porosity, or resistivity information
- no more than one such log is required but it must be of the subject well
- if such log is NOT run on the subject well, do NOT substitute any other type of log; just select Section II, Part A below

SECTION I. IDENTIFICATION

Operator Name: EXXONMOBIL LOW C SOL ON STOR LLC	District No. 03	Completion Date: 10/09/2024
Field Name WILDCAT	Drilling Permit No. 898449	
Lease Name BEAD FARM CO.	Lease/ID No. 28125	Well No. 2
County JEFFERSON	API No. 42- 245-32911	

SECTION II. LOG STATUS (Complete either A or B)

☐ A. BASIC ELECTRIC LOG NOT RUN

☒ B. BASIC ELECTRIC LOG RUN. (Select one)

☒ 1. Confidentiality is requested and a copy of the header for each log that has been run on the well is attached.

☐ 2. Confidentiality already granted on basic electric log covering this interval (applicable to deepened wells only).

☐ 3. Basic electric log covering this interval already on file with Commission (applicable to deepened wells only).

☐ 4. Log attached to (select one):

☐ (a) Form L-1 (this form). If the company/lease name on log is different from that shown in Section I, please enter name on log here: _____

Check here if attached log is being submitted after being held confidential. ☐

☐ (b) Form P-7, Application for Discovery Allowable and New Field Designation.

☐ (c) Form W-4, Application for Multiple Completion:

Lease or ID No(s). _____

Well No(s). _____

Josh Calkin
Signature

Title

EXXONMOBIL LOW C SOL ON STOR LLC
Name (print)

(281) 702-5537
Phone

12/18/2024
Date

-FOR RAILROAD COMMISSION USE ONLY-

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON

4607 HWY 90 EAST • BROUSSARD, LA 70518

PHONE 337 837 3061 • FAX 337 837 4400

Jefferson County,
State of Texas

I, **Kristen Killen,** certify that: I am employed by Halliburton Energy Service and that I did on the day(s) of **July 15, 2024 to July 24, 2024** conduct or supervise the taking of Directional Surveys as follow:

- **204' to a depth of 8682' MWD surveys performed by Sperry Drilling MWD**
- **Final survey is projected to a total depth of 8752'**

I certify that the data is true, correct, complete and within the limitations of the tool as set forth by Halliburton Energy Services. I further certify that I am authorized and qualified to make this report, that this survey was conducted at the request of **EXXONMOBIL LOW C SOL ON STOR LLC** for the **BEAD FARM CO. 2** in **Jefferson County, TX,** and that I have reviewed this report and find that it conforms to the principles and procedures set forth by Halliburton Energy Service for quality well surveying.

Kristen Killen, Log Analyst

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON
4607 HWY 90 EAST • BROUSSARD, LA 70518
PHONE 337 837 3061 • FAX 337 837 4400

July 31, 2024

Railroad Commission of Texas
Oil and Gas Division
P.O. Box 12967
Capital Station
Austin, TX 78711

Re: EXXONMOBIL LOW C SOL ON STOR LLC
R.R.C. Operator No. 101256
BEAD FARM CO. 2
Permit No. 898449
Jefferson County, TX
API # 42-245-32911

Attention: Ms. Pam Johns

Enclosed, please find one copy of the survey performed on the above referenced well by Halliburton Energy Services, Inc. Operator #347-151.

Other information required by your office is as follows:

Name & Title of Surveyor	-	Kristen Killen, Log Analyst
Drainhole Number	-	Original
Surveyed Depths	-	204' – 8682' MWD Surveys performed by Sperry Drilling
Dates Performed	-	July 15, 2024 to July 24, 2024
Type of Survey	-	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the listed e-mail address.

Respectfully,



Kristen Killen
Log Analyst
Kristen.Killen@Halliburton.com
Halliburton / Sperry Drilling

Enclosures
RE: LA-MM 908567108

CONFIDENTIAL BUSINESS INFORMATION

ExxonMobil

Jefferson County, Tx_NAD83
Rose Prospect CCS
Bead Farm Co. #2
4224532911
002 ST00BP00

Design: 002 ST00BP00

Sperry Drilling Services

Geodetic Report

06 August, 2024

Well Coordinates: 13,937,806.68 N, 3,456,559.21 E (29° 59' 27.66" N, 094° 17' 52.93" W)
Ground Level: 25.90 usft

Local Coordinate Origin:	Centered on Well Bead Farm Co. #2
Viewing Datum:	(32.52') Nabors X-33 @ 58.42usft (Spud)
TVDs to System:	N
North Reference:	Grid
Unit System:	API US Survey Feet

Version: 5000.17 Build: 02

HALLIBURTON

Design Report for Bead Farm Co. #2 - 002 ST00BP00

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude (usft)	Geographic Coordinates Longitude (usft)	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	29° 59' 27.655 N	94° 17' 52.927 W	13,937,806.68	3,456,559.21
204.00	0.92	282.45	203.99	0.35	-1.60	29° 59' 27.659 N	94° 17' 52.945 W	13,937,807.03	3,456,557.61
317.00	0.69	283.37	316.98	0.71	-3.15	29° 59' 27.663 N	94° 17' 52.962 W	13,937,807.39	3,456,556.06
409.00	0.59	277.83	408.97	0.90	-4.16	29° 59' 27.666 N	94° 17' 52.974 W	13,937,807.58	3,456,555.05
503.00	0.55	276.15	502.97	1.01	-5.08	29° 59' 27.667 N	94° 17' 52.984 W	13,937,807.69	3,456,554.13
596.00	0.25	295.16	595.97	1.15	-5.71	29° 59' 27.669 N	94° 17' 52.991 W	13,937,807.83	3,456,553.50
689.00	0.13	286.13	688.97	1.26	-6.00	29° 59' 27.670 N	94° 17' 52.994 W	13,937,807.94	3,456,553.21
779.00	0.18	100.25	778.97	1.27	-5.95	29° 59' 27.670 N	94° 17' 52.994 W	13,937,807.95	3,456,553.26
878.00	0.22	94.50	877.97	1.22	-5.61	29° 59' 27.670 N	94° 17' 52.990 W	13,937,807.90	3,456,553.60
956.00	0.06	132.43	955.97	1.18	-5.43	29° 59' 27.669 N	94° 17' 52.988 W	13,937,807.86	3,456,553.78
1,053.00	0.18	44.89	1,052.97	1.26	-5.29	29° 59' 27.670 N	94° 17' 52.986 W	13,937,807.94	3,456,553.92
1,145.00	0.06	340.24	1,144.97	1.41	-5.20	29° 59' 27.671 N	94° 17' 52.985 W	13,937,808.09	3,456,554.01
1,239.00	0.40	289.30	1,238.96	1.56	-5.53	29° 59' 27.673 N	94° 17' 52.989 W	13,937,808.24	3,456,553.68
1,335.00	0.31	295.83	1,334.96	1.78	-6.08	29° 59' 27.675 N	94° 17' 52.995 W	13,937,808.46	3,456,553.13
1,430.00	0.45	241.44	1,429.96	1.72	-6.64	29° 59' 27.675 N	94° 17' 53.002 W	13,937,808.40	3,456,552.57
1,525.00	0.57	208.34	1,524.96	1.12	-7.19	29° 59' 27.669 N	94° 17' 53.008 W	13,937,807.80	3,456,552.02
1,621.00	0.97	195.75	1,620.95	-0.08	-7.64	29° 59' 27.657 N	94° 17' 53.014 W	13,937,806.60	3,456,551.57
1,718.00	0.92	199.79	1,717.94	-1.60	-8.12	29° 59' 27.643 N	94° 17' 53.020 W	13,937,805.08	3,456,551.09
1,906.00	0.93	203.82	1,905.91	-4.42	-9.25	29° 59' 27.615 N	94° 17' 53.034 W	13,937,802.26	3,456,549.96
1,995.00	0.81	210.03	1,994.90	-5.62	-9.86	29° 59' 27.604 N	94° 17' 53.041 W	13,937,801.06	3,456,549.35
2,092.00	0.53	241.70	2,091.89	-6.43	-10.59	29° 59' 27.596 N	94° 17' 53.050 W	13,937,800.25	3,456,548.62
2,186.00	0.42	264.00	2,185.89	-6.67	-11.32	29° 59' 27.594 N	94° 17' 53.059 W	13,937,800.01	3,456,547.89
2,218.00	0.38	217.95	2,217.89	-6.77	-11.50	29° 59' 27.593 N	94° 17' 53.061 W	13,937,799.91	3,456,547.71
2,276.00	0.42	192.90	2,275.89	-7.13	-11.67	29° 59' 27.589 N	94° 17' 53.063 W	13,937,799.55	3,456,547.54
2,372.00	0.45	186.31	2,371.89	-7.84	-11.79	29° 59' 27.582 N	94° 17' 53.064 W	13,937,798.84	3,456,547.42
2,465.00	0.53	177.70	2,464.88	-8.64	-11.81	29° 59' 27.574 N	94° 17' 53.065 W	13,937,798.04	3,456,547.40
2,560.00	0.72	219.69	2,559.88	-9.54	-12.17	29° 59' 27.566 N	94° 17' 53.070 W	13,937,797.14	3,456,547.04
2,656.00	0.75	210.71	2,655.87	-10.54	-12.88	29° 59' 27.556 N	94° 17' 53.078 W	13,937,796.14	3,456,546.33
2,751.00	0.59	212.16	2,750.86	-11.49	-13.46	29° 59' 27.547 N	94° 17' 53.085 W	13,937,795.19	3,456,545.75
2,843.00	0.50	209.35	2,842.86	-12.24	-13.91	29° 59' 27.540 N	94° 17' 53.091 W	13,937,794.44	3,456,545.30
2,936.00	0.55	200.99	2,935.86	-13.01	-14.27	29° 59' 27.532 N	94° 17' 53.095 W	13,937,793.67	3,456,544.94
3,030.00	0.43	201.88	3,029.85	-13.76	-14.56	29° 59' 27.525 N	94° 17' 53.099 W	13,937,792.92	3,456,544.65
3,128.00	0.45	214.48	3,127.85	-14.42	-14.91	29° 59' 27.519 N	94° 17' 53.103 W	13,937,792.26	3,456,544.30
3,222.00	0.45	234.79	3,221.85	-14.93	-15.42	29° 59' 27.514 N	94° 17' 53.109 W	13,937,791.75	3,456,543.79
3,316.00	0.33	225.02	3,315.84	-15.34	-15.92	29° 59' 27.510 N	94° 17' 53.115 W	13,937,791.34	3,456,543.29
3,412.00	0.31	224.75	3,411.84	-15.72	-16.30	29° 59' 27.506 N	94° 17' 53.119 W	13,937,790.96	3,456,542.91
3,505.00	0.25	207.09	3,504.84	-16.08	-16.57	29° 59' 27.503 N	94° 17' 53.122 W	13,937,790.60	3,456,542.64
3,560.05	0.27	213.40	3,559.90	-16.29	-16.69	29° 59' 27.501 N	94° 17' 53.124 W	13,937,790.39	3,456,542.52
3,600.00	0.28	217.48	3,599.84	-16.45	-16.80	29° 59' 27.499 N	94° 17' 53.125 W	13,937,790.23	3,456,542.41
3,694.00	0.33	206.67	3,693.84	-16.87	-17.06	29° 59' 27.495 N	94° 17' 53.128 W	13,937,789.81	3,456,542.15
3,789.00	0.35	223.05	3,788.84	-17.33	-17.38	29° 59' 27.491 N	94° 17' 53.132 W	13,937,789.35	3,456,541.83
3,884.00	0.22	220.41	3,883.84	-17.68	-17.70	29° 59' 27.487 N	94° 17' 53.136 W	13,937,789.00	3,456,541.51

Design Report for Bead Farm Co. #2 - 002 ST00BP00

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude (usft)	Geographic Coordinates Longitude (usft)	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
3,978.00	0.18	201.67	3,977.84	-17.95	-17.87	29° 59' 27.485 N	94° 17' 53.138 W	13,937,788.73	3,456,541.34
4,071.00	0.19	210.77	4,070.83	-18.22	-18.00	29° 59' 27.482 N	94° 17' 53.140 W	13,937,788.46	3,456,541.21
4,168.00	0.13	210.22	4,167.83	-18.45	-18.14	29° 59' 27.480 N	94° 17' 53.141 W	13,937,788.23	3,456,541.07
4,261.00	0.13	187.31	4,260.83	-18.65	-18.21	29° 59' 27.478 N	94° 17' 53.142 W	13,937,788.03	3,456,541.00
4,323.00	0.09	217.33	4,322.83	-18.76	-18.25	29° 59' 27.477 N	94° 17' 53.143 W	13,937,787.92	3,456,540.96
4,441.00	0.25	193.14	4,440.83	-19.08	-18.36	29° 59' 27.474 N	94° 17' 53.144 W	13,937,787.60	3,456,540.85
4,538.00	0.56	167.94	4,537.83	-19.75	-18.31	29° 59' 27.467 N	94° 17' 53.144 W	13,937,786.93	3,456,540.90
4,634.00	0.44	179.21	4,633.83	-20.58	-18.21	29° 59' 27.459 N	94° 17' 53.143 W	13,937,786.10	3,456,541.00
4,725.00	0.42	137.83	4,724.83	-21.18	-17.98	29° 59' 27.453 N	94° 17' 53.141 W	13,937,785.50	3,456,541.23
4,822.00	0.31	134.75	4,821.82	-21.62	-17.55	29° 59' 27.448 N	94° 17' 53.136 W	13,937,785.06	3,456,541.66
4,919.00	0.35	144.92	4,918.82	-22.05	-17.20	29° 59' 27.444 N	94° 17' 53.132 W	13,937,784.63	3,456,542.01
5,014.00	0.40	139.06	5,013.82	-22.54	-16.81	29° 59' 27.439 N	94° 17' 53.128 W	13,937,784.14	3,456,542.40
5,208.00	0.18	41.45	5,207.82	-22.82	-16.17	29° 59' 27.436 N	94° 17' 53.121 W	13,937,783.86	3,456,543.04
5,296.00	0.26	19.09	5,295.82	-22.53	-16.01	29° 59' 27.439 N	94° 17' 53.119 W	13,937,784.15	3,456,543.20
5,391.00	0.40	19.41	5,390.82	-22.01	-15.83	29° 59' 27.444 N	94° 17' 53.117 W	13,937,784.67	3,456,543.38
5,486.00	0.45	18.03	5,485.81	-21.35	-15.60	29° 59' 27.450 N	94° 17' 53.114 W	13,937,785.33	3,456,543.61
5,581.00	0.56	36.90	5,580.81	-20.62	-15.21	29° 59' 27.457 N	94° 17' 53.109 W	13,937,786.06	3,456,544.00
5,675.00	0.50	33.23	5,674.81	-19.91	-14.71	29° 59' 27.464 N	94° 17' 53.103 W	13,937,786.77	3,456,544.50
5,770.00	0.51	22.06	5,769.80	-19.17	-14.32	29° 59' 27.471 N	94° 17' 53.098 W	13,937,787.51	3,456,544.89
5,865.00	0.40	18.74	5,864.80	-18.47	-14.06	29° 59' 27.478 N	94° 17' 53.095 W	13,937,788.21	3,456,545.15
5,958.00	0.37	14.53	5,957.80	-17.87	-13.88	29° 59' 27.484 N	94° 17' 53.093 W	13,937,788.81	3,456,545.33
6,052.00	0.43	3.54	6,051.79	-17.22	-13.78	29° 59' 27.490 N	94° 17' 53.091 W	13,937,789.46	3,456,545.43
6,148.00	0.40	11.29	6,147.79	-16.53	-13.69	29° 59' 27.497 N	94° 17' 53.090 W	13,937,790.15	3,456,545.52
6,337.00	0.33	8.33	6,336.79	-15.35	-13.48	29° 59' 27.509 N	94° 17' 53.087 W	13,937,791.33	3,456,545.73
6,432.00	0.47	1.15	6,431.79	-14.69	-13.44	29° 59' 27.515 N	94° 17' 53.086 W	13,937,791.99	3,456,545.77
6,525.00	0.25	13.41	6,524.78	-14.11	-13.38	29° 59' 27.521 N	94° 17' 53.085 W	13,937,792.57	3,456,545.83
6,620.00	0.25	11.01	6,619.78	-13.70	-13.30	29° 59' 27.525 N	94° 17' 53.084 W	13,937,792.98	3,456,545.91
6,715.00	0.33	347.54	6,714.78	-13.23	-13.31	29° 59' 27.530 N	94° 17' 53.084 W	13,937,793.45	3,456,545.90
6,808.00	0.18	303.99	6,807.78	-12.89	-13.49	29° 59' 27.533 N	94° 17' 53.086 W	13,937,793.79	3,456,545.72
6,904.00	0.32	328.92	6,903.78	-12.58	-13.76	29° 59' 27.536 N	94° 17' 53.089 W	13,937,794.10	3,456,545.45
6,998.00	0.33	301.62	6,997.78	-12.21	-14.12	29° 59' 27.540 N	94° 17' 53.093 W	13,937,794.47	3,456,545.09
7,093.00	0.18	292.51	7,092.78	-12.01	-14.49	29° 59' 27.542 N	94° 17' 53.097 W	13,937,794.67	3,456,544.72
7,185.00	0.19	340.74	7,184.78	-11.81	-14.68	29° 59' 27.544 N	94° 17' 53.099 W	13,937,794.87	3,456,544.53
7,280.00	0.25	232.06	7,279.78	-11.79	-14.89	29° 59' 27.545 N	94° 17' 53.101 W	13,937,794.89	3,456,544.32
7,377.00	0.18	243.61	7,376.78	-11.99	-15.20	29° 59' 27.543 N	94° 17' 53.105 W	13,937,794.69	3,456,544.01
7,562.00	0.43	219.04	7,561.77	-12.65	-15.89	29° 59' 27.536 N	94° 17' 53.113 W	13,937,794.03	3,456,543.32
7,753.00	0.44	255.06	7,752.77	-13.40	-17.05	29° 59' 27.529 N	94° 17' 53.127 W	13,937,793.28	3,456,542.16
7,941.00	0.18	301.28	7,940.77	-13.43	-18.00	29° 59' 27.530 N	94° 17' 53.138 W	13,937,793.25	3,456,541.21
8,035.00	0.00	255.07	8,034.77	-13.36	-18.13	29° 59' 27.530 N	94° 17' 53.139 W	13,937,793.32	3,456,541.08
8,130.00	0.14	109.08	8,129.77	-13.39	-18.02	29° 59' 27.530 N	94° 17' 53.138 W	13,937,793.29	3,456,541.19
8,227.00	0.14	114.85	8,226.76	-13.48	-17.80	29° 59' 27.529 N	94° 17' 53.135 W	13,937,793.20	3,456,541.41
8,316.00	0.14	303.31	8,315.76	-13.47	-17.79	29° 59' 27.529 N	94° 17' 53.135 W	13,937,793.21	3,456,541.42

Design Report for Bead Farm Co. #2 - 002 ST00BP00

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude (usft)	Geographic Coordinates Longitude (usft)	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
8,411.00	0.18	307.83	8,410.76	-13.31	-18.01	29° 59' 27.531 N	94° 17' 53.138 W	13,937,793.37	3,456,541.20
8,506.00	0.32	289.23	8,505.76	-13.13	-18.38	29° 59' 27.533 N	94° 17' 53.142 W	13,937,793.55	3,456,540.83
8,598.00	0.25	303.28	8,597.76	-12.94	-18.79	29° 59' 27.535 N	94° 17' 53.146 W	13,937,793.74	3,456,540.42
8,682.00	0.43	313.57	8,681.76	-12.62	-19.17	29° 59' 27.538 N	94° 17' 53.150 W	13,937,794.06	3,456,540.04
8,752.00	0.43	313.57	8,751.76	-12.26	-19.55	29° 59' 27.542 N	94° 17' 53.155 W	13,937,794.42	3,456,539.66

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
8,752.00	8,751.76	-12.26	-19.55	Proj. to Bit

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	0.00	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
204.00	2,218.00	01 HAL MWD (MagVarMS) 17 1/2" Hole 204' - 2218'	3_MWD+HRGM+MS
2,276.00	8,682.00	02 HAL MWD (MagVarMS) 12 1/4" Hole 2276' - 8682'	3_MWD+HRGM+MS

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
152.50	152.50	20" Conductor Casing	20	20
2,244.00	2,243.89	13-3/8" Surface Casing	13-3/8	17-1/2
8,731.00	8,730.76	9-5/8" Production Casing	9-5/8	12-1/4

Design Report for Bead Farm Co. #2 - 002 ST00BP00

Design Targets

Shape	Target Name	TVD ()	Northing ()	Easting ()	+N/-S	+E/-W	Created	Updated

Directional Difficulty Index

Average Dogleg over Survey:	0.17 °/100usft	Maximum Dogleg over Survey:	0.98 °/100usft at 2,218.00 usft
Net Tortousity applicable to Plans:	0.17 °/100usft	Directional Difficulty Index:	2.930

Audit Info

North Reference Sheet for Rose Prospect CCS - Bead Farm Co. #2 - 002 ST00BP00

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to (32.52') Nabors X-33 @ 58.42usft (Spud). Northing and Easting are relative to Bead Farm Co. #2

Coordinate System is US State Plane 1983, Texas South Central Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is 99° 0' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:30° 17' 0.000 N°

False Easting: 1,968,500.00usft, False Northing: 13,123,333.33usft, Scale Reduction: 0.99992863

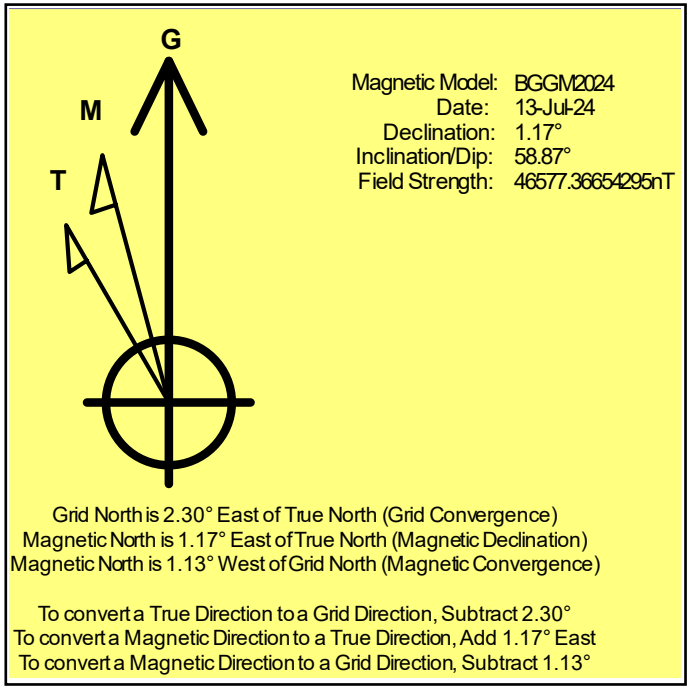
Grid Coordinates of Well: 13,937,806.68 usft N, 3,456,559.21 usft E

Geographical Coordinates of Well: 29° 59' 27.66" N, 094° 17' 52.93" W

Grid Convergence at Surface is: 2.30°

Based upon Minimum Curvature type calculations, at a Measured Depth of 8,752.00usft

the Bottom Hole Displacement is 23.07usft in the Direction of 237.91° (Grid).
Magnetic Convergence at surface is: 1.13° (13 July 2024, , BGGM2024)



CONFIDENTIAL BUSINESS INFORMATION

Railroad Commission of Texas

PERMIT TO DRILL, RE-COMPLETE, OR RE-ENTER ON REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

CONDITIONS AND INSTRUCTIONS

Permit Invalidation. It is the operator's responsibility to make sure that the permitted location complies with Commission density and spacing rules in effect on the spud date. The permit becomes invalid automatically if, because of a field rule change or the drilling of another well, the stated location is not in compliance with Commission field rules on the spud date. If this occurs, application for an exception to Statewide Rules 37 and 38 must be made and a special permit granted prior to spudding. Failure to do so may result in an allowable not being assigned and/or enforcement procedures being initiated.

Notice Requirements. Per H.B 630, signed May 8, 2007, the operator is required to provide notice to the surface owner no later than the 15th business day after the Commission issues a permit to drill. Please refer to subchapter Q Sec. 91.751-91.755 of the Texas Natural Resources Code for applicability.

Permit expiration. This permit expires two (2) years from the date of issuance shown on the original permit. The permit period will not be extended.

Drilling Permit Number. The drilling permit number shown on the permit MUST be given as a reference with any notification to the district (see below), correspondence, or application concerning this permit.

Rule 37 Exception Permits. This Statewide Rule 37 exception permit is granted under either provision Rule 37 (h)(2)(A) or 37(h)(2)(B). Be advised that a permit granted under Rule 37(h)(2)(A), notice of application, is subject to the General Rules of Practice and Procedures and if a protest is received under Section 1.3, "Filing of Documents," and/or Section 1.4, "Computation of Time," the permit may be deemed invalid.

Before Drilling

Fresh Water Sand Protection. The operator must set and cement sufficient surface casing to protect all usable-quality water, as defined by the Railroad Commission of Texas (RRC) Groundwater Advisory Unit (GWAU). Before drilling a well, the operator must obtain a letter from the Railroad Commission of Texas stating the depth to which water needs protection, Write: Railroad Commission of Texas, Groundwater Advisory Unit (GWAU), P.O. Box 12967, Austin, TX 78711-3087. File a copy of the letter with the appropriate district office.

Accessing the Well Site. If an OPERATOR, well equipment TRANSPORTER or WELL service provider must access the well site from a roadway on the state highway system (Interstate, U.S. Highway, State Highway, Farm-to-Market Road, Ranch-to-Market Road, etc.), an access permit is required from TxDOT. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

Water Transport to Well Site. If an operator intends to transport water to the well site through a temporary pipeline laid above ground on the state's right-of-way, an additional TxDOT permit is required. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

*NOTIFICATION

The operator is **REQUIRED** to notify the district office when setting surface casing, intermediate casing, and production casing, or when plugging a dry hole. The district office **MUST** also be notified if the operator intends to re-enter a plugged well or re-complete a well into a different regulatory field. Time requirements are given below. The drilling permit number **MUST** be given with such notifications.

During Drilling

Permit at Drilling Site. A copy of the Form W-1 Drilling Permit Application, the location plat, a copy of Statewide Rule 13 alternate surface casing setting depth approval from the district office, if applicable, and this drilling permit must be kept at the permitted well site throughout drilling operations.

***Notification of Setting Casing.** The operator MUST call in notification to the appropriate district office (phone number shown the on permit) a minimum of eight (8) hours prior to the setting of surface casing, intermediate casing, AND production casing. The individual giving notification MUST be able to advise the district office of the drilling permit number.

***Notification of Re-completion/Re-entry.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of eight (8) hours prior to the initiation of drilling or re-completion operations. The individual giving notification MUST be able to advise the district office of the drilling permit number.

Completion and Plugging Reports

Hydraulic Fracture Stimulation using Diesel Fuel: Most operators in Texas do not use diesel fuel in hydraulic fracturing fluids. Section 322 of the Energy Policy Act of 2005 amended the Underground Injection Control (UIC) portion of the federal Safe Drinking Water Act (42 USC 300h(d)) to define "underground Injection" to *EXCLUDE* " ...the underground injection of fluids or propping agents (*other than diesel fuels*) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities." (italic and underlining added.) Therefore, hydraulic fracturing may be subject to regulation under the federal UIC regulations if diesel fuel is injected or used as a propping agent. EPA defined "diesel fuel" using the following five (5) Chemical Abstract Service numbers: 68334-30-5 Primary Name: Fuels, diesel; 68476-34-6 Primary Name: Fuels, diesel, No. 2; 68476-30-2 Primary Name: Fuel oil No. 2; 68476-31-3 Primary Name: Fuel oil, No. 4; and 8008-20-6 Primary Name: Kerosene. As a result, an injection well permit would be required before performing hydraulic fracture stimulation using diesel fuel as defined by EPA on any well in Texas. Hydraulic fracture stimulation using diesel fuel as defined by EPA on a well in Texas without an injection well permit could result in enforcement action.

Producing Well. Statewide Rule 16 states that the operator of a well shall file with the Commission the appropriate completion report within ninety (90) days after completion of the well or within one hundred and fifty (150) days after the date on which the drilling operation is completed, whichever is earlier. Completion of the well in a field authorized by this permit voids the permit for all other fields included in the permit unless the operator indicates on the initial completion report that the well is to be a dual or multiple completion and promptly submits an application for multiple completion. All zones are required to be completed before the expiration date on the existing permit. Statewide Rule 40(d) requires that upon successful completion of a well in the same reservoir as any other well previously assigned the same acreage, proration plats and P-15s or P-16s (if required) or a lease plat and P-16 must be submitted with no double assignment of acreage unless authorized by rule.

Dry or Noncommercial Hole. Statewide Rule 14(b)(2) prohibits suspension of operations on each dry or non-commercial well without plugging unless the hole is cased and the casing is cemented in compliance with Commission rules. If properly cased, Statewide Rule 14(b)(2) requires that plugging operations must begin within a period of one (1) year after drilling or operations have ceased. Plugging operations must proceed with due diligence until completed. An extension to the one-year plugging requirement may be granted under the provisions stated in Statewide Rule 14(b)(2).

Intention to Plug. The operator must file a Form W-3A (Notice of Intention to Plug and Abandon) with the district office at least five (5) days prior to beginning plugging operations. If, however, a drilling rig is already at work on location and ready to begin plugging operations, the district director or the director's delegate may waive this requirement upon request, and verbally approve the proposed plugging procedures.

***Notification of Plugging a Dry Hole.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of four (4) hours prior to beginning plugging operations. The individual giving the notification MUST be able to advise the district office of the drilling permit number and all water protection depths for that location as stated in the Groundwater Advisory Unit letter.

DIRECT INQUIRIES TO: DRILLING PERMIT SECTION, OIL AND GAS DIVISION

PHONE
(512) 463-6751

MAIL:
PO Box 12967
Austin, Texas, 78711-2967

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER	DATE PERMIT ISSUED OR AMENDED	DISTRICT
898449	Apr 04, 2024	* 03
API NUMBER	**FORM W-1 RECEIVED**	**COUNTY**
42-245-32911	Mar 27, 2024	JEFFERSON
TYPE OF OPERATION	**WELLBORE PROFILE(S)**	**ACRES**
NEW DRILL	Vertical	470

OPERATOR 101256

EXXONMOBIL LOW C SOL ON STOR LLC

ATTN EDWARD E GRAHAM
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389

NOTICE

This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored.

District Office Telephone No:
(713) 869-5001

LEASE NAME	WELL NUMBER
BEAD FARM CO.	2
LOCATION	**TOTAL DEPTH**
4.5 miles SE direction from CHINA	10000

Section, Block and/or Survey

SECTION 41 BLOCK ABSTRACT 266

SURVEY T&NO RR CO

DISTANCE TO SURVEY LINES	DISTANCE TO NEAREST LEASE LINE
1535 ft. WEST 2409 ft. SOUTH	ft.
DISTANCE TO LEASE LINES	**DISTANCE TO NEAREST WELL ON LEASE**
692 ft. WEST 2409 ft. SOUTH	See FIELD(s) Below

FIELD(s) and LIMITATIONS:

* SEE FIELD DISTRICT FOR REPORTING PURPOSES *

FIELD NAME / LEASE NAME	ACRES / NEAREST LEASE	DEPTH	WELL # / NEAREST WE	DIST
WILDCAT	470.00	8,800	2	03
BEAD FARM CO.			0	

RESTRICTIONS: For exploratory test only

THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS

This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.

This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

SWR #13 Formation Data

JEFFERSON (245) County

Formation	Remarks	Geological Order	Effective Date
LAFAYETTE	disposal	1	12/17/2013
CAPROCK	disposal	2	12/17/2013
SPINDLETOP SALT DOME	disposal	3	12/17/2013
FANNETT SALT DOME	disposal	4	12/17/2013
BIG HILL SALT DOME	disposal	5	12/17/2013
PLEISTOCENE-LISSIE	disposal	6	12/17/2013
MIOCENE	disposal	7	12/17/2013
FRIO	disposal	8	12/17/2013
MARINULINA	disposal	9	12/17/2013
HETEROSTEGINA	disposal	10	12/17/2013

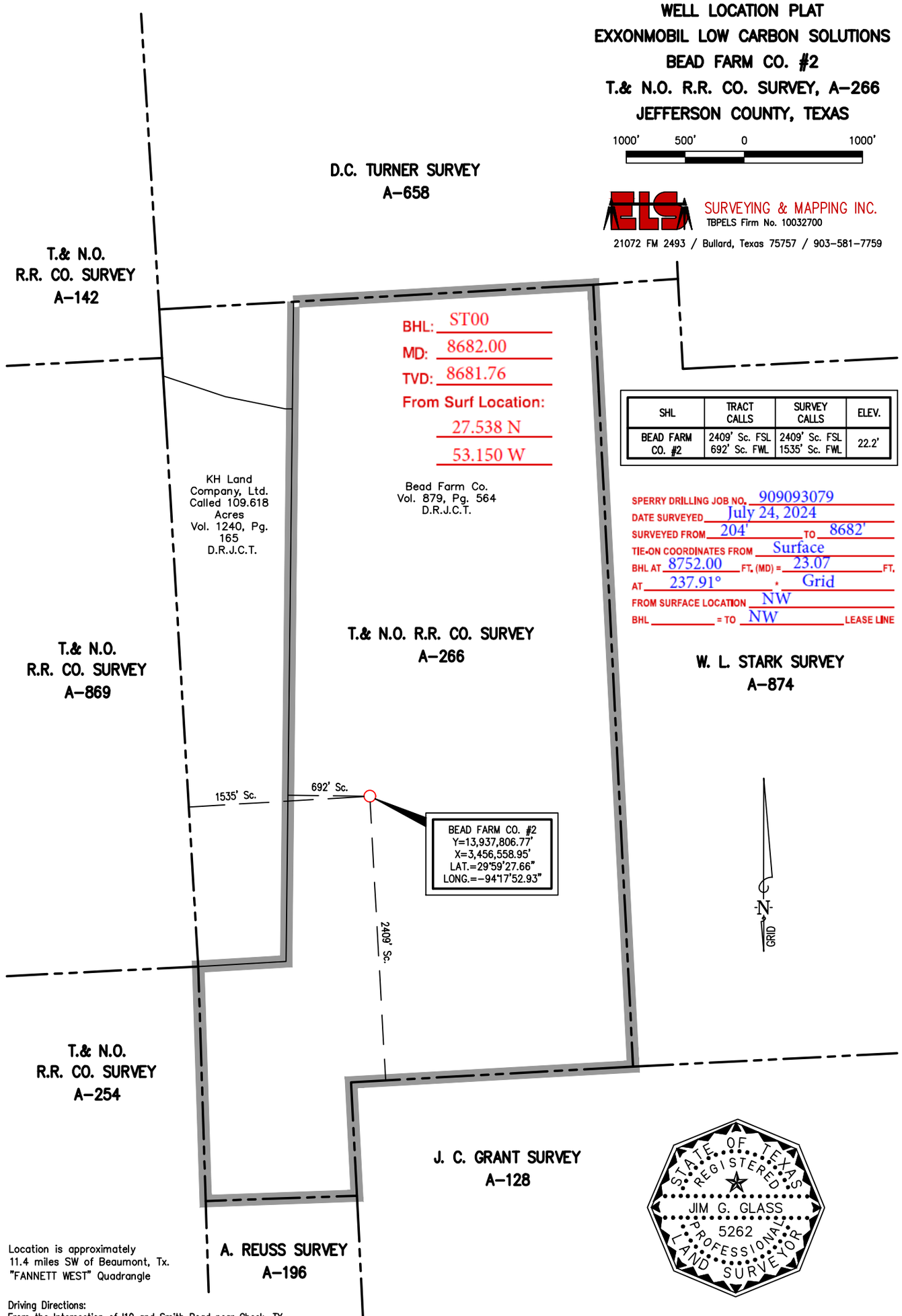
The above list may not be all inclusive, and may also include formations that do not intersect all wellbores. The listing order of the Formation information reflects the general stratigraphic order and relative geologic age. This is a dynamic list subject to updates and revisions. It is the operator's responsibility to make sure that at the time of spudding the well the most current list is being referenced. Refer to the RRC website at the following address for the most recent information.
http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info

CONFIDENTIAL BUSINESS INFORMATION

WELL LOCATION PLAT
EXXONMOBIL LOW CARBON SOLUTIONS
BEAD FARM CO. #2
T.& N.O. R.R. CO. SURVEY, A-266
JEFFERSON COUNTY, TEXAS

1000' 500' 0 1000'

SURVEYING & MAPPING INC.
TBPELS Firm No. 10032700
21072 FM 2493 / Bullard, Texas 75757 / 903-581-7759



SHL	TRACT CALLS	SURVEY CALLS	ELEV.
BEAD FARM CO. #2	2409' Sc. FSL 692' Sc. FWL	2409' Sc. FSL 1535' Sc. FWL	22.2'

SPERRY DRILLING JOB NO. 909093079
DATE SURVEYED July 24, 2024
SURVEYED FROM 204' TO 8682'
TIE-ON COORDINATES FROM Surface
BHL AT 8752.00 FT. (MD) = 23.07 FT.
AT 237.91° * Grid
FROM SURFACE LOCATION NW
BHL ____ = TO NW LEASE LINE

Location is approximately
11.4 miles SW of Beaumont, Tx.
"FANNETT WEST" Quadrangle

Driving Directions:
From the Intersection of I10 and Smith Road near Cheek, TX, go Northwest on Smith Road, .8 miles turn left (West) Kidd Road. Go 1.6 miles turn right (North) on Boyt Road. Go 1.1 miles stay straight (West) on Lawhon Rd. Go 2.7 miles turn left (South) on Lease Road. Go 0.68 miles. Drive on location.

DATE SURVEYED: 8/23/2023-8/28/2023

Location is staked from tract lines as evidenced by occupation, information obtained from the Tx. R.R.C and provided deed records. Distances shown are not intended to be definitive in establishing actual title boundaries. The deed data and tract acreages shown hereon were furnished by others. This is not a title survey. Vesting documents may not have been provided. Bearings and distances are based on the Texas State Plane Coordinate System N.A.D. 83 (2011) (South Central Zone) derived from GPS Observations.

LEGEND
= TRACT LINE
= SURVEY LINE
= PROPOSED WELL

STATE OF TEXAS
REGISTERED
JIM G. GLASS
5262
PROFESSIONAL
LAND SURVEYOR

FOR THE EXCLUSIVE USE OF
EXXONMOBIL LOW CARBON SOLUTIONS

STATE OF TEXAS - - - COUNTY OF SMITH
I, Jim G. Glass, Registered Professional Land Surveyor, do hereby certify the above plat to be true and correct to the best of my knowledge.
Date: April 2, 2024 Bullard, Texas
E.L.S. Surveying & Mapping, Inc.

Registered Professional Land Surveyor No. 5262

Drafter: ECJ FB 2744/88-97 Job No. 430923 Map No. J-0923-LOC-INJ2B

CONFIDENTIAL BUSINESS INFORMATION

CHRISTI CRADDICK, CHAIRMAN
WAYNE CHRISTIAN, COMMISSIONER
JIM WRIGHT, COMMISSIONER

DANNY SORRELLS
DIRECTOR, OIL AND GAS DIVISION
PETER FISHER, P.G.
DISTRICT DIRECTOR

RAILROAD COMMISSION OF TEXAS

OIL AND GAS DIVISION

OPERATOR Name:	EXXONMOBIL LOW C SOL ON	**RE:**	**Lease:**	Bead Farm Co.
Address1:	ATTN EDWARD E GRAHAM W1.2B.02			
Address2:	22777 SPRINGWOODS VILLAGE PKWY	**Well No:**	2	
City:	SPRING	**Sec:**	41	**Block:**
State:	TX	**County:**	JEFFERSON	
		Survey Name:	T&NO RR CO	

SWR13EX Application Number: 130361 **Drilling Permit No:**

SWR 13 CASING EXCEPTION APPLICATION/ALTERNATIVE REQUEST APPROVED

The Proposed Casing and Cementing Program submitted for **LEASE** Bead Farm Co. ;
WELL 2 has been approved by the Railroad Commission of Texas District Office.

a. A copy of this approved letter must be kept on location during all phases of drilling and/or plugging operations. Once approved, changes CANNOT be made to the Proposed Casing Program on the original application without additional approval from the Railroad Commission of Texas District Office.

b. Any substantive modifications to the cement program require prior approval from the Railroad Commission of Texas District Office, and may require re-submission of the SWR 13 (Statewide Rule 13) Alternate Surface Casing Application. Contact the Railroad Commission of Texas District Office for more information.

c. The tail slurry must be sufficient to fill the Zone of Critical Cement as described in Statewide Rule 13(b)(1)(H)(i). In addition, all cement slurries must be mixed on location as described in Application for Alternate Surface Casing Program.

d. The casing and cement program shall adhere to the following specifications:

Set 2265 feet of surface casing and circulate cement from the shoe to the ground surface.

DP 909449 - Exxonmobil, Bead Farm Co. Lease Well 2 (245 32911)

IF CEMENT IS NOT CIRCULATED TO THE GROUND SURFACE AS REQUIRED BY THIS EXCEPTION, YOU MUST CONTACT THE RAILROAD COMMISSION OF TEXAS DISTRICT OFFICE IMMEDIATELY AND FOLLOW THE PROCEDURES SET OUT IN RULE 13(b)(1)(H)(iii) OR AS REQUIRED BY THE RAILROAD COMMISSION OF TEXAS DISTRICT OFFICE.

CONFIDENTIAL BUSINESS INFORMATION

You must comply with all other provisions of SWR 13 (Statewide Rule 13) and a representative of the cementing company who performs the cementing job for the protection of usable quality water strata must sign the Form W-15 attesting to the information regarding cementing operations performed; including circulation of cement. (Note: If surface casing is set below the approved depth, this can result in denial of future Statewide Rule 13(b)(1)(H)(i) requests.) A condition of the approved drilling permit requires notification to the Railroad Commission of Texas District Office eight (8) hours prior to the time casing is to be set/cemented in the well. If your exception request was submitted after the subject well has been drilled and completed, the operator may be referred for enforcement action.

This authorization shall expire within five (5) years from the date the Groundwater Protection Determination was issued, or at the expiration of the drilling permit (if the well is not spudded prior to expiration) for the referenced well, whichever occurs first. Furthermore, this authorization supersedes any prior authorizations issued for the referenced well.

This exception is based on information provided when the application was submitted 05/20/2024 .
If any information has changed, you must contact the appropriate Railroad Commission of Texas District Office, and submit a new application if applicable. If you have questions, please contact the appropriate Oil and Gas District office.

RRC APPROVAL BY: AUDREY KUKLENZ DATE: 05/20/2024

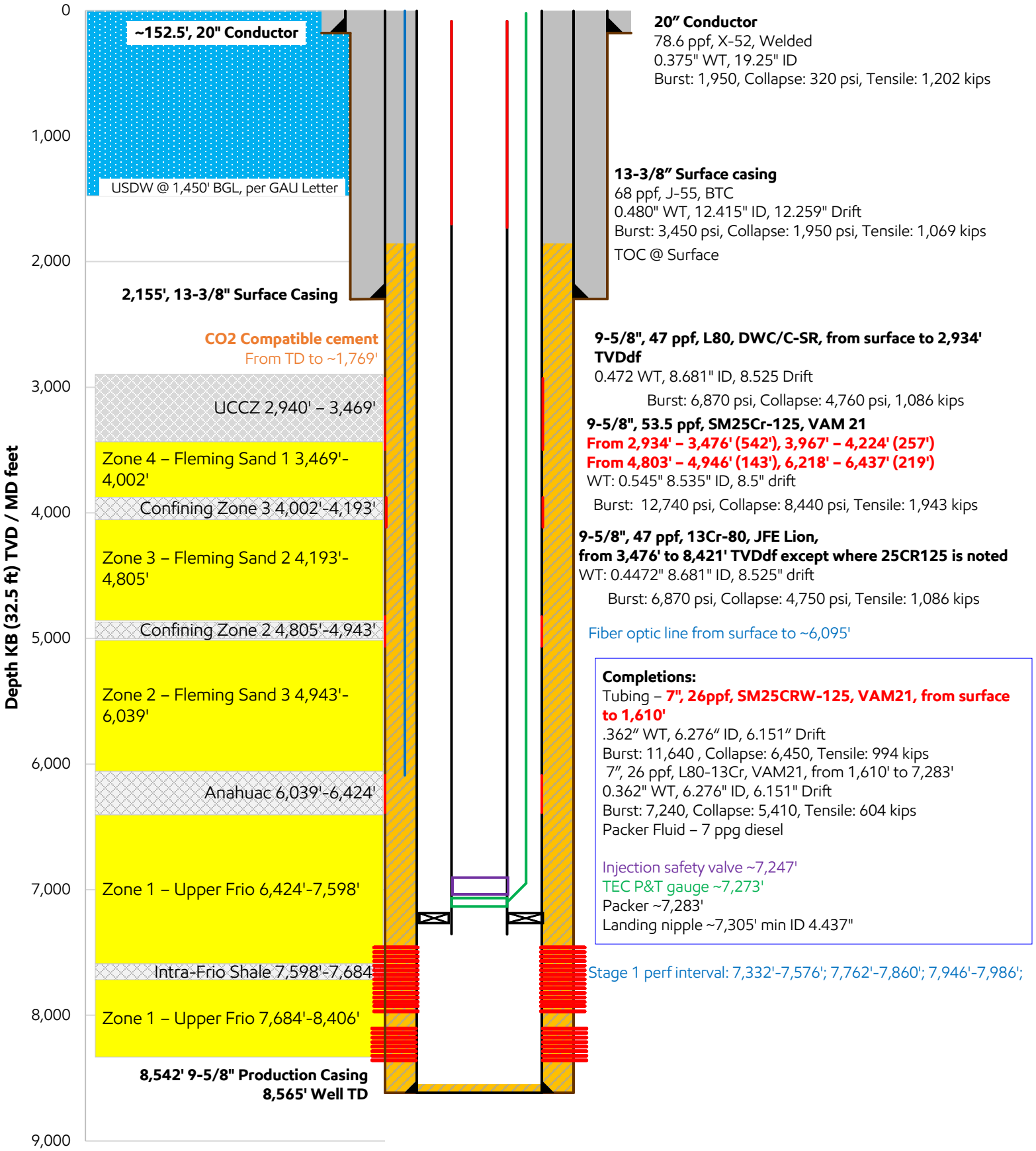
PETER FISHER, P.G.

DISTRICT DIRECTOR

CONFIDENTIAL BUSINESS INFORMATION

Rose CCS Project Bead Farm 3

Completions Wellbore Schematic



20" Conductor
78.6 ppf, X-52, Welded
0.375" WT, 19.25" ID
Burst: 1,950, Collapse: 320 psi, Tensile: 1,202 kips

13-3/8" Surface casing
68 ppf, J-55, BTC
0.480" WT, 12.415" ID, 12.259" Drift
Burst: 3,450 psi, Collapse: 1,950 psi, Tensile: 1,069 kips
TOC @ Surface

9-5/8", 47 ppf, L80, DWC/C-SR, from surface to 2,934' TVDdf
0.472 WT, 8.681" ID, 8.525 Drift
Burst: 6,870 psi, Collapse: 4,760 psi, 1,086 kips

9-5/8", 53.5 ppf, SM25Cr-125, VAM 21
From 2,934' – 3,476' (542'), 3,967' – 4,224' (257')
From 4,803' – 4,946' (143'), 6,218' – 6,437' (219')
WT: 0.545" 8.535" ID, 8.5" drift
Burst: 12,740 psi, Collapse: 8,440 psi, Tensile: 1,943 kips

9-5/8", 47 ppf, 13Cr-80, JFE Lion,
from 3,476' to 8,421' TVDdf except where 25CR125 is noted
WT: 0.4472" 8.681" ID, 8.525" drift
Burst: 6,870 psi, Collapse: 4,750 psi, Tensile: 1,086 kips

Fiber optic line from surface to ~6,095'

Completions:
Tubing – **7", 26ppf, SM25CRW-125, VAM21, from surface to 1,610'**
.362" WT, 6.276" ID, 6.151" Drift
Burst: 11,640 , Collapse: 6,450, Tensile: 994 kips
7", 26 ppf, L80-13Cr, VAM21, from 1,610' to 7,283'
0.362" WT, 6.276" ID, 6.151" Drift
Burst: 7,240, Collapse: 5,410, Tensile: 604 kips
Packer Fluid – 7 ppg diesel

Injection safety valve ~7,247'
TEC P&T gauge ~7,273'
Packer ~7,283'
Landing nipple ~7,305' min ID 4.437"

Stage 1 perf interval: 7,332'-7,576'; 7,762'-7,860'; 7,946'-7,986';

CONFIDENTIAL BUSINESS INFORMATION

API No. 42-245-32912
Drilling Permit # 898450
SWR Exception

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

APPLICATION FOR PERMIT TO DRILL, RECOMPLETE, OR RE-ENTER

This facsimile W-1 was generated electronically from data submitted to the RRC.
A certification of the automated data is available in the RRC's Austin office.

FORM W-1 07/2004

Permit Status: Approved

1. RRC Operator No.: 101256

2. Operator's Name (as shown on form P-5, Organization Report): EXXONMOBIL LOW C SOL ON STOR LLC

3. Operator Address (include street, city, state, zip):
ATTN EDWARD E GRAHAM
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389-0000

4. Lease Name: BEAD FARM

5. Well No.: 3

GENERAL INFORMATION

6. Purpose of filing (mark ALL appropriate boxes): [X] New Drill [ ] Recompletion [ ] Reclass [ ] Field Transfer [ ] Re-Enter [ ] Amended [ ] Amended as Drilled (BHL) (Also File Form W-1D)

7. Wellbore Profile (mark ALL appropriate boxes): [X] Vertical [ ] Horizontal (Also File Form W-1H) [ ] Directional (Also File Form W-1D) [ ] Sidetrack

8. Total Depth: 10000

9. Do you have the right to develop the minerals under any right-of-way ? [X] Yes [ ] No

10. Is this well subject to Statewide Rule 36 (hydrogen sulfide area)? [ ] Yes [X] No

SURFACE LOCATION AND ACREAGE INFORMATION

11. RRC District No.: 03

12. County: JEFFERSON

13. Surface Location [X] Land [ ] Bay/Estuary [ ] Inland Waterway [ ] Offshore

14. This well is to be located 3.35 miles in a SE direction from China which is the nearest town in the county of the well site.

15. Section: 8

16. Block:

17. Survey: HT&B RR CO/TURNER, D C

18. Abstract No.: A-658

19. Distance to nearest lease line: ft.

20. Number of contiguous acres in lease, pooled unit, or unitized tract: 650

21. Lease Perpendiculars: 1742 ft from the WEST line and 2937 ft from the NORTH line.

22. Survey Perpendiculars: 1742 ft from the WEST line and 2937 ft from the NORTH line.

23. Is this a pooled unit? [ ] Yes [X] No

24. Unitization Docket No:

25. Are you applying for Substandard Acreage Field? [ ] Yes (attach Form W-1A) [X] No

FIELD INFORMATION List all fields of anticipated completion including Wildcat. List one zone per line.

26. RRC District No.	27. Field No.	28. Field Name (exactly as shown in RRC records)	29. Well Type	30. Completion Depth	31. Distance to Nearest Well in this Reservoir	32. Number of Wells on this lease in this Reservoir
03	00006001	WILDCAT	Exploratory Test Well	8600	0.00	1

BOTTOMHOLE LOCATION INFORMATION is required for DIRECTIONAL, HORIZONTAL, AND AMENDED AS DRILLED PERMIT APPLICATIONS

Remarks
See W1 Comments attached

Certificate:
I certify that information stated in this application is true and complete, to the best of my knowledge.

Josh Calkin — Name of filer
Mar 27, 2024 — Date submitted

(281)702-5537 — Phone
Josh.Calkin@erm.com — E-mail Address (OPTIONAL)

RRC Use Only Data Validation Time Stamp: Mar 26, 2025 1:56 PM(Current Version)

CONFIDENTIAL BUSINESS INFORMATION

Permit Status: Approved

The RRC has not approved this application. Duplication or distribution of information is at the user's own risk.

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

APPLICATION FOR PERMIT TO DRILL, RECOMPLETE, OR RE-ENTER

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W-1 Comments

Permit # 898450

Approved Date: Apr 17, 2024

[RRC STAFF Mar 28, 2024 4:19 PM]: There have been problems identified with this permit (see problem letter attachment). Notification sent.; [RRC STAFF Apr 4, 2024 3:22 PM]: Problems identified with this permit are resolved.; [RRC STAFF Apr 4, 2024 3:23 PM]: Amended plat uploaded.; [RRC STAFF Apr 4, 2024 5:01 PM]: There have been problems identified with this permit (see problem letter attachment). Notification sent.; [RRC STAFF Apr 5, 2024 11:57 AM]: There have been problems identified with this permit (see problem letter attachment). Notification sent.; [RRC STAFF Apr 17, 2024 5:41 PM]: Problems identified with this permit are resolved.; [RRC STAFF Apr 17, 2024 5:41 PM]: Josh Calkin provided a revised plat on which the lease name has been updated to match the W-1.

CONFIDENTIAL BUSINESS INFORMATION

Railroad Commission of Texas

PERMIT TO DRILL, RE-COMPLETE, OR RE-ENTER ON REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

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Fresh Water Sand Protection. The operator must set and cement sufficient surface casing to protect all usable-quality water, as defined by the Railroad Commission of Texas (RRC) Groundwater Advisory Unit (GWAU). Before drilling a well, the operator must obtain a letter from the Railroad Commission of Texas stating the depth to which water needs protection, Write: Railroad Commission of Texas, Groundwater Advisory Unit (GWAU), P.O. Box 12967, Austin, TX 78711-3087. File a copy of the letter with the appropriate district office.

Accessing the Well Site. If an OPERATOR, well equipment TRANSPORTER or WELL service provider must access the well site from a roadway on the state highway system (Interstate, U.S. Highway, State Highway, Farm-to-Market Road, Ranch-to-Market Road, etc.), an access permit is required from TxDOT. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

Water Transport to Well Site. If an operator intends to transport water to the well site through a temporary pipeline laid above ground on the state's right-of-way, an additional TxDOT permit is required. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

*NOTIFICATION

The operator is **REQUIRED** to notify the district office when setting surface casing, intermediate casing, and production casing, or when plugging a dry hole. The district office **MUST** also be notified if the operator intends to re-enter a plugged well or re-complete a well into a different regulatory field. Time requirements are given below. The drilling permit number **MUST** be given with such notifications.

During Drilling

Permit at Drilling Site. A copy of the Form W-1 Drilling Permit Application, the location plat, a copy of Statewide Rule 13 alternate surface casing setting depth approval from the district office, if applicable, and this drilling permit must be kept at the permitted well site throughout drilling operations.

***Notification of Setting Casing.** The operator MUST call in notification to the appropriate district office (phone number shown the on permit) a minimum of eight (8) hours prior to the setting of surface casing, intermediate casing, AND production casing. The individual giving notification MUST be able to advise the district office of the drilling permit number.

***Notification of Re-completion/Re-entry.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of eight (8) hours prior to the initiation of drilling or re-completion operations. The individual giving notification MUST be able to advise the district office of the drilling permit number.

Completion and Plugging Reports

Hydraulic Fracture Stimulation using Diesel Fuel: Most operators in Texas do not use diesel fuel in hydraulic fracturing fluids. Section 322 of the Energy Policy Act of 2005 amended the Underground Injection Control (UIC) portion of the federal Safe Drinking Water Act (42 USC 300h(d)) to define "underground Injection" to *EXCLUDE* " ...the underground injection of fluids or propping agents (*other than diesel fuels*) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities." (italic and underlining added.) Therefore, hydraulic fracturing may be subject to regulation under the federal UIC regulations if diesel fuel is injected or used as a propping agent. EPA defined "diesel fuel" using the following five (5) Chemical Abstract Service numbers: 68334-30-5 Primary Name: Fuels, diesel; 68476-34-6 Primary Name: Fuels, diesel, No. 2; 68476-30-2 Primary Name: Fuel oil No. 2; 68476-31-3 Primary Name: Fuel oil, No. 4; and 8008-20-6 Primary Name: Kerosene. As a result, an injection well permit would be required before performing hydraulic fracture stimulation using diesel fuel as defined by EPA on any well in Texas. Hydraulic fracture stimulation using diesel fuel as defined by EPA on a well in Texas without an injection well permit could result in enforcement action.

Producing Well. Statewide Rule 16 states that the operator of a well shall file with the Commission the appropriate completion report within ninety (90) days after completion of the well or within one hundred and fifty (150) days after the date on which the drilling operation is completed, whichever is earlier. Completion of the well in a field authorized by this permit voids the permit for all other fields included in the permit unless the operator indicates on the initial completion report that the well is to be a dual or multiple completion and promptly submits an application for multiple completion. All zones are required to be completed before the expiration date on the existing permit. Statewide Rule 40(d) requires that upon successful completion of a well in the same reservoir as any other well previously assigned the same acreage, proration plats and P-15s or P-16s (if required) or a lease plat and P-16 must be submitted with no double assignment of acreage unless authorized by rule.

Dry or Noncommercial Hole. Statewide Rule 14(b)(2) prohibits suspension of operations on each dry or non-commercial well without plugging unless the hole is cased and the casing is cemented in compliance with Commission rules. If properly cased, Statewide Rule 14(b)(2) requires that plugging operations must begin within a period of one (1) year after drilling or operations have ceased. Plugging operations must proceed with due diligence until completed. An extension to the one-year plugging requirement may be granted under the provisions stated in Statewide Rule 14(b)(2).

Intention to Plug. The operator must file a Form W-3A (Notice of Intention to Plug and Abandon) with the district office at least five (5) days prior to beginning plugging operations. If, however, a drilling rig is already at work on location and ready to begin plugging operations, the district director or the director's delegate may waive this requirement upon request, and verbally approve the proposed plugging procedures.

***Notification of Plugging a Dry Hole.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of four (4) hours prior to beginning plugging operations. The individual giving the notification MUST be able to advise the district office of the drilling permit number and all water protection depths for that location as stated in the Groundwater Advisory Unit letter.

DIRECT INQUIRIES TO: DRILLING PERMIT SECTION, OIL AND GAS DIVISION

PHONE
(512) 463-6751

MAIL:
PO Box 12967
Austin, Texas, 78711-2967

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER	DATE PERMIT ISSUED OR AMENDED	DISTRICT
898450	Apr 17, 2024	* 03
API NUMBER	**FORM W-1 RECEIVED**	**COUNTY**
42-245-32912	Mar 27, 2024	JEFFERSON
TYPE OF OPERATION	**WELLBORE PROFILE(S)**	**ACRES**
NEW DRILL	Vertical	650

OPERATOR 101256

EXXONMOBIL LOW C SOL ON STOR LLC

ATTN EDWARD E GRAHAM
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389-0000

NOTICE

This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored.

District Office Telephone No:
(713) 869-5001

LEASE NAME	WELL NUMBER
BEAD FARM	3
LOCATION	**TOTAL DEPTH**
3.35 miles SE direction from CHINA	10000

Section, Block and/or Survey

SECTION 8 BLOCK ABSTRACT 658

SURVEY HT&B RR CO/TURNER, D C

DISTANCE TO SURVEY LINES	DISTANCE TO NEAREST LEASE LINE
1742 ft. WEST 2937 ft. NORTH	ft.
DISTANCE TO LEASE LINES	**DISTANCE TO NEAREST WELL ON LEASE**
1742 ft. WEST 2937 ft. NORTH	See FIELD(s) Below

FIELD(s) and LIMITATIONS:

* SEE FIELD DISTRICT FOR REPORTING PURPOSES *

FIELD NAME / LEASE NAME	ACRES / NEAREST LEASE	DEPTH	WELL # / NEAREST WE	DIST
WILDCAT	650.00	8,600	3	03
BEAD FARM			0	

RESTRICTIONS: For exploratory test only

THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS

This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.

This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

SWR #13 Formation Data

JEFFERSON (245) County

Formation	Remarks	Geological Order	Effective Date
LAFAYETTE	disposal	1	12/17/2013
CAPROCK	disposal	2	12/17/2013
SPINDLETOP SALT DOME	disposal	3	12/17/2013
FANNETT SALT DOME	disposal	4	12/17/2013
BIG HILL SALT DOME	disposal	5	12/17/2013
PLEISTOCENE-LISSIE	disposal	6	12/17/2013
MIOCENE	disposal	7	12/17/2013
FRIO	disposal	8	12/17/2013
MARINULINA	disposal	9	12/17/2013
HETEROSTEGINA	disposal	10	12/17/2013

The above list may not be all inclusive, and may also include formations that do not intersect all wellbores. The listing order of the Formation information reflects the general stratigraphic order and relative geologic age. This is a dynamic list subject to updates and revisions. It is the operator's responsibility to make sure that at the time of spudding the well the most current list is being referenced. Refer to the RRC website at the following address for the most recent information.
http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info

CONFIDENTIAL BUSINESS INFORMATION

GROUNDWATER PROTECTION DETERMINATION

Form GW-2

Groundwater Advisory Unit

Date Issued:	31 December 2024	**GAU Number:**	389718

Attention:	EXXONMOBIL LOW C SOL ON ATTN EDWARD E GRAHAM SPRING, TX 77389	**API Number:**	24532912
		County:	JEFFERSON
		Lease Name:	Bead Farm
		Lease Number:	
Operator No.:	101256	**Well Number:**	3
		Total Vertical	10000
		Latitude:	30.011563
		Longitude:	-94.297672
		Datum:	NAD27

Purpose: Injection into Non-producing Zone (W-14)

Location: Survey-HT&B RR CO/TURNER, D C; Abstract-658; Section-8

To protect usable-quality groundwater at this location, the Groundwater Advisory Unit of the Railroad Commission of Texas recommends:

This Initial Recommendation is for the purpose of Class VI injection only.

Usable-quality water occurs from the land surface to a depth of 1,225 feet. Moreover, the interval from the land surface to a depth of 700 feet contains water of superior quality which must be isolated from water in underlying beds.

The BASE OF UNDERGROUND SOURCES OF DRINKING WATER (USDW) is estimated to occur at a depth of 1,450 feet at the site of the referenced well.

*(SIP Purpose Only) Water Code Section 27.046(a) requires the GAU to issue a GW-2 letter containing Non-Endangerment language prior to issuance of a class VI permit. An additional letter will be required before SIP can issue a final permit because this letter is silent on endangerment of fresh water. *

Note: Unless stated otherwise, this recommendation is intended to apply to all wells drilled within 200 feet of the subject well. Unless stated otherwise, this recommendation is for normal drilling, production, and plugging operations only.

This determination is based on information provided when the application was submitted on 12/19/2024. If the location information has changed, you must contact the Groundwater Advisory Unit, and submit a new application if necessary. If you have questions, please contact us at 512-463-2741 or gau@rrc.texas.gov.

Groundwater Advisory Unit, Oil and Gas Division

CONFIDENTIAL BUSINESS INFORMATION

GROUNDWATER PROTECTION DETERMINATION

Form GW-2

Groundwater Advisory Unit

Date Issued:	28 January 2025	**GAU Number:**	390199

Attention:	EXXONMOBIL LOW C SOL ON ATTN EDWARD E GRAHAM SPRING, TX 77389	**API Number:**	24532912
		County:	JEFFERSON
		Lease Name:	Bead Farm
		Lease Number:	
Operator No.:	101256	**Well Number:**	3
		Total Vertical	10000
		Latitude:	30.011563
		Longitude:	-94.297672
		Datum:	NAD27

Purpose: Injection into Non-producing Zone (W-14)

Location: Survey-HT&B RR CO/TURNER, D C; Abstract-658; Section-8

To protect usable-quality groundwater at this location, the Groundwater Advisory Unit of the Railroad Commission of Texas recommends:

This Recommendation is for the purpose of Class VI injection only.

Usable-quality water occurs from the land surface to a depth of 1200 feet. Moreover, the interval from the land surface to a depth of 700 feet contains water of superior quality which must be isolated from water in underlying beds.

The BASE OF UNDERGROUND SOURCES OF DRINKING WATER (USDW) is estimated to occur at a depth of 1450 feet at the site of the referenced well.

This recommendation is applicable to all wells within a radius of 1.0 mile of this location.

The vertical geological isolation from both bases of usable quality water and underground source of drinking water is at 3,200 feet in TVD depth (for UIC Purpose Only).

Injection into the subsurface interval from 3400 to 8600 feet in TVD depth, as proposed in the submitted W14 (Class VI) application dated on December 18th of 2024 , WILL NOT ENDANGER the PROTECTED WATER STRATA geologically at the proposed location in this area (for UIC Purpose Only).

Note: Unless stated otherwise, this recommendation is intended to apply to all wells drilled within 200 feet of the subject well. Unless stated otherwise, this recommendation is for normal drilling, production, and plugging operations only.

This determination is based on information provided when the application was submitted on 01/22/2025. If the location information has changed, you must contact the Groundwater Advisory Unit, and submit a new application if necessary. If you have questions, please contact us at 512-463-2741 or gau@rrc.texas.gov.

Groundwater Advisory Unit, Oil and Gas Division

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

Form W-2

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

Status: Approved
Date: 02/20/2025
Tracking No.: 326180

OIL WELL POTENTIAL TEST, COMPLETION OR RECOMPLETION REPORT,

OPERATOR INFORMATION

Operator EXXONMOBIL LOW C SOL ON STOR LLC **Operator** 101256
Operator ATTN EDWARD E GRAHAM 22777 SPRINGWOODS VILLAGE PKWY SPRING, TX 77389-0000

WELL INFORMATION

API 42-245-32912 **County:** JEFFERSON
Well No.: 3 **RRC District** 03
Lease BEAD FARM **Field** WILDCAT
RRC Lease 28200 **Field No.:** 00006001
Location Section: 8, Block: , Survey: HT&B RR CO/TURNER, D C, Abstract: 658

Latitude 30 **Longitud** -94
This well is 3.35 **miles in a** SE
direction from CHINA,
which is the nearest town in the

FILING INFORMATION

Purpose of Well Record Only
Type of New Well
Well Type: Shut-In Producer **Completion or Recompletion** 10/18/2024

Type of Permit	Date	Permit No.
Permit to Drill, Plug Back, or	04/17/2024	898450
Rule 37 Exception		
Fluid Injection		
O&G Waste Disposal		
Other:		

COMPLETION INFORMATION

Spud 08/05/2024 **Date of first production after rig** 10/18/2024
Date plug back, deepening, drilling operation 08/05/2024 **Date plug back, deepening, recompletion, drilling operation** 10/18/2024
Number of producing wells on this lease this field (reservoir) including this 0 **Distance to nearest well in lease & reservoir** 0.0
Total number of acres in 650.00 **Elevation** 23 GL
Total depth TVD 8565 **Total depth MD**
Plug back depth TVD 8466 **Plug back depth MD**
Was directional survey made other inclination (Form W- No **Rotation time within surface casing Is Cementing Affidavit (Form W-15)** 45.0 Yes
Recompletion or No **Multiple** No
Type(s) of electric or other log(s) Gamma Ray (MWD)
Electric Log Other Description:

Location of well, relative to nearest lease of lease on which this well is 1742.0 **Feet from the** West **Line and** 2937.0 **Feet from the** North **Line of the** BEAD FARM **Lease.** **Off Lease :** No

FORMER FIELD (WITH RESERVOIR) & GAS ID OR OIL LEASE NO.

Field & Reservoir	Gas ID or Oil Lease	Well No.	Prior Service Type

PACKET: N/A

W2: N/A

FOR NEW DRILL OR RE-ENTRY, SURFACE CASING DEPTH DETERMINED BY:

GAU Groundwater Protection Determination		**Depth**	1100.0	**Date**	03/21/2024
SWR 13 Exception		**Depth**	2170.0		

INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION

Date of		**Production**	
Number of hours	24	**Choke**	
Was swab used during this	No	**Oil produced prior to**	

PRODUCTION DURING TEST PERIOD:

Oil		**Gas**	
Gas - Oil	0	**Flowing Tubing**	
Water			

CALCULATED 24-HOUR RATE

Oil		**Gas**	
Oil Gravity - API - 60.:		**Casing**	
Water			

CASING RECORD

Ro	Type of Casing	Casing Size (in.)	Hole Size	Setting Depth	Multi - Stage Tool	Multi - Stage Shoe	Cement Class	Cement Amoun	Slurry Volume (cu.	Top of Cement (ft.)	TOC Determined By
1	Surface	13 3/8	17 1/2	2155			H	1090	2151.0	0	Circulated to Surface
2	Conductor	20	26	120			A	230	274.0	0	Circulated to Surface
3	Conventional Production	9 5/8	12 1/4	8548			H	2015	3815.0	0	Circulated to Surface

LINER RECORD

Ro	Liner Size	Hole Size	Liner Top	Liner Bottom	Cement Class	Cement Amoun	Slurry Volume (cu.	Top of Cement (ft.)	TOC Determined

N/A

TUBING RECORD

Ro	Size (in.)	Depth Size (ft.)	Packer Depth (ft.)/Type
1	7	7283	7283 / WIRELINE SET, PERMANENT

PRODUCING/INJECTION/DISPOSAL INTERVAL

Ro	Open hole?	From (ft.)	To (ft.)
1	No	L 7332	7576.0
2	No	L 7762	7860.0
3	No	L 7946	7986.0

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC.

Was hydraulic fracturing treatment No

Is well equipped with a downhole sleeve? No

If yes, actuation pressure

Production casing test pressure (PSIG)

Actual maximum pressure (PSIG) during hydraulic fracturing

fracturin

Has the hydraulic fracturing fluid disclosure been

No

Ro	Type of Operation	Amount and Kind of Material Used	Depth Interval (ft.)	
1	Other	PERFORATIONS	7332	7576

FORMATION RECORD

Formations	Encountere	Depth TVD	Depth MD	Is formation	Remarks
LAFAYETTE - DISPOSAL	No			No	MUD LOGGING AND CUTTING SAMPLES WERE NOT COLLECTED IN THE SHALLOW HOLE SECTION. THEREFORE, SHALLOW FORMATIONS ENCOUNTERED COULD NOT BE CONFIRMED AS LAFAYETTE AND/OR PLEISTOCENE.
CAPROCK - DISPOSAL	No			No	NOT ENCOUNTERED
SPINDLETOP SALT DOME - DISPOSAL	No			No	NOT ENCOUNTERED
FANNETT SALT DOME - DISPOSAL	No			No	NOT ENCOUNTERED
BIG HILL SALT DOME - DISPOSAL	No			No	NOT ENCOUNTERED
PLEISTOCENE-LISSIE - DISPOSAL	No			No	MUD LOGGING AND CUTTING SAMPLES WERE NOT COLLECTED IN THE SHALLOW HOLE SECTION. THEREFORE, SHALLOW FORMATIONS ENCOUNTERED COULD NOT BE CONFIRMED AS LAFAYETTE AND/OR PLEISTOCENE.
MIOCENE - DISPOSAL	Yes	3469.0	3469.0	Yes	LOGGED
FRIO - DISPOSAL	Yes	6424.0	6424.0	Yes	LOGGED, PERFORATIONS IN THE LOWER FRIO SAND FROM 7,331.5'-7,985.5'
MARINULINA - DISPOSAL	Yes	6038.5	6039.0	Yes	LOGGED
HETEROSTEGINA - DISPOSAL	Yes	6182.0	6182.0	Yes	LOGGED

Do the producing interval of this well produce H2S with a concentration in excess of 100 ppm No

Is the completion being downhole commingled No

REMARKS

THE WELL WAS PERFORATED AND SHUT IN. THIS WELL HAS NOT PRODUCED.

RRC REMARKS

PUBLIC COMMENTS:

CASING RECORD :

NONE.

TUBING RECORD:

PRODUCING/INJECTION/DISPOSAL INTERVAL :

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC. :

POTENTIAL TEST DATA:

OPERATOR'S CERTIFICATION

Printed	Josh Calkin	**Title:**	
Telephone	(281) 702-5537	**Date**	02/10/2025

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name: Exxon Mobil low Carbon solutions	Operator P-5 No.: 101256
Cementer Name: Halliburton	Cementer P-5 No.: 347151

WELL INFORMATION

District No.: 3	County: Jefferson	
Well No.: 3	API No.: 42-245-32912	Drilling Permit No.: 898450
Lease Name: Bead Farm	Lease No.:	
Field Name: Wild Cat	Field No.:	

I. CASING CEMENTING DATA

Type of casing: ☐ Conductor ☒ Surface ☐ Intermediate ☐ Liner ☐ Production

Drilled hole size (in.): 17 1/2	Depth of drilled hole (ft.): 2170	Est. % wash-out or hole enlargement: 20%
Size of casing in O.D. (in.): 13 3/8	Casing weight (lbs/ft) and grade: 68# J55	No. of centralizers used: 18
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☑ YES ☐ NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 2,155	Top of liner (ft.):
		Setting depth liner (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date: 08/07/2024

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	705	A		1660	2390
2	385	XH		491	653
3					
Total	1090			2151	3043

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth shoe (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date: 07/04/2024

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1		H			
2					
3					
Total	0			0	0

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth tool (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS

EXXONMOBIL BEAD FARM CO #3 SO#0909508176 SLURRY #1 ECONOCEM SLURRY #2 HALCEM

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

MOHAMED MOUNIR MEKAKDA	Halliburton		
Name and title of cementer's representative	Cementing Company	Signature	
4720 Industrial	Bossier City, LA 71112	903-986-5096	08/07/2024
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

James Harvey	Operations Sup		
Typed or printed name of operator's representative	Title	Signature	
22777 Springwoods Village Spring Tx 77389	512	949 8272	8/8/2024
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

A. **What to file:** An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on one form.

The Form W-15 should be filed with the Form W-3, Plugging Record, unless the Form W-3 is signed by the cementing company representative. When reporting dry holes, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.

B. **How to file:** An oil and gas completion report and Form W-15 may be filed online using the Commission's Online System (https://webapps.rrc.state.tx.us/security/login.do) or a paper copy of the form may be mailed to the Commission in Austin (P.O. Box 12967, Austin, Texas 78711-2967).

C. **Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.

To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 (http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.

D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing **and** Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name:	Byrd	Operator P-5 No.:	
Cementer Name:	CUDD Pumping Services	Cementer P-5 No.:	191917

WELL INFORMATION

District No.:		County:	Atacosa		
Well No.:	Bead Farm Co #3	API No.:		Drilling Permit No.:	
Lease Name:	Bead Farm Co #3	Lease No.:			
Field Name:		Field No.:			

I. CASING CEMENTING DATA

Type of casing: [x] Conductor [ ] Surface [ ] Intermediate [ ] Liner [ ] Production

Drilled hole size (in.): 26	Depth of drilled hole (ft.): 120	Est. % wash-out or hole enlargement: 30	
Size of casing in O.D. (in.): 20	Casing weight (lbs/ft) and grade: 78.6 ppf X-52 Welded)	No. of centralizers used:	
Was cement circulated to ground surface (or bottom of cellar) outside casing? [x] YES [ ] NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 120	Top of liner (ft.):	
		Setting depth liner (ft.):	
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.): 0	Cementing date:	7.26.24

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	230	A	See remarks	274	182
2					
3					
4	230			274	182

II. CASING CEMENTING DATA

Type of casing: [ ] Surface [ ] Intermediate [ ] Production [ ] Tapered production [ ] Multi-stage cement shoe [ ] Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:	
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:	
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:		
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:	
Was cement circulated to ground surface (or bottom of cellar) outside casing? [ ] YES [ ] NO	Setting depth shoe (ft.):		
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:	

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

III. CASING CEMENTING DATA

Type of casing: [ ] Surface [ ] Intermediate [ ] Production [ ] Tapered production [ ] Multi-stage cement/DV tool [ ] Multiple parallel strings

Drilled hole size	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:	
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:	
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:		
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:	
Was cement circulated to ground surface (or bottom of cellar) outside casing? [ ] YES [ ] NO	Setting depth tool (ft.):		
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:	

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date				-	-	-	-
Size of hole of pipe (in.)	-	-	-	-	-	-	-
Depth to bottom of tubing or drill pipe (ft.)	-	-	-	-	-	-	-
Cement retainer setting depth (ft.)	-	-	-	-	-	-	-
CIBP setting depth (ft.)	-	-	-	-	-	-	-
Amount of cement on top of CIBP (ft.)	-	-	-	-	-	-	-
Sacks of cement used				-	-	-	-
Slurry volume pumped (cu. ft.)				-	-	-	-
Calculated top of plug (ft.)				-	-	-	-
Measured top of plug, if tagged (ft.)			-	-	-	-	-
Slurry weight (lbs/gal)				-	-	-	-
Class/type of cement				-	-	-	-
Perforate and squeeze (YES/NO)	-	-	-	-	-	-	-

REMARKS	
1	Tail-100% Cl A + 1% SA001
2	
3	
4	

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

Scott Womelsdorf	Service Supervisor	CUDD Pumping Services	Scott Womelsdorf
Name and title of cementer's representative		Cementing Company	Signature

1434 CR 422	Pleasanton	TX	78064	(830)-254-4200	7.26.24
Address	City,	State,	Zip Code	Tel: Area Code Number	Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that the data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

MICHAEL MATHIS	WELL OPERATIONS SUPERVISOR	
Typed or printed name of operator's representative	Title	Signature

				(512) 949-8292	7/26/2024
Address	City,	State,	Zip Code	Tel: Area Code Number	Date

Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

A. **What to file:** An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on on form.

The Form W-15 should be filed with the form W-3, Plugging Record, unless the Form W-3 si signed by the cementing company representative. When reporting dry holes, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.

B. **How to file:** An oil and gas completion report and Form W-15 may be filed online using the Commission's Online System (https://webapps.rrc.state.tx.us/security/login.do) or a paper copy of the form may be mailed to the Commission in Austin (P.O. Box 12967, Austin, Texas 78711-2967).

C. **Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.

To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 (http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&ptac=&ti=16&pt=1&ch=3&rl=14). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.

D. **Estimated % wash-out:** If the estimated % wash-outis less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing **and** Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

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G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name: ExxonMobil Low Carbon Solution	Operator P-5 No.: 101256
Cementer Name: Halliburton	Cementer P-5 No.: 347151

WELL INFORMATION

District No.: 03	County: Jefferson	
Well No.: 3	API No.: 42-245-32912	Drilling Permit No.: 898450
Lease Name: Bead Farm	Lease No.:	
Field Name: Wildcat	Field No.:	

I. CASING CEMENTING DATA

Type of casing: ☐ Conductor ☐ Surface ☐ Intermediate ☐ Liner ☒ Production

Drilled hole size (in.): 12-1/4"	Depth of drilled hole (ft.): 8565'	Est. % wash-out or hole enlargement: 17%
Size of casing in O.D. (in.): 9-5/8"	Casing weight (lbs/ft) and grade: 47.5/53ppf L80/13Cr/25Cr	No. of centralizers used: 170
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☑ YES ☐ NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 8548'	Top of liner (ft.): / Setting depth liner (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.): 0	Cementing date: 8-27-2024

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	725	H	N/A	1323	691
2	1290	H	N/A	2492	7732
3					
Total	2015			3815	8423

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth shoe (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth tool (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS

EXXONMOBILE, BEAD FARM, #3, PRODUCTION

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

JEROD HACK, SERVICE SUPERVISOR	Halliburton		
Name and title of cementer's representative	Cementing Company	Signature	
4720 Industrial	Bossier City, LA 71112	903-986-5096	08-27-2024
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

MICHAEL MATHIS	WELLS OPERATIONS SUPERVISOR		
Typed or printed name of operator's representative	Title	Signature	
			08-27-2024
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

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G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON | Sperry Drilling

DGR / EWR-P4 / DIR

Powered by INSITE™

1 : 500

MD Phase Attenuation Log

Country : USA
Field : WILDCAT
Location : Lat: 30° 0' 42.40" North Long: 94° 17' 52.29" West
Well : BEAD FARM 3
Company : EXXONMOBIL LOW C SOL ON STOR LL
Rig : NABORS X33

Company	:	EXXONMOBIL LOW C SOL ON STOR LL
Rig	:	NABORS X33
Well	:	BEAD FARM 3
Field	:	WILDCAT
Country	:	USA
API Number	:	4224532912

LOCATION

Latitude : 30° 0' 42.40" North
Longitude : 94° 17' 52.29" West

UTM X = 3,456,312.030 usft
UTM Y = 13,945,353.690 usft

Other Services

Permanent Datum : Ground Level
Elevation : 27.00 ft
Log Measured From : Drill Floor
32.52 ft Above Permanent Datum
Drilling Measured From : Drill Floor

MD LOG

Elev. KB
DF 59.52 ft
GL 27.00 ft
WD

Depth Logged : 120.00 ft To 8,565.00 ft
Date Logged : 05-Aug-24 To 14-Aug-24
Total Depth MD : 8,565.00 ft TVD : 8,564.26 ft
Spud Date : 05-Aug-24

Unit No. : N/A
Job No. : LF-XX-0909035053
Plot Type : Final
Plot Date : 10-Sep-24

Run No.	Borehole Record (MD)			Size	Casing Record (MD)		
	Size	From	To		Weight	From	To
100	17.500 in	120.00 ft	2,170.00 ft	20.000 in	146.64 lbpf	SURFACE	120.00 ft
200	12.250 in	2,170.00 ft	3,333.00 ft	13.375 in	66.10 lbpf	SURFACE	2,155.00 ft
201	12.250 in	3,333.00 ft	3,394.00 ft				
300	12.250 in	3,394.00 ft	3,503.00 ft				
301	12.250 in	3,503.00 ft	3,515.00 ft				
302	12.250 in	3,515.00 ft	3,572.00 ft				
400	12.250 in	3,572.00 ft	7,770.00 ft				
401	12.250 in	7,770.00 ft	7,815.00 ft				
500	12.250 in	7,815.00 ft	8,565.00 ft				

WELL INFORMATION

MWD Run Number	100	200	300	400	500
Date run completed	06-Aug-24	09-Aug-24	10-Aug-24	12-Aug-24	15-Aug-24
Rig Bit Number	100	200	300	400	500
Bit Size (in)	17.500	12.250	12.250	12.250	12.250
Tool Nominal OD (in)	8.000	8.000	8.000	8.000	8.000
Log Start Depth (MD, ft)	120.00	2,170.00	3,394.00	3,572.00	7,815.00
Log End Depth (MD, ft)	2,170.00	3,333.00	3,503.00	7,770.00	8,565.00
Drill or Wipe	Drill	Drill	Drill and Wipe	Drill and Wipe	Drill and Wipe
Drill/Wipe Start Date and Time	05-Aug-24 23:00	08-Aug-24 17:40	10-Aug-24 02:03	11-Aug-24 13:09	14-Aug-24 08:26
Drill/Wipe End Date and Time	06-Aug-24 11:10	09-Aug-24 03:17	10-Aug-24 04:37	12-Aug-24 13:50	14-Aug-24 08:26
Min Inc (deg) @ Depth (MD, ft)	0.13 @ 317.00	0.67 @ 3,304.00	0.92 @ 3,471.00	0.13 @ 7,374.00	0.13 @ 7,754.00
Max Inc (deg) @ Depth (MD, ft)	0.92 @ 2,002.00	1.00 @ 2,568.00	0.98 @ 3,411.00	2.27 @ 3,693.00	0.75 @ 7,949.00
Bit TFA(in2) / Bit Type	1.23 / GT65s	1.23 / HD65s	1.23 / HD65s	1.23 / HD65s	1.23 / HD65s
Flow Rate (gpm)	700.00	750.00	750.00	740.00	689.00
Max AV (fpm) / CV (fpm) @ MWD	80.0 / 46.0	54.0 / 35.0	43.0 / 32.0	45.0 / 32.0	43.0 / 38.0
Fluid Type	Native/Spud Mud	Diesel Mud Base	Diesel Mud Base	Diesel Mud Base	Diesel Mud Base
Density (ppg) / Viscosity (spqt)	9.20 / 34.00	10.35 / 74.00	10.35 / 68.00	10.40 / 65.00	10.40 / 65.00
Filtrate CL (ppm)	1,300.00	61,000.00	64,000.00	66,000.00	60,000.00
pH / API Filtrate (mptm)	8.00 / 8	N/A / 12	N/A / 0	N/A / 0	N/A / 0
PV (cP) / YP (lhf2)	4 / 3.00	24 / 32.00	23 / 21.00	21 / 24.00	16 / 18.00
% Solids / % Sand	4.9 / 0	10.2 / 0	11 / 0	11.4 / .1	11.7 / 0
% Oil / Oil:Water Ratio	0 / 0:100	54 / 62:38	52 / 60:40	55.5 / 65:35	58.5 / 68:32
Rm @ Measured Temp (degF)	0.200 @ 87.00	N/A @ N/A	N/A @ N/A	N/A @ N/A	N/A @ N/A
Rmf @ Measured Temp (degF)	0.200 @ 87.00	N/A @ N/A	N/A @ N/A	N/A @ N/A	N/A @ N/A
Rmc @ Measured Temp (degF)	0.200 @ 87.00	N/A @ N/A	N/A @ N/A	N/A @ N/A	N/A @ N/A
Max Tool Temp (degF) / Source	127.29 / HCIM	152.00 / HCIM	130.82 / HCIM	173.18 / HCIM	169.65 / HCIM
Rm @ Max Tool Temp (degF)	N/A @ 127.29	N/A @ 152.00	N/A @ 130.82	N/A @ 173.18	N/A @ 169.65
Lead MWD Engineer	Nathan Lakin	Nathan Lakin	Nathan Lakin	Nathan Lakin	Nathan Lakin
Customer Representative	N/A	N/A	N/A	N/A	N/A

SENSOR INFORMATION

Downhole Processor Information

Tool Type	HCIM	HCIM	HCIM	HCIM	HCIM
Software Version	98.43	98.43	98.43	98.43	98.43
Sub Serial Number	11432374	11432374	11432374	11432374	11432374
Insert Serial Number	11753209	11753209	11753209	11753209	11753209
Date and Time Initialized	05-Aug-24 19:34	08-Aug-24 10:27	09-Aug-24 22:54	11-Aug-24 06:34	13-Aug-24 21:15
Date and Time Read	07-Aug-24 01:00	09-Aug-24 07:20	12-Aug-24 14:30	12-Aug-24 23:30	14-Aug-24 20:45
ECMB SW Version	N/A	N/A	N/A	N/A	N/A

Directional Sensor Information

Tool Type	PCDC	PCDC	PCDC	PCDC	PCDC
Distance From Bit (ft)	36.08	26.50	26.50	66.33	66.72
Software Version	6.43	6.43	6.43	6.43	6.43
Sub Serial Number	10435619	10435619	10435619	10435619	10435619
Sonde Serial Number	13008879	13008879	13008879	13008879	13008879
Sensor ID Number	N/A	N/A	N/A	N/A	N/A
Toolface Offset (deg)	0.00	0.00	0.00	54.00	276.00

Gamma Ray Sensor Information

Tool Type	DGR	DGR	DGR	DGR	DGR
Distance From Bit (ft)	25.64	16.06	16.06	55.82	56.28
Recorded Sample Period (sec)	4	4	4	4	4
Software Version	N/A	N/A	N/A	N/A	N/A
Sub Serial Number	11654485	11654485	11654485	11654485	11654485
Insert/Sonde Serial Number	11671533	11671533	11671533	11671533	11671533

Resistivity Sensor Information

Tool Type	EWR-P4				
Distance From Bit (ft)	11.55				
Recorded Sample Period (sec)	4				
Software Version	1.51				
Sub Serial Number	10673350				
Receiver Insert Serial Number	11827847				
Transmitter Insert Serial Number	11707807				
Receiver Orientation	Down				

REMARKS

All depths are referenced to the driller's pipe tally.

DGXT - Gamma Ray formation exposure time
EWXT - Resistivity formation exposure time

Default 1:500 Log Smoothing:
Interval Resolution: 0.5ft
Window Interval:(+/-) 0.6ft
Gap Fill: 3.0ft

Archive Name: BEAD_FARM_3_500MD_PHASE_ATTEN_120_8565

Plot Width: 8.25 in

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
Oil and Gas Division

ELECTRIC LOG STATUS REPORT

FORM L-1

Tracking No.: 326180

This facsimile L-1 was generated electronically from data submitted to the RRC.

Instructions

When to File Form L-1:
- with Forms G-1, W-2, and GT-1 for new and deepened gas, oil, and geothermal wells
- with Form W-3 for plugged dry holes
- when sending in a log which was held under a request for confidentiality and the period for confidentiality has not yet expired.

When is Form L-1 NOT required:
- with Forms W-2, G-1, and GT-1 filed for injection wells, disposal wells, water supply wells, service wells, re-test wells, re-classifications, and plugbacks of oil, gas or geothermal wells
- with Form W-3 for plugging of other than a dry hole

Where to File Form L-1:
- with the appropriate Commission district office

Filling out Form L-1:
- Section I and the signature section must be filled out for all wells
- complete only the appropriate part of Section II

Type of log required:
- any wireline survey run for the purpose of obtaining lithology, porosity, or resistivity information
- no more than one such log is required but it must be of the subject well
- if such log is NOT run on the subject well, do NOT substitute any other type of log; just select Section II, Part A below

SECTION I. IDENTIFICATION

Operator Name: EXXONMOBIL LOW C SOL ON STOR LLC	District No. 03	Completion Date: 10/18/2024
Field Name WILDCAT	Drilling Permit No. 898450	
Lease Name BEAD FARM	Lease/ID No. 28200	Well No. 3
County JEFFERSON	API No. 42- 245-32912	

SECTION II. LOG STATUS (Complete either A or B)

☐ A. BASIC ELECTRIC LOG NOT RUN

☒ B. BASIC ELECTRIC LOG RUN. (Select one)

☒ 1. Confidentiality is requested and a copy of the header for each log that has been run on the well is attached.

☐ 2. Confidentiality already granted on basic electric log covering this interval (applicable to deepened wells only).

☐ 3. Basic electric log covering this interval already on file with Commission (applicable to deepened wells only).

☐ 4. Log attached to (select one):

☐ (a) Form L-1 (this form). If the company/lease name on log is different from that shown in Section I, please enter name on log here: _____

Check here if attached log is being submitted after being held confidential. ☐

☐ (b) Form P-7, Application for Discovery Allowable and New Field Designation.

☐ (c) Form W-4, Application for Multiple Completion:

Lease or ID No(s). _____

Well No(s). _____

Josh Calkin
Signature

Title

EXXONMOBIL LOW C SOL ON STOR LLC
Name (print)

(281) 702-5537
Phone

12/18/2024
Date

-FOR RAILROAD COMMISSION USE ONLY-

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON

4607 HWY 90 EAST • BROUSSARD, LA 70518

PHONE 337 837 3061 • FAX 337 837 4400

Jefferson County,
State of Texas

I, **Kristen Killen,** certify that: I am employed by Halliburton Energy Service and that I did on the day(s) of **August 5, 2024 to August 14, 2024** conduct or supervise the taking of Directional Surveys as follow:

- **317' to a depth of 8497' MWD surveys performed by Sperry Drilling MWD**
- **Final survey is projected to a total depth of 8565'**

I certify that the data is true, correct, complete and within the limitations of the tool as set forth by Halliburton Energy Services. I further certify that I am authorized and qualified to make this report, that this survey was conducted at the request of **EXXONMOBIL LOW C SOL ON STOR LLC** for the **BEAD FARM 3** in **Jefferson County, TX,** and that I have reviewed this report and find that it conforms to the principles and procedures set forth by Halliburton Energy Service for quality well surveying.

Kristen Killen, Log Analyst

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON
4607 HWY 90 EAST • BROUSSARD, LA 70518
PHONE 337 837 3061 • FAX 337 837 4400

September 9, 2024

Railroad Commission of Texas
Oil and Gas Division
P.O. Box 12967
Capital Station
Austin, TX 78711

Re: EXXONMOBIL LOW C SOL ON STOR LLC
R.R.C. Operator No. 101256
BEAD FARM 3
Permit No. 898450
Jefferson County, TX
API # 42-245-32912

Attention: Ms. Pam Johns

Enclosed, please find one copy of the survey performed on the above referenced well by Halliburton Energy Services, Inc. Operator #347-151.

Other information required by your office is as follows:

Name & Title of Surveyor	-	Kristen Killen, Log Analyst
Drainhole Number	-	Original
Surveyed Depths	-	317' – 8497' MWD Surveys performed by Sperry Drilling
Dates Performed	-	August 5, 2024 to August 14, 2024
Type of Survey	-	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the listed e-mail address.

Respectfully,



Kristen Killen
Log Analyst
Kristen.Killen@Halliburton.com
Halliburton / Sperry Drilling

Enclosures
RE: LA-MM 909035053

CONFIDENTIAL BUSINESS INFORMATION

ExxonMobil

Jefferson County, Tx_NAD83
Rose Prospect CCS
Bead Farm #3

003 ST00BP00

Design: 003 ST00BP00

Sperry Drilling Services

Geodetic Report

22 August, 2024

Well Coordinates: 13,945,353.69 N, 3,456,312.03 E (30° 00' 42.40" N, 094° 17' 52.29" W)
Ground Level: 27.00 usft

Local Coordinate Origin:	Centered on Well Bead Farm #3
Viewing Datum:	(32.52') Nabors X-33 @ 59.52usft (Plan)
TVDs to System:	N
North Reference:	Grid
Unit System:	API US Survey Feet

Version: 5000.17 Build: 02

HALLIBURTON

Design Report for Bead Farm #3 - 003 ST00BP00

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude (usft)	Geographic Coordinates Longitude (usft)	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	30° 0' 42.403 N	94° 17' 52.286 W	13,945,353.69	3,456,312.03
317.00	0.13	105.78	317.00	-0.10	0.35	30° 0' 42.402 N	94° 17' 52.282 W	13,945,353.59	3,456,312.38
405.00	0.48	59.26	405.00	0.06	0.76	30° 0' 42.403 N	94° 17' 52.277 W	13,945,353.75	3,456,312.79
499.00	0.31	43.43	499.00	0.45	1.27	30° 0' 42.407 N	94° 17' 52.271 W	13,945,354.14	3,456,313.30
593.00	0.18	41.92	593.00	0.74	1.55	30° 0' 42.410 N	94° 17' 52.268 W	13,945,354.43	3,456,313.58
685.00	0.22	50.85	684.99	0.96	1.78	30° 0' 42.412 N	94° 17' 52.265 W	13,945,354.65	3,456,313.81
768.00	0.25	41.72	767.99	1.20	2.02	30° 0' 42.414 N	94° 17' 52.262 W	13,945,354.89	3,456,314.05
865.00	0.18	5.76	864.99	1.51	2.18	30° 0' 42.417 N	94° 17' 52.260 W	13,945,355.20	3,456,314.21
963.00	0.25	336.43	962.99	1.86	2.11	30° 0' 42.421 N	94° 17' 52.261 W	13,945,355.55	3,456,314.14
1,060.00	0.45	349.02	1,059.99	2.43	1.95	30° 0' 42.426 N	94° 17' 52.262 W	13,945,356.12	3,456,313.98
1,157.00	0.39	36.90	1,156.99	3.06	2.08	30° 0' 42.433 N	94° 17' 52.261 W	13,945,356.75	3,456,314.11
1,247.00	0.76	43.05	1,246.98	3.74	2.67	30° 0' 42.439 N	94° 17' 52.254 W	13,945,357.43	3,456,314.70
1,338.00	0.50	80.63	1,337.98	4.25	3.47	30° 0' 42.444 N	94° 17' 52.244 W	13,945,357.94	3,456,315.50
1,436.00	0.38	73.99	1,435.98	4.41	4.21	30° 0' 42.445 N	94° 17' 52.236 W	13,945,358.10	3,456,316.24
1,527.00	0.56	41.34	1,526.97	4.83	4.79	30° 0' 42.449 N	94° 17' 52.229 W	13,945,358.52	3,456,316.82
1,623.00	0.14	230.38	1,622.97	5.10	5.01	30° 0' 42.452 N	94° 17' 52.227 W	13,945,358.79	3,456,317.04
1,720.00	0.88	240.64	1,719.97	4.66	4.27	30° 0' 42.447 N	94° 17' 52.235 W	13,945,358.35	3,456,316.30
1,815.00	0.90	236.11	1,814.96	3.89	3.01	30° 0' 42.440 N	94° 17' 52.250 W	13,945,357.58	3,456,315.05
1,908.00	0.86	241.23	1,907.94	3.15	1.80	30° 0' 42.433 N	94° 17' 52.264 W	13,945,356.84	3,456,313.83
2,002.00	0.92	198.67	2,001.93	2.09	0.94	30° 0' 42.423 N	94° 17' 52.274 W	13,945,355.78	3,456,312.97
2,095.00	0.78	198.22	2,094.92	0.78	0.50	30° 0' 42.411 N	94° 17' 52.280 W	13,945,354.47	3,456,312.53
2,132.00	0.86	199.33	2,131.92	0.28	0.33	30° 0' 42.406 N	94° 17' 52.282 W	13,945,353.97	3,456,312.36
2,181.00	0.97	198.19	2,180.91	-0.46	0.08	30° 0' 42.398 N	94° 17' 52.285 W	13,945,353.23	3,456,312.11
2,278.00	0.94	195.43	2,277.90	-2.01	-0.39	30° 0' 42.383 N	94° 17' 52.291 W	13,945,351.68	3,456,311.64
2,374.00	0.96	190.75	2,373.89	-3.56	-0.75	30° 0' 42.368 N	94° 17' 52.296 W	13,945,350.13	3,456,311.28
2,472.00	0.97	201.76	2,471.87	-5.13	-1.21	30° 0' 42.353 N	94° 17' 52.302 W	13,945,348.56	3,456,310.82
2,568.00	1.00	206.11	2,567.86	-6.64	-1.88	30° 0' 42.338 N	94° 17' 52.310 W	13,945,347.05	3,456,310.15
2,663.00	0.89	206.72	2,662.85	-8.04	-2.58	30° 0' 42.325 N	94° 17' 52.319 W	13,945,345.65	3,456,309.45
2,755.00	0.79	205.85	2,754.84	-9.25	-3.17	30° 0' 42.313 N	94° 17' 52.326 W	13,945,344.44	3,456,308.86
2,847.00	0.75	212.30	2,846.83	-10.33	-3.77	30° 0' 42.302 N	94° 17' 52.333 W	13,945,343.36	3,456,308.26
2,940.00	0.81	208.77	2,939.82	-11.42	-4.41	30° 0' 42.292 N	94° 17' 52.341 W	13,945,342.27	3,456,307.62
3,036.00	0.75	206.15	3,035.81	-12.58	-5.02	30° 0' 42.281 N	94° 17' 52.349 W	13,945,341.11	3,456,307.01
3,133.00	0.81	204.76	3,132.80	-13.77	-5.58	30° 0' 42.269 N	94° 17' 52.356 W	13,945,339.92	3,456,306.45
3,228.00	0.73	204.84	3,227.79	-14.93	-6.12	30° 0' 42.258 N	94° 17' 52.362 W	13,945,338.76	3,456,305.91
3,304.00	0.67	204.58	3,303.79	-15.78	-6.51	30° 0' 42.250 N	94° 17' 52.367 W	13,945,337.91	3,456,305.52
3,411.00	0.98	231.56	3,410.78	-16.91	-7.49	30° 0' 42.239 N	94° 17' 52.379 W	13,945,336.78	3,456,304.54
3,456.95	0.93	232.86	3,456.72	-17.38	-8.09	30° 0' 42.234 N	94° 17' 52.386 W	13,945,336.31	3,456,303.94
3,471.00	0.92	233.29	3,470.77	-17.52	-8.27	30° 0' 42.233 N	94° 17' 52.388 W	13,945,336.17	3,456,303.76
3,693.00	2.27	232.20	3,692.68	-21.28	-13.18	30° 0' 42.198 N	94° 17' 52.445 W	13,945,332.41	3,456,298.85
3,790.00	2.13	234.46	3,789.61	-23.51	-16.16	30° 0' 42.177 N	94° 17' 52.480 W	13,945,330.18	3,456,295.87
3,877.00	2.10	229.32	3,876.55	-25.48	-18.69	30° 0' 42.158 N	94° 17' 52.510 W	13,945,328.21	3,456,293.34
3,973.00	1.87	229.17	3,972.49	-27.66	-21.20	30° 0' 42.138 N	94° 17' 52.539 W	13,945,326.03	3,456,290.83

Design Report for Bead Farm #3 - 003 ST00BP00

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude	Geographic Coordinates Longitude	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
4,069.00	1.58	227.05	4,068.45	-29.58	-23.36	30° 0' 42.120 N	94° 17' 52.565 W	13,945,324.11	3,456,288.67
4,166.00	1.18	229.82	4,165.42	-31.14	-25.10	30° 0' 42.105 N	94° 17' 52.585 W	13,945,322.55	3,456,286.93
4,260.00	1.13	222.08	4,259.40	-32.45	-26.46	30° 0' 42.093 N	94° 17' 52.601 W	13,945,321.24	3,456,285.57
4,355.00	1.30	218.12	4,354.38	-33.99	-27.75	30° 0' 42.078 N	94° 17' 52.617 W	13,945,319.70	3,456,284.28
4,545.00	0.88	214.41	4,544.34	-36.89	-29.91	30° 0' 42.050 N	94° 17' 52.643 W	13,945,316.80	3,456,282.12
4,642.00	0.63	222.34	4,641.33	-37.90	-30.69	30° 0' 42.040 N	94° 17' 52.652 W	13,945,315.79	3,456,281.34
4,825.00	0.44	231.95	4,824.33	-39.08	-31.92	30° 0' 42.029 N	94° 17' 52.666 W	13,945,314.61	3,456,280.11
5,018.00	0.36	262.36	5,017.32	-39.61	-33.10	30° 0' 42.024 N	94° 17' 52.680 W	13,945,314.08	3,456,278.93
5,105.00	0.25	225.32	5,104.32	-39.78	-33.51	30° 0' 42.023 N	94° 17' 52.685 W	13,945,313.91	3,456,278.52
5,200.00	0.39	177.91	5,199.32	-40.25	-33.65	30° 0' 42.018 N	94° 17' 52.687 W	13,945,313.44	3,456,278.38
5,391.00	0.31	182.05	5,390.31	-41.42	-33.64	30° 0' 42.007 N	94° 17' 52.687 W	13,945,312.27	3,456,278.39
5,486.00	0.31	169.41	5,485.31	-41.93	-33.60	30° 0' 42.002 N	94° 17' 52.687 W	13,945,311.76	3,456,278.43
5,579.00	0.25	115.14	5,578.31	-42.26	-33.37	30° 0' 41.998 N	94° 17' 52.684 W	13,945,311.43	3,456,278.66
5,675.00	0.19	109.32	5,674.31	-42.40	-33.03	30° 0' 41.997 N	94° 17' 52.681 W	13,945,311.29	3,456,279.00
5,771.00	0.26	142.20	5,770.31	-42.63	-32.75	30° 0' 41.994 N	94° 17' 52.677 W	13,945,311.06	3,456,279.28
5,867.00	0.18	75.89	5,866.31	-42.76	-32.47	30° 0' 41.993 N	94° 17' 52.674 W	13,945,310.93	3,456,279.56
6,047.00	0.14	37.10	6,046.31	-42.52	-32.06	30° 0' 41.995 N	94° 17' 52.670 W	13,945,311.17	3,456,279.97
6,238.00	0.42	17.33	6,237.31	-41.66	-31.71	30° 0' 42.004 N	94° 17' 52.665 W	13,945,312.03	3,456,280.32
6,335.00	0.25	355.92	6,334.31	-41.11	-31.62	30° 0' 42.009 N	94° 17' 52.664 W	13,945,312.58	3,456,280.41
6,430.00	0.25	355.77	6,429.30	-40.70	-31.65	30° 0' 42.013 N	94° 17' 52.664 W	13,945,312.99	3,456,280.38
6,525.00	0.26	299.85	6,524.30	-40.39	-31.85	30° 0' 42.016 N	94° 17' 52.666 W	13,945,313.30	3,456,280.18
6,619.00	0.25	289.02	6,618.30	-40.21	-32.23	30° 0' 42.018 N	94° 17' 52.671 W	13,945,313.48	3,456,279.80
6,809.00	0.40	280.55	6,808.30	-39.96	-33.28	30° 0' 42.021 N	94° 17' 52.682 W	13,945,313.73	3,456,278.75
6,998.00	0.28	240.88	6,997.30	-40.06	-34.33	30° 0' 42.020 N	94° 17' 52.694 W	13,945,313.63	3,456,277.70
7,185.00	0.18	170.15	7,184.30	-40.57	-34.68	30° 0' 42.016 N	94° 17' 52.698 W	13,945,313.12	3,456,277.35
7,282.00	0.25	146.16	7,281.29	-40.90	-34.53	30° 0' 42.012 N	94° 17' 52.697 W	13,945,312.79	3,456,277.50
7,374.00	0.13	148.56	7,373.29	-41.15	-34.37	30° 0' 42.010 N	94° 17' 52.695 W	13,945,312.54	3,456,277.66
7,471.00	0.26	192.80	7,470.29	-41.46	-34.36	30° 0' 42.007 N	94° 17' 52.695 W	13,945,312.23	3,456,277.67
7,563.00	0.38	181.88	7,562.29	-41.97	-34.42	30° 0' 42.002 N	94° 17' 52.696 W	13,945,311.72	3,456,277.61
7,658.00	0.19	175.36	7,657.29	-42.44	-34.41	30° 0' 41.997 N	94° 17' 52.696 W	13,945,311.25	3,456,277.62
7,754.00	0.13	208.60	7,753.29	-42.70	-34.45	30° 0' 41.994 N	94° 17' 52.697 W	13,945,310.99	3,456,277.58
7,850.00	0.53	265.40	7,849.29	-42.83	-34.95	30° 0' 41.993 N	94° 17' 52.703 W	13,945,310.86	3,456,277.08
7,949.00	0.75	264.57	7,948.28	-42.93	-36.05	30° 0' 41.993 N	94° 17' 52.715 W	13,945,310.76	3,456,275.98
8,135.00	0.62	255.66	8,134.27	-43.29	-38.24	30° 0' 41.990 N	94° 17' 52.740 W	13,945,310.40	3,456,273.79
8,321.00	0.38	253.90	8,320.26	-43.71	-39.80	30° 0' 41.987 N	94° 17' 52.758 W	13,945,309.98	3,456,272.23
8,416.00	0.19	261.71	8,415.26	-43.82	-40.26	30° 0' 41.986 N	94° 17' 52.763 W	13,945,309.87	3,456,271.77
8,497.00	0.32	247.32	8,496.26	-43.93	-40.60	30° 0' 41.985 N	94° 17' 52.767 W	13,945,309.76	3,456,271.43
8,565.00	0.32	247.32	8,564.26	-44.08	-40.95	30° 0' 41.983 N	94° 17' 52.771 W	13,945,309.61	3,456,271.08

Design Report for Bead Farm #3 - 003 ST00BP00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
8,565.00	8,564.26	-44.08	-40.95	Proj. to Bit

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	0.00	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
317.00	2,132.00	01 HAL MWD (MagVarMS) 17 1/2" Hole 317' - 2132'	3_MWD+HRGM+MS
2,181.00	8,497.00	02 HAL MWD (MagVarMS) 12 1/4" Hole 2181' - 8497'	3_MWD+HRGM+MS

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
152.50	152.50	20" Conductor Casing	20	20
2,155.00	2,154.92	13-3/8" Surface Casing	13-3/8	17-1/2
8,548.48	8,547.74	9-5/8" Production Casing	9-5/8	12-1/4

Design Targets

Shape	Target Name	TVD ()	Northing ()	Easting ()	+N/-S	+E/-W	Created	Updated

Design Report for Bead Farm #3 - 003 ST00BP00

Directional Difficulty Index

Average Dogleg over Survey:	0.19 °/100usft	Maximum Dogleg over Survey:	0.77 °/100usft at 1,720.00 usft
Net Tortousity applicable to Plans:	0.19 °/100usft	Directional Difficulty Index:	3.170

Audit Info

North Reference Sheet for Rose Prospect CCS - Bead Farm #3 - 003 ST00BP00

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to (32.52') Nabors X-33 @ 59.52usft (Plan). Northing and Easting are relative to Bead Farm #3

Coordinate System is US State Plane 1983, Texas South Central Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is 99° 0' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:30° 17' 0.000 N°

False Easting: 1,968,500.00usft, False Northing: 13,123,333.33usft, Scale Reduction: 0.99993284

Grid Coordinates of Well: 13,945,353.69 usft N, 3,456,312.03 usft E

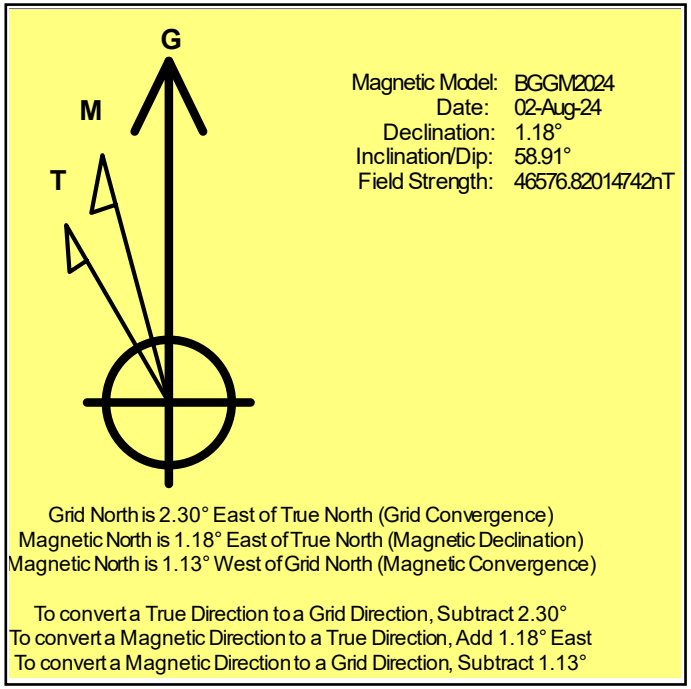
Geographical Coordinates of Well: 30° 00' 42.40" N, 094° 17' 52.29" W

Grid Convergence at Surface is: 2.30°

Based upon Minimum Curvature type calculations, at a Measured Depth of 8,565.00usft

the Bottom Hole Displacement is 60.17usft in the Direction of 222.90° (Grid).

Magnetic Convergence at surface is: 1.13° (2 August 2024, , BGGM2024)



CONFIDENTIAL BUSINESS INFORMATION

Railroad Commission of Texas

PERMIT TO DRILL, RE-COMPLETE, OR RE-ENTER ON REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

CONDITIONS AND INSTRUCTIONS

Permit Invalidation. It is the operator's responsibility to make sure that the permitted location complies with Commission density and spacing rules in effect on the spud date. The permit becomes invalid automatically if, because of a field rule change or the drilling of another well, the stated location is not in compliance with Commission field rules on the spud date. If this occurs, application for an exception to Statewide Rules 37 and 38 must be made and a special permit granted prior to spudding. Failure to do so may result in an allowable not being assigned and/or enforcement procedures being initiated.

Notice Requirements. Per H.B 630, signed May 8, 2007, the operator is required to provide notice to the surface owner no later than the 15th business day after the Commission issues a permit to drill. Please refer to subchapter Q Sec. 91.751-91.755 of the Texas Natural Resources Code for applicability.

Permit expiration. This permit expires two (2) years from the date of issuance shown on the original permit. The permit period will not be extended.

Drilling Permit Number. The drilling permit number shown on the permit MUST be given as a reference with any notification to the district (see below), correspondence, or application concerning this permit.

Rule 37 Exception Permits. This Statewide Rule 37 exception permit is granted under either provision Rule 37 (h)(2)(A) or 37(h)(2)(B). Be advised that a permit granted under Rule 37(h)(2)(A), notice of application, is subject to the General Rules of Practice and Procedures and if a protest is received under Section 1.3, "Filing of Documents," and/or Section 1.4, "Computation of Time," the permit may be deemed invalid.

Before Drilling

Fresh Water Sand Protection. The operator must set and cement sufficient surface casing to protect all usable-quality water, as defined by the Railroad Commission of Texas (RRC) Groundwater Advisory Unit (GWAU). Before drilling a well, the operator must obtain a letter from the Railroad Commission of Texas stating the depth to which water needs protection, Write: Railroad Commission of Texas, Groundwater Advisory Unit (GWAU), P.O. Box 12967, Austin, TX 78711-3087. File a copy of the letter with the appropriate district office.

Accessing the Well Site. If an OPERATOR, well equipment TRANSPORTER or WELL service provider must access the well site from a roadway on the state highway system (Interstate, U.S. Highway, State Highway, Farm-to-Market Road, Ranch-to-Market Road, etc.), an access permit is required from TxDOT. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

Water Transport to Well Site. If an operator intends to transport water to the well site through a temporary pipeline laid above ground on the state's right-of-way, an additional TxDOT permit is required. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

*NOTIFICATION

The operator is **REQUIRED** to notify the district office when setting surface casing, intermediate casing, and production casing, or when plugging a dry hole. The district office **MUST** also be notified if the operator intends to re-enter a plugged well or re-complete a well into a different regulatory field. Time requirements are given below. The drilling permit number **MUST** be given with such notifications.

During Drilling

Permit at Drilling Site. A copy of the Form W-1 Drilling Permit Application, the location plat, a copy of Statewide Rule 13 alternate surface casing setting depth approval from the district office, if applicable, and this drilling permit must be kept at the permitted well site throughout drilling operations.

***Notification of Setting Casing.** The operator MUST call in notification to the appropriate district office (phone number shown the on permit) a minimum of eight (8) hours prior to the setting of surface casing, intermediate casing, AND production casing. The individual giving notification MUST be able to advise the district office of the drilling permit number.

***Notification of Re-completion/Re-entry.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of eight (8) hours prior to the initiation of drilling or re-completion operations. The individual giving notification MUST be able to advise the district office of the drilling permit number.

Completion and Plugging Reports

Hydraulic Fracture Stimulation using Diesel Fuel: Most operators in Texas do not use diesel fuel in hydraulic fracturing fluids. Section 322 of the Energy Policy Act of 2005 amended the Underground Injection Control (UIC) portion of the federal Safe Drinking Water Act (42 USC 300h(d)) to define "underground Injection" to *EXCLUDE* " ...the underground injection of fluids or propping agents (*other than diesel fuels*) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities." (italic and underlining added.) Therefore, hydraulic fracturing may be subject to regulation under the federal UIC regulations if diesel fuel is injected or used as a propping agent. EPA defined "diesel fuel" using the following five (5) Chemical Abstract Service numbers: 68334-30-5 Primary Name: Fuels, diesel; 68476-34-6 Primary Name: Fuels, diesel, No. 2; 68476-30-2 Primary Name: Fuel oil No. 2; 68476-31-3 Primary Name: Fuel oil, No. 4; and 8008-20-6 Primary Name: Kerosene. As a result, an injection well permit would be required before performing hydraulic fracture stimulation using diesel fuel as defined by EPA on any well in Texas. Hydraulic fracture stimulation using diesel fuel as defined by EPA on a well in Texas without an injection well permit could result in enforcement action.

Producing Well. Statewide Rule 16 states that the operator of a well shall file with the Commission the appropriate completion report within ninety (90) days after completion of the well or within one hundred and fifty (150) days after the date on which the drilling operation is completed, whichever is earlier. Completion of the well in a field authorized by this permit voids the permit for all other fields included in the permit unless the operator indicates on the initial completion report that the well is to be a dual or multiple completion and promptly submits an application for multiple completion. All zones are required to be completed before the expiration date on the existing permit. Statewide Rule 40(d) requires that upon successful completion of a well in the same reservoir as any other well previously assigned the same acreage, proration plats and P-15s or P-16s (if required) or a lease plat and P-16 must be submitted with no double assignment of acreage unless authorized by rule.

Dry or Noncommercial Hole. Statewide Rule 14(b)(2) prohibits suspension of operations on each dry or non-commercial well without plugging unless the hole is cased and the casing is cemented in compliance with Commission rules. If properly cased, Statewide Rule 14(b)(2) requires that plugging operations must begin within a period of one (1) year after drilling or operations have ceased. Plugging operations must proceed with due diligence until completed. An extension to the one-year plugging requirement may be granted under the provisions stated in Statewide Rule 14(b)(2).

Intention to Plug. The operator must file a Form W-3A (Notice of Intention to Plug and Abandon) with the district office at least five (5) days prior to beginning plugging operations. If, however, a drilling rig is already at work on location and ready to begin plugging operations, the district director or the director's delegate may waive this requirement upon request, and verbally approve the proposed plugging procedures.

***Notification of Plugging a Dry Hole.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of four (4) hours prior to beginning plugging operations. The individual giving the notification MUST be able to advise the district office of the drilling permit number and all water protection depths for that location as stated in the Groundwater Advisory Unit letter.

DIRECT INQUIRIES TO: DRILLING PERMIT SECTION, OIL AND GAS DIVISION

PHONE
(512) 463-6751

MAIL:
PO Box 12967
Austin, Texas, 78711-2967

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER	DATE PERMIT ISSUED OR AMENDED	DISTRICT
898450	Apr 17, 2024	* 03
API NUMBER	**FORM W-1 RECEIVED**	**COUNTY**
42-245-32912	Mar 27, 2024	JEFFERSON
TYPE OF OPERATION	**WELLBORE PROFILE(S)**	**ACRES**
NEW DRILL	Vertical	650

OPERATOR 101256

EXXONMOBIL LOW C SOL ON STOR LLC

ATTN EDWARD E GRAHAM
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389

NOTICE

This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored.

District Office Telephone No:
(713) 869-5001

LEASE NAME	WELL NUMBER
BEAD FARM	3
LOCATION	**TOTAL DEPTH**
3.35 miles SE direction from CHINA	10000

Section, Block and/or Survey

SECTION 8 BLOCK ABSTRACT 658

SURVEY HT&B RR CO/TURNER, D C

DISTANCE TO SURVEY LINES	DISTANCE TO NEAREST LEASE LINE
1742 ft. WEST 2937 ft. NORTH	ft.
DISTANCE TO LEASE LINES	**DISTANCE TO NEAREST WELL ON LEASE**
1742 ft. WEST 2937 ft. NORTH	See FIELD(s) Below

FIELD(s) and LIMITATIONS:

* SEE FIELD DISTRICT FOR REPORTING PURPOSES *

FIELD NAME / LEASE NAME	ACRES / NEAREST LEASE	DEPTH	WELL # / NEAREST WE	DIST
WILDCAT	650.00	8,600	3	03
BEAD FARM			0	

RESTRICTIONS: For exploratory test only

THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS

This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.

This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

SWR #13 Formation Data

JEFFERSON (245) County

Formation	Remarks	Geological Order	Effective Date
LAFAYETTE	disposal	1	12/17/2013
CAPROCK	disposal	2	12/17/2013
SPINDLETOP SALT DOME	disposal	3	12/17/2013
FANNETT SALT DOME	disposal	4	12/17/2013
BIG HILL SALT DOME	disposal	5	12/17/2013
PLEISTOCENE-LISSIE	disposal	6	12/17/2013
MIOCENE	disposal	7	12/17/2013
FRIO	disposal	8	12/17/2013
MARINULINA	disposal	9	12/17/2013
HETEROSTEGINA	disposal	10	12/17/2013

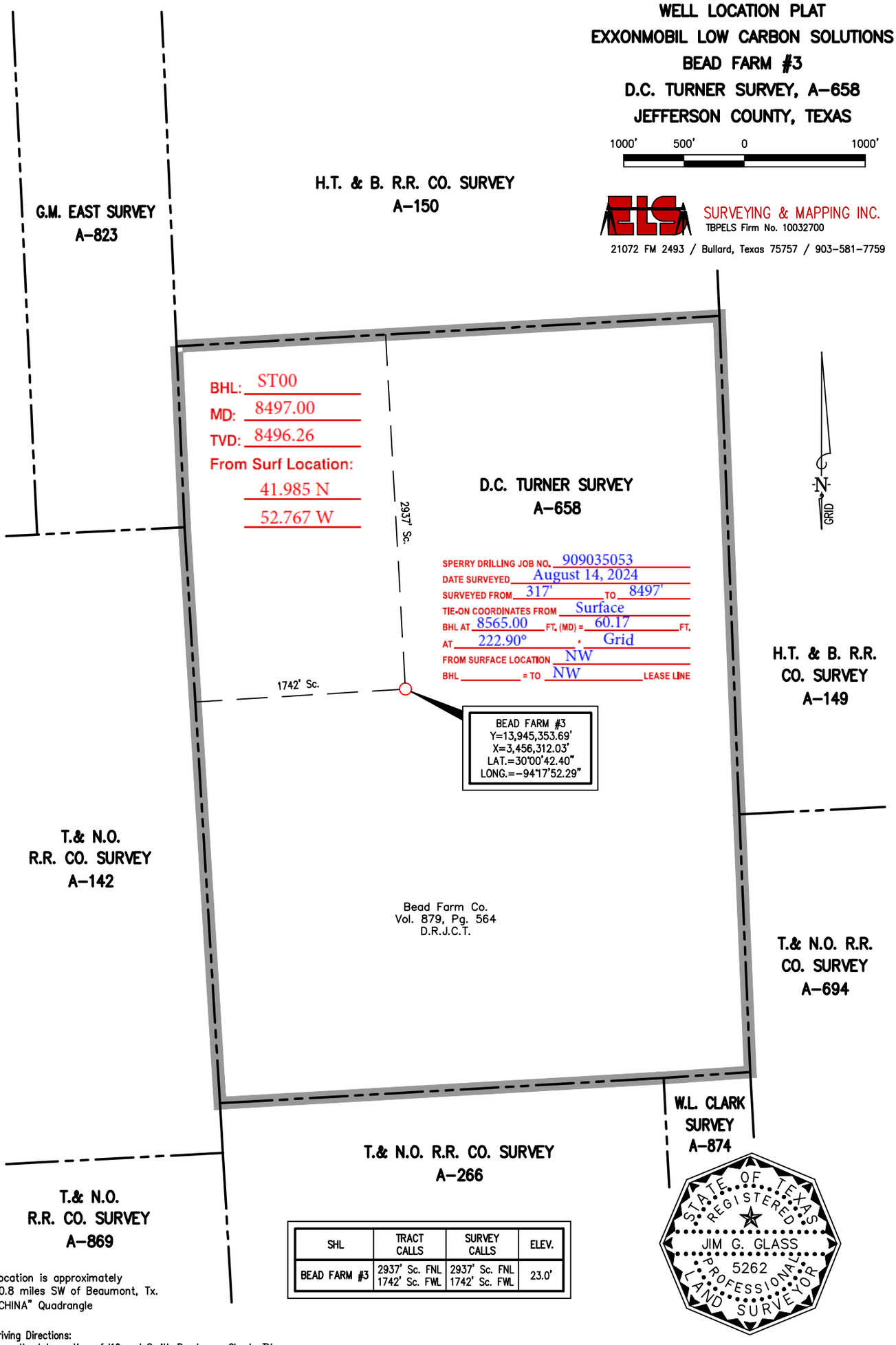
The above list may not be all inclusive, and may also include formations that do not intersect all wellbores. The listing order of the Formation information reflects the general stratigraphic order and relative geologic age. This is a dynamic list subject to updates and revisions. It is the operator's responsibility to make sure that at the time of spudding the well the most current list is being referenced. Refer to the RRC website at the following address for the most recent information.
http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info

CONFIDENTIAL BUSINESS INFORMATION

WELL LOCATION PLAT
EXXONMOBIL LOW CARBON SOLUTIONS
BEAD FARM #3
D.C. TURNER SURVEY, A-658
JEFFERSON COUNTY, TEXAS

1000' 500' 0 1000'

SURVEYING & MAPPING INC.
TBPELS Firm No. 10032700
21072 FM 2493 / Bullard, Texas 75757 / 903-581-7759



SHL	TRACT CALLS	SURVEY CALLS	ELEV.
BEAD FARM #3	2937' Sc. FNL 1742' Sc. FWL	2937' Sc. FNL 1742' Sc. FWL	23.0'

Location is approximately 10.8 miles SW of Beaumont, Tx. "CHINA" Quadrangle

Driving Directions:
From the Intersection of I10 and Smith Road near Cheek, TX, go Northwest on Smith Road, .8 miles turn left (West) Kidd Road. Go 1.6 miles turn right (North) on Boyt Road. Go 1.1 miles stay straight (West) on Lawhon Rd. Go 2.8 miles turn right (North) on Green Pond Gully Road Go 0.8 miles. Turn Left (Northwest). Drive on location.

DATE SURVEYED: 8/23/2023-8/28/2023

Location is staked from tract lines as evidenced by occupation, information obtained from the Tx. R.R.C and provided deed records. Distances shown are not intended to be definitive in establishing actual title boundaries. The deed data and tract acreages shown hereon were furnished by others. This is not a title survey. Vesting documents may not have been provided. Bearings and distances are based on the Texas State Plane Coordinate System N.A.D. 83 (2011) (South Central Zone) derived from GPS Observations.

LEGEND
= TRACT LINE
= SURVEY LINE
= PROPOSED WELL

STATE OF TEXAS REGISTERED JIM G. GLASS 5262 PROFESSIONAL LAND SURVEYOR

FOR THE EXCLUSIVE USE OF
EXXONMOBIL LOW CARBON SOLUTIONS

STATE OF TEXAS - - - COUNTY OF SMITH
I, Jim G. Glass, Registered Professional Land Surveyor, do hereby certify the above plat to be true and correct to the best of my knowledge.
Date: April 9, 2024 Bullard, Texas
E.L.S. Surveying & Mapping, Inc.

Registered Professional Land Surveyor No. 5262

Drafter: ECJ FB 2744/88-97 Job No. 430923 Map No. J-0923-LOC-INJ3C

CONFIDENTIAL BUSINESS INFORMATION

CHRISTI CRADDICK, CHAIRMAN
WAYNE CHRISTIAN, COMMISSIONER
JIM WRIGHT, COMMISSIONER



DANNY SORRELLS
DIRECTOR, OIL AND GAS DIVISION

PETER FISHER, P.G.
DISTRICT DIRECTOR

RAILROAD COMMISSION OF TEXAS

OIL AND GAS DIVISION

OPERATOR Name:	EXXONMOBIL LOW C SOL ON	**RE:**	**Lease:**	Bead Farm Co.
Address1:	ATTN EDWARD E GRAHAM W1.2B.02			
Address2:	22777 SPRINGWOODS VILLAGE PKWY	**Well No:**	3	
City:	SPRING	**Sec:**	8	**Block:**
State:	TX	**County:**	JEFFERSON	
		Survey Name:	HT&B RR CO/TURNER, D C	

SWR13EX Application Number: 130364 **Drilling Permit No:**

SWR 13 CASING EXCEPTION APPLICATION/ALTERNATIVE REQUEST APPROVED

The Proposed Casing and Cementing Program submitted for **LEASE** Bead Farm Co. ;
WELL 3 has been approved by the Railroad Commission of Texas District Office.

a. A copy of this approved letter must be kept on location during all phases of drilling and/or plugging operations. Once approved, changes CANNOT be made to the Proposed Casing Program on the original application without additional approval from the Railroad Commission of Texas District Office.

b. Any substantive modifications to the cement program require prior approval from the Railroad Commission of Texas District Office, and may require re-submission of the SWR 13 (Statewide Rule 13) Alternate Surface Casing Application. Contact the Railroad Commission of Texas District Office for more information.

c. The tail slurry must be sufficient to fill the Zone of Critical Cement as described in Statewide Rule 13(b)(1)(H)(i). In addition, all cement slurries must be mixed on location as described in Application for Alternate Surface Casing Program.

d. The casing and cement program shall adhere to the following specifications:

Set 2170 feet of surface casing and circulate cement from the shoe to the ground surface.

DP 898450 - Exxonmobil, Bead Farm Co. Lease Well 3 (245 32912)

IF CEMENT IS NOT CIRCULATED TO THE GROUND SURFACE AS REQUIRED BY THIS EXCEPTION, YOU MUST CONTACT THE RAILROAD COMMISSION OF TEXAS DISTRICT OFFICE IMMEDIATELY AND FOLLOW THE PROCEDURES SET OUT IN RULE 13(b)(1)(H)(iii) OR AS REQUIRED BY THE RAILROAD COMMISSION OF TEXAS DISTRICT OFFICE.

CONFIDENTIAL BUSINESS INFORMATION

You must comply with all other provisions of SWR 13 (Statewide Rule 13) and a representative of the cementing company who performs the cementing job for the protection of usable quality water strata must sign the Form W-15 attesting to the information regarding cementing operations performed; including circulation of cement. (Note: If surface casing is set below the approved depth, this can result in denial of future Statewide Rule 13(b)(1)(H)(i) requests.) A condition of the approved drilling permit requires notification to the Railroad Commission of Texas District Office eight (8) hours prior to the time casing is to be set/cemented in the well. If your exception request was submitted after the subject well has been drilled and completed, the operator may be referred for enforcement action.

This authorization shall expire within five (5) years from the date the Groundwater Protection Determination was issued, or at the expiration of the drilling permit (if the well is not spudded prior to expiration) for the referenced well, whichever occurs first. Furthermore, this authorization supersedes any prior authorizations issued for the referenced well.

This exception is based on information provided when the application was submitted 05/20/2024 .
If any information has changed, you must contact the appropriate Railroad Commission of Texas District Office, and submit a new application if applicable. If you have questions, please contact the appropriate Oil and Gas District office.

RRC APPROVAL BY: AUDREY KUKLENZ DATE: 05/20/2024

PETER FISHER, P.G.

DISTRICT DIRECTOR

Appendix D.2: Coring and Logging Plan for Stratigraphic Well Bead Farm Co. #1

Claimed as PBI

Claimed as PBI

Claimed as PBI

Claimed as PBI

Claimed as PBI

Claimed as PBI

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Appendix D.3: Stimulation Program

The Stimulation Program is provided in this package as Railroad Commission of Texas Attachment C.

Appendix D.4: Material Selection

Claimed as PBI

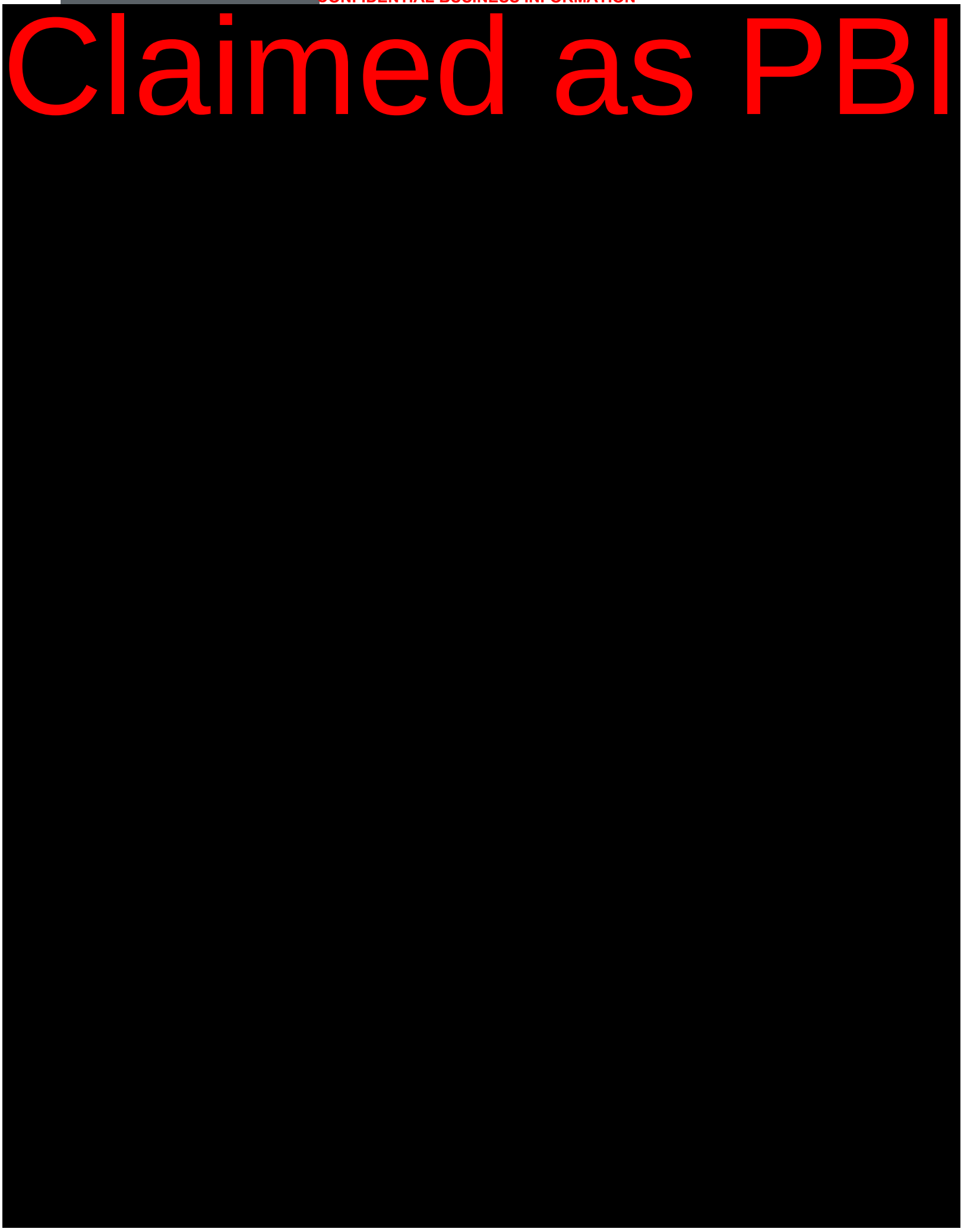
Claimed as PBI

Claimed as PBI

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[redacted] CONFIDENTIAL BUSINESS INFORMATION



Claimed as PBI

Railroad Commission of Texas Attachment C

Stimulation Plan

Appendix D.3: Stimulation Program

Rose CCS Project Stimulation Plan

1. Facility Information 1
2. Introduction and Purpose 1
2.1. Purpose of the Stimulation 2
3. Stimulation Fluids 2
3.1. Additives 3
3.2. Diverters 3
4. Mechanical Stimulation 3
5. Ensuring Containment 3
6. Stimulation Procedures 4

1. Facility Information

Facility name: ROSE CCS PROJECT
INJECTION WELL NOS. 1 - 3

Well locations: JEFFERSON COUNTY, TX

Stimulation to enhance the injectivity potential of the injection zone may be necessary. Stimulation may involve but is not limited to flowing fluids into or out of the well, increasing or connecting pore spaces in the injection formation, or other activities that are intended to allow the injectate to move more readily into the injection formation. Advance notice of all proposed stimulation activities must be provided to the Director, as detailed below, prior to conducting the stimulation. The permittee must describe any fluids to be utilized for stimulation activities and the permittee must demonstrate that the stimulation will not interfere with containment. The permittee must submit proposed procedures for all stimulation activities to the Director in writing at least 30 days in advance, per 40 CFR 146.91(d)(2). Within the 30-day notice period, EPA may: deny the stimulation; approve the stimulation as proposed; or approve the stimulation with conditions. The permittee must carry out the stimulation procedures, including any conditions, as approved or set forth by EPA.

2. Introduction and Purpose

ExxonMobil may stimulate the injection zones for the Rose CCS Project to enhance the injectivity potential of CO2 injection wells. Stimulation may involve, but is not limited to, flowing fluids into or out of the well, increasing or connecting pore spaces in the injection formation, or other activities that are intended to allow CO2 to move more readily into the injection zone.

ExxonMobil will adhere to all applicable regulatory requirements for any stimulation treatment that may be required. Specifically, and without limitation, ExxonMobil will comply with the following:

- 40 CFR 146.82(a)(9): ExxonMobil will submit the proposed stimulation program, a description of stimulation fluids to be used and a determination that stimulation will not interfere with containment.
- 40 CFR 146.88(a): Except during stimulation, ExxonMobil will ensure that injection pressure does not exceed 90 percent of the fracture pressure of the injection zone(s) so as to ensure that the injection does not initiate new fractures or propagate existing fractures in the injection zones(s). In no case will injection pressure initiate fractures in the confining zones(s) or cause movement of injection or formation fluids that endanger USDW.
- 40 CFR 146.9l(d)(2) and (e): ExxonMobil will notify the Director in writing 30 days in advance of any planned stimulation activities, other than stimulation for formation testing conducted under 40 CFR 146.82. Regardless of whether a state has primary enforcement responsibility, ExxonMobil shall submit all required reports, submittals, and notifications under subpart h of this part to EPA in an electronic format approved by EPA.

The information provided in this section specifically addresses the stimulation fluids, additives, and proposed stimulation procedures ExxonMobil may implement. This plan includes multiple stimulation methodologies that may be selected based on site-specific technical and operational conditions that may impact future well performance. The methods provided below may also be used to remediate scaling or perforation occlusion in the well.

2.1. Purpose of the Stimulation

Perforated intervals in the proposed injection zones may require stimulation periodically throughout the project life to enhance performance with the aim of restoring it to initial or optimum conditions. For example, stimulation may be needed to remediate injectivity loss resulting from mineral scales, clay fragments, metallic sulfide, or oxide particulates. Stimulation may also be necessary to remove any near-wellbore damage resulting from drilling and completion operations. Following well construction, remedial stimulation may be conducted before the commencement of CO2 injection..

3. Stimulation Fluids

ExxonMobil will use acid blends for matrix stimulation that are typical for the industry. These include, but are not limited to, mixtures of acetic, hydrochloric, hydrofluoric, and/or other organic acids. These blends have been historically proven to remove near-wellbore damage caused by mineral scales, drilling muds, completion fluids, and clay fines while minimizing negative impacts

to permeability. There is also potential for near-wellbore halite precipitation in the CO2 injectors, which may require remediation by periodic flushes with less saline water.

All chemical treatments will be evaluated and selected for compatibility with the treatment method. For example, mineral acids will be treated with chemical inhibitors to prevent corrosion damage to the tubing string. In addition, chemical systems will be evaluated and selected to avoid damage to the downhole packer sealing elements, casing, and other seals within the injection system that might be exposed to the chemicals.

3.1. Additives

Additives may be utilized with the stimulation fluids to aid matrix stimulation while mitigating corrosion of tubulars and potential damage to the sequestration zone. These additives include, but are not limited to, corrosion or acid inhibitors, scale inhibitors, clay stabilizers, biocides, emulsifiers, chelating agents, mutual solvents, iron sequestrants, retarders, and/or surfactants. Compatibility of these additives with the stimulation fluids, tubulars and the reservoir will be confirmed prior to their use in any stimulation activities

3.2. Diverters

Nitrogen, crosslink polymers, viscoelastic surfactants, solid particulates and/or fiber diverters may be added to stimulation fluids to achieve improved diversion and effective treatment for the target zone by diverting the stimulation fluids to the most impaired (i.e., low injectivity) perforations. Depending on the well-specific requirements and stimulation design, organic or polymeric diverting agents may also be selected. These diverters provide temporary restrictions during stimulation operations and degrade or break-down with time due to water solubility and temperature. The most suitable diverting agent will be selected based on one or more factors, including, anticipated pump rates, the length of the perforated interval, perforation density, and the selected technique for conveying acid to the injection zone (e.g., pumping through regular tubing or pumping down coiled tubing).

4. Mechanical Stimulation

In addition to chemical stimulation, mechanical stimulation of the well may be required independently, or in conjunction with chemical stimulation. Mechanical stimulation may be required if there is deposition that cannot be easily remediated with chemicals, or if mechanical means may be more effective. These mechanical options include, but are not limited to, backflow, adding perforations, or re-perforating. Perforating operations may be further enhanced with the use of propellants. Propellant stimulations will be designed for nominal height growth, and to remain within the injection zone and avoid fracture growth into the confining layer.

5. Ensuring Containment

Except during stimulation, injection pressure will not exceed 90% of the established fracture pressure for the injection zone. Injection pressure at the downhole tubing pressure gauge and tubing/annulus surface gauges will be continuously monitored during the stimulation operation. Stimulation of the injection interval will be conducted to avoid affecting the confining layers. .

6. Stimulation Procedures

A standard stimulation procedure is outlined below. This procedure may be modified depending on site-specific operational and technical conditions and the specific treatment requirements. The conveyance methods may include coil tubing, tubing-conveyed retrievable straddle packer assembly, snubbing unit, tubing flush, or bullheading.

1. Determine compatibility of stimulation chemicals with well materials, reservoir rock, and fluids.
2. Develop stimulation plan based on the injection impairment cause
3. Provide work procedure and stimulation program to the UIC Program Director in writing at least 30-days prior to the planned date for start of the work (40 CFR 146.91(d)(2)).
4. Prepare wellsite and mobilize equipment
5. Shut-in and isolate the well from the CO2 injection system. Allow the pressures to stabilize
8. Rig up the stimulation equipment.
9. Prepare the well for stimulation.
10. Perform the stimulation treatment as per approved plan.
11. Flush the wellbore with treated water and prepare the well to return to normal operation
12. Rig down and return the well back to injection

Railroad Commission of Texas Attachment D

Pre-Injection/Pre-Operational Testing Plan

Completion Stage	Completion Years after Startup	Injection Duration (years)	Top Depth TVDSS (ft)	Bottom Depth TVDSS (ft)	Net Reservoir (ft)
Upper Frio Sand	2.00	2.00	7,163	7,348	185
Upper Frio Sand	4.00	2.00	6,938	7,122	164
Fleming Sand 3	6.00	2.00	5,561	5,922	120
Fleming Sand 3	8.00	2.00	5,131	5,492	223
Fleming Sand 2	10.00	2.00	4,187	4,766	186
Fleming Sand 1	12.00	1.00	3,472	3,932	293
TVDSS = True Vertical Depth Subsea					

Table 4-23: Injection Intervals for Injection Well No. 02

Completion Stage	Completion Years after Startup	Injection Duration (years)	Top Depth TVDSS (ft)	Bottom Depth TVDSS (ft)	Net Reservoir (ft)
Upper Frio Sand	0.00	2.00	7,540	8,160	327
Upper Frio Sand	2.00	2.00	7,163	7,435	251
Upper Frio Sand	4.00	2.00	6,933	7,142	125
Fleming Sand 3	6.00	2.00	5,670	6,094	289
Fleming Sand 3	8.00	2.00	5,030	5,503	165
Fleming Sand 2	10.00	2.00	4,337	4,916	255
Fleming Sand 1	12.00	1.00	3,481	4,014	335
TVDSS = True Vertical Depth Subsea					

Table 4-24: Injection Intervals for Injection Well No. 03

Completion Stage	Completion Years after Startup	Injection Duration (years)	Top Depth TVDSS (ft)	Bottom Depth TVDSS (ft)	Net Reservoir (ft)
Upper Frio Sand	0.00	2.00	7,332	7,986	382
Upper Frio Sand	2.00	2.00	7,011	7,265	212
Upper Frio Sand	4.00	2.00	6,778	6,985	143
Fleming Sand 3	6.00	2.00	5,509	5,896	185
Fleming Sand 3	8.00	2.00	5,055	5,458	219
Fleming Sand 2	10.00	2.00	4,146	4,665	163
Fleming Sand 1	12.00	1.00	3,382	3,893	229
TVDSS = True Vertical Depth Subsea					

4.4 Pre-Operational Testing Plan

The scope of the pre-operational testing plan included geophysical and core data collection in the stratigraphic well, fluid sampling at target intervals, and pressure testing to assess the injection intervals. The Testing and Monitoring Plan (Section 5 – Testing and Monitoring Plan) provides the data collection activities for the pre-operational phase and the operational phase of the Project. A summary of that discussion is provided below for ease of review, with reference to the complete discussion in Section 5 for the pre-operational testing plan.

4.4.1 Tests During Well Drilling and Construction

A variety of geophysical well logs were collected during the construction of the stratigraphic well to verify and evaluate further the depth, thickness, porosity, permeability, lithology, and formation fluid salinity in the relevant geologic formations. Data collected from the stratigraphic well was also used to appropriately construct the injection wells and provide data to verify the design for mechanical integrity purposes.

The drilling procedure in Appendix D.2 discusses the detailed coring procedures for the stratigraphic well (Bead Farm Co. #1). The coring depths, formations, and footages for full core samples are provided in Table 4-25. The cores taken from the stratigraphic well were near the injection wells and represent the properties of the injection and confining zones near the injection wells. Data acquisition from the stratigraphic well included sufficient and representative information on the injection and confining zones porosities, permeabilities, petrologies, and mineralogies.

Table 4-25: Summary of Full Core Sample Depths from Stratigraphic and Injection Well

Interval	Bead Farm Co #1		Labelle Properties Ltd. #1		Bead Farm Co #2		Bead Farm #3	
	(ft TVD)	Footage (ft)	(ft TVD)	Footage (ft)	(ft TVD)	Footage (ft)	(ft TVD)	Footage (ft)
Fleming Sand Seal Complex	3,092	110	-	-	3,120	31	3,333	60
Fleming Sand 1	-	-	3,565	28	-	-	3,503	68
Fleming Sand Shale 2	4,060	60	-	-	-	-		-
Fleming Sand 2	4,456	32	-	-	4,350	53	-	-
Fleming Sand 3	5,186	31	-	-	-	-	-	-
Anahuac Seal	6,266	36	-	-	-	-	-	-
Upper Frio	7,255	54	7,481	56	7,586	60	7,770	44

4.4.2 Injection and Confining Zone Core Sampling

During the drilling and completion of the injection wells, a subset of the stratigraphic well's logging and coring data collection plan were used to verify certain key parameters for injection well performance and AoR modeling. The following geophysical logs were run for each injection well. The open-hole logging plan is detailed in Table 4-26. The cased-hole logging plan is detailed in Table 4-27.

Table 4-26: Open-Hole Logging Plan for Injection Wells No. 01, No. 02, and No. 03

Section	Open-Hole Logs	Injection Well No. 01 ft TVD KB	Injection Well No. 02 ft TVD KB	Injection Well No. 03 ft TVD KB
17-1/2 in. hole	• Gamma Ray • Resistivity • Spontaneous Potential • Caliper	0–2,203	0–2,244	0–2,155
12-1/4 in. hole	• Gamma Ray • Resistivity • Density • Neutron • Magnetic Resonance • Dipole Sonic • Borehole Imaging • Caliper • Formation Pressure • Fluid Samples	2,203–8,654	2,244–8,752	2,155–8,565

Table 4-27: Cased-Hole Logging Plan for Injection Wells No. 01, No. 02, and No. 03

Section	Cased-Hole Logs	Injection Well No. 01 ft TVD KB	Injection Well No. 02	Injection Well No. 03
13-3/8 in. surface casing	• CBL, VDL, Temp,	0–2,203	0–2,244	0–2,155
9-5/8 in. production casing	• CBL, VDL, Temp, • Ultrasonic Casing Inspection	0–8,586	0–8,628	0–8,492
7-in. production tubing and 9-5/8 in.	• Thru-Tubing Casing Inspection • Pulse Neutron / OA	0–8,535	0–8,585	0–8,203
CBL = cement bond log; VDL = Variable Density Log; OA = Oxygen Activation				

4.4.3 Injection Zone Characterization

The injection zone was characterized in detail using the data acquired in the stratigraphic well (Bead Farm Co. #1) and outlined in Appendix D.2. The location of the stratigraphic well relative to the injection wells is provided on Figure 5-3. ExxonMobil collected characterization data for each injection interval of the injection wells including formation fluid temperature, pH, specific conductivity and formation pressure. All target injection formations are 100% brine saturated.

4.4.4 Fracture Pressure, Fluid Characteristics, and Downhole Conditions

ExxonMobil characterized the formation fluids in the injection zone using samples collected from the stratigraphic well. ExxonMobil used these data to evaluate the compatibility of the injectate with the formation fluids in the injection zone. These groundwater samples that were collected during the pre-operation phase of the Project will form the baseline data for comparison with water quality data representing the operating and post-operating phases of the Project. In general, the baseline data established include pressure, temperature, fluid, and physical characteristics present in the injection intervals and above the UCCZ from a single sample event at the stratigraphic well and a routine sampling frequency for the USDW monitoring wells.

The sampling and analysis plan for the water sample collected above the UCCZ at the stratigraphic well is specified in Table 4-28. The USDW monitoring wells were drilled and monitored to provide a representative baseline of geochemical concentrations and pressure conditions in the AoR and surrounding area as described in Section 5 – Testing and Monitoring Plan. The analyses of geochemical and water quality parameters for the groundwater samples from the USDW monitoring wells are specified in Section 5. Similarly, groundwater characterization between the lowest most USDW and the top of the UCCZ was tested and sampled inside the limits of the AoR to establish a representative baseline of geochemical and pressure conditions of the monitoring zone in the local Project area.

Table 4-28: Sampling and Analysis Plan for UCCZ Water Sample Collected from Stratigraphic Well

Parameter/Analyze	Analytical Method
Total dissolved solids, alkalinity, electrical conductivity, temperature, pH	Standard lab analyses
Gas composition (CO2, CH4, O2, N2)	Gas chromatography
Dissolved cations (i.e., Ba, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mn, Mo, Ni, P, K, Si, Na, Sr, V, Zn)	Ion chromatography
Dissolved anions (HCO3, B(OH)4, Br, CO3, Cl, F, I, NO3, NO2, PO4, SO4, S)	Ion chromatography
B(OH)4 = Tetrahydroxyborate; Ba = Barium; Br = Bromide; Ca = Calcium; Cd = Cadmium; CH4 = Methane; Cl = Chloride; CO2 = Carbon dioxide; CO3 = Carbonate; Co = Cobalt; Cr = Chromium; Cu = Copper; F = Fluoride; Fe = Iron; HCO3 = Bicarbonate; I = Iodide; K = Potassium; Li = Lithium; Mg = Magnesium; Mn = Manganese; Mo = Molybdenum; N2 = Nitrogen; Na = Sodium; Ni = Nickel; NO2 = Nitrite; NO3 = Nitrate; O2 = Oxygen; P = Phosphorus; Pb = Lead; PO4 = Phosphate; S = Sulfur; Si = Silicon; SO4 = Sulfate; Sr = Strontium; V = Vanadium; Zn = Zinc.	

The groundwater samples were analyzed in the field for certain physical parameters including temperature, pH, alkalinity, dissolved oxygen, and electrical conductivity. Laboratory-based analyses included total dissolved solids, concentrations of cations, anions, CO2, and methane. Samples for cations and anions will be collected in appropriate acid-washed bottles to eliminate possible contamination.

4.4.5 Injection and Confining Zone Formation Testing

ExxonMobil collected pre-operational formation tests and data logging from the stratigraphic well to provide needed data on the geologic and hydrogeologic properties of subsurface formations. A step-rate test and a pressure fall-off test were performed in three intervals (Upper Frio, Fleming 3, and Fleming 2) at the stratigraphic test well . As an example, Tables 4-29 and 4-30 provide the step-rate injection test and pressure fall-off test parameters for the Fleming 2

interval. A discussion of all injectivity tests performed at the stratigraphic test well are provided in Appendix B.3.

The final rates and durations for each test are made during the operation based on real-time downhole pressure data, ensuring that sufficient time is allowed for downhole stabilization at each rate. No minimum hold time is explicitly prescribed, as it depends on individual well performance. The target injection intervals were found to be exceptionally productive and exhibited very low pressure response to the injection rate. Therefore, it was necessary to ramp up quickly to build the amplitude of pressure disturbance needed to monitor and analyze the performance.

Table 4-29: Step-Rate Injection Test in Fleming 2 at the Stratigraphic Well

Claimed as PBI

Table 4-30: Pressure Fall-Off Test in Fleming 2 at the Stratigraphic Well

Claimed as PBI

Pressure transient well testing (e.g., a pressure fall-off test) was completed in the stratigraphic well and in each of the injection wells as a part of completion activities. These tests are intended to confirm reservoir and operational parameters used in the permitting process and provide needed data on the geologic and hydrogeologic properties of subsurface formations. The following injection well fall-off pressure test procedures were completed:

- A non-hazardous test fluid was completed during the injection test.
- Injection Well Fall-Off Pressure Test:

- The purpose of this test is to evaluate the injectivity index, skin, and permeability-thickness of the injection intervals.
- For each injection zone, an injectivity test was performed.
- The wells were shut-in and pressure fall-off was recorded with downhole gauges over sufficient time for proper analysis.

4.4.6 Quality Assurance Surveillance Plan

ExxonMobil developed the Quality Assurance Surveillance Plan (QASP) in Appendix E in this application as a supplement to the testing and monitoring requirements of this section as well as Section 5 – Testing and Monitoring Plan and Section 7 – Post-Inject Site Care and Site Closure Plan. The goal of the QASP is to provide reliable data to verify that the Project is operating as permitted without endangerment to USDWs. The QASP provides a verifiable set of standards and controls that include the technologies, methodologies, frequencies, sample quality assurance, and procedures to demonstrate the collection data activities will provide accurate and reliable information about the Project operations. The QASP is unique to the Project, informed by site-specific details, monitoring technologies selected, and will be updated as the Project evolves in concert with the Testing and Monitoring Plan.

4.5 Injection Well Operating Strategy

4.5.1 Injection Rate and Pressure

Table 4-31 provides the proposed operations for the injection wells including injection rate and pressure by well. The maximum injection rates for the injection intervals of each well ranges from 0.73 to 1.67 MMta. The average injection rate range is from 0.73 to 1.67 MMta. Both the maximum and average injection rates are predicted to result in reservoir pressure rises that are below 90% of the critical fracture pressure, shown in Table 4-31. Both the injection rates and pressures are within the operating window of the injection wells.

Table 4-31: Summary of Injection Parameters for Injection Wells No. 01, No. 02, and No. 03

Stage	Stage	Parameter	Injection Well No. 01	Injection Well No. 02	Injection Well No. 03
1	Frio-1	Maximum Injection Zone Rate (MMta)	1.67	1.67	1.67
		Average Injection Zone Rate (MMta)	1.67	1.67	1.67
		Maximum Allowed BHP (psi)	4,620	4,670	4,553
		Maximum Modeled BHP (psi)	3,720	3,828	3,796
2	Frio-2	Maximum Injection Zone Rate (MMta)	1.67	1.67	1.67
		Average Injection Zone Rate (MMta)	1.67	1.67	1.67
		Maximum Allowed BHP (psi)	4,463	4,463	4,368
		Maximum Modeled BHP (psi)	3,543	3,588	3,518

Railroad Commission of Texas Attachment E

Injection Well Operating Conditions

- The purpose of this test is to evaluate the injectivity index, skin, and permeability-thickness of the injection intervals.
- For each injection zone, an injectivity test was performed.
- The wells were shut-in and pressure fall-off was recorded with downhole gauges over sufficient time for proper analysis.

4.4.6 Quality Assurance Surveillance Plan

ExxonMobil developed the Quality Assurance Surveillance Plan (QASP) in Appendix E in this application as a supplement to the testing and monitoring requirements of this section as well as Section 5 – Testing and Monitoring Plan and Section 7 – Post-Inject Site Care and Site Closure Plan. The goal of the QASP is to provide reliable data to verify that the Project is operating as permitted without endangerment to USDWs. The QASP provides a verifiable set of standards and controls that include the technologies, methodologies, frequencies, sample quality assurance, and procedures to demonstrate the collection data activities will provide accurate and reliable information about the Project operations. The QASP is unique to the Project, informed by site-specific details, monitoring technologies selected, and will be updated as the Project evolves in concert with the Testing and Monitoring Plan.

4.5 Injection Well Operating Strategy

4.5.1 Injection Rate and Pressure

Table 4-31 provides the proposed operations for the injection wells including injection rate and pressure by well. The maximum injection rate for each injection well based on design capacity is 2.5 MMta. The average injection rate range is from 0.73 to 1.67 MMta. The average injection rate profiles are predicted to result in reservoir pressure rises that are below 90% of the critical fracture pressure, shown in Table 4-31. Both the injection rates and pressures are within the operating window of the injection wells.

Table 4-31: Summary of Injection Parameters for Injection Wells No. 01, No. 02, and No. 03

Stage	Stage	Parameter	Injection Well No. 01	Injection Well No. 02	Injection Well No. 03
1	Frio-1	Maximum Injection Zone Rate (MMta)	2.5	2.5	2.5
		Average Injection Zone Rate (MMta)	1.67	1.67	1.67
		Maximum Allowed BHP (psi)	4,620	4,670	4,553
		Maximum Modeled BHP (psi)	3,720	3,828	3,796
2	Frio-2	Maximum Injection Zone Rate (MMta)	2.5	2.5	2.5
		Average Injection Zone Rate (MMta)	1.67	1.67	1.67
		Maximum Allowed BHP (psi)	4,463	4,463	4,368
		Maximum Modeled BHP (psi)	3,543	3,588	3,518

Stage	Stage	Parameter	Injection Well No. 01	Injection Well No. 02	Injection Well No. 03
3	Frio-3	Maximum Injection Zone Rate (MMta)	2.5	2.5	2.5
		Average Injection Zone Rate (MMta)	1.67	1.67	1.67
		Maximum Allowed BHP (psi)	4,323	4,320	4,223
		Maximum Modeled BHP (psi)	3,544	3,482	3,473
4	Fleming 3-1	Maximum Injection Zone Rate (MMta)	2.5	2.5	2.5
		Average Injection Zone Rate (MMta)	1.43	0.94	0.94
		Maximum Allowed BHP (psi)	3,417	3,484	3,386
		Maximum Modeled BHP (psi)	2,825	2,705	2,617
5	Fleming 3-2	Maximum Injection Zone Rate (MMta)	2.5	2.5	2.5
		Average Injection Zone Rate (MMta)	1.43	0.94	0.94
		Maximum Allowed BHP (psi)	3,154	3,092	3,108
		Maximum Modeled BHP (psi)	2,627	2,623	2,568
6	Fleming 2	Maximum Injection Zone Rate (MMta)	2.5	2.5	2.5
		Average Injection Zone Rate (MMta)	1.26	1.26	0.73
		Maximum Allowed BHP (psi)	2,577	2,668	2,551
		Maximum Modeled BHP (psi)	2,140	2,152	2,165
7	Fleming 1	Maximum Injection Zone Rate (MMta)	2.5	2.5	2.5
		Average Injection Zone Rate (MMta)	1.10	1.32	0.88
		Maximum Allowed BHP (psi)	2,107	2,113	2,053
		Maximum Modeled BHP (psi)	1,777	1,868	1,811

The proposed continuous monitoring and recording devices will demonstrate internal mechanical integrity [40 CFR 146.88(e)] and that the well is equipped with shutoffs and safety devices that are linked to final operating limits specified in the permit for each injection well. The anticipated bottomhole injection pressures and interval-specific pressure constraints are shown in Tables 4-32 through 4-34. The injection depths are based on the current geologic model and stratigraphic well results. The injection rate schedule presented in this Application is based on

defined rate limitations without the modeled projections predicting sufficiently high reservoir pressures that result in maximum BHP constraining predicted well operations.

Table 4-32: Injection Pressures and Pressure Constraints by Injection Stage for Injection Well No. 01

Completion Stage	Completion Years after Startup	Top Depth BGL (ft)	Claimed as PBI	Fracture Pressure (psi)	Maximum Allowable BHP (psi)
Upper Frio Sand	0	7,440		5,134	4,620
Upper Frio Sand	2	7,186		4,958	4,463
Upper Frio Sand	4	6,961		4,803	4,323
Fleming Sand 3	6	5,584		3,797	3,417
Fleming Sand 3	8	5,154		3,505	3,154
Fleming Sand 2	10	4,210		2,863	2,577
Fleming Sand 1	12	3,495		2,342	2,107
BGL = below ground level; ft = feet; psi = pounds per square inch					

Table 4-33: Injection Pressures and Pressure Constraints by Injection Stage for Injection Well No. 02

Completion Stage	Completion Years after Startup	Top Depth BGL (ft)	Claimed as PBI	Fracture Pressure (psi)	Maximum Allowable BHP (psi)
Upper Frio Sand	0	7,520		5,189	4,670
Upper Frio Sand	2	7,186		4,958	4,463
Upper Frio Sand	4	6,956		4,800	4,320
Fleming Sand 3	6	5,693		3,871	3,484
Fleming Sand 3	8	5,053		3,436	3,092
Fleming Sand 2	10	4,360		2,965	2,668
Fleming Sand 1	12	3,504		2,348	2,113
BGL = below ground level; ft = feet; psi = pounds per square inch					

Table 4-34: Injection Pressures and Pressure Constraints by Injection Stage for Injection Well No. 03

Completion Stage	Completion Years after Startup	Top Depth BGL (ft)	Claimed as PBI	Fracture Pressure (psi)	Maximum Allowable BHP (psi)
Upper Frio Sand	0	7,331		5,058	4,553
Upper Frio Sand	2	7,034		4,853	4,368
Upper Frio Sand	4	6,801		4,693	4,223
Fleming Sand 3	6	5,532		3,762	3,386
Fleming Sand 3	8	5,078		3,453	3,108
Fleming Sand 2	10	4,169		2,835	2,551
Fleming Sand 1	12	3,405		2,281	2,053
BGL = below ground level; ft = feet; psi = pounds per square inch					

4.5.2 CO2 Volume

ExxonMobil plans to inject approximately 53 million metric tonnes of CO2 over the life of the Project. It is projected that the CO2 will be injected and will remain in a supercritical state through the life of the Project. The Fleming and Upper Frio sands have relatively high porosity and high permeability. These reservoir properties and the lateral extent of the injection zone are projected to allow the system to store significant volumes of CO2 with limited reservoir pressure rise and to result in relatively rapid pressure fall-off upon shut-in. The CO2 volume was determined to meet the requirements of managing the threat of endangerment to USDW.

4.5.3 Annulus Pressure

The annulus pressure will be adjusted to be more than 100 psi above the wellhead injection pressure, with a maximum allowable pressure of 2,750 psi. The minimum annulus pressure is 500 psi, as reported in Section 5 – Testing and Monitoring Plan.

4.5.4 Well Stimulation Procedures

In the event it is necessary to achieved desired injectivity, ExxonMobil may stimulate the injection zone for the Rose CCS Project (Appendix D.3). Stimulation may be conducted if injection impairment is observed during the life of the well. Additional details on the stimulation plan can be found in Appendix D.3. Potential causes for injection reduction are:

- Formation damage (e.g., fines migration, scaling, debris in injection stream)
- Geochemical reactions due to fluid / reservoir incompatibility
- Salt precipitation due to in situ brine vaporization
- Reservoir compartmentalization or facies variation
- Shale swelling
- Others

ExxonMobil, will provide advance notice of the proposed stimulation to the UIC Program Director in writing at least 30 days prior to implementation in accordance with 40 CFR 146.91(d)(2). The detailed stimulation plan is provided in Appendix D and incorporates the following:

- Stimulation design to ensure the treatment will not interfere with containment
- Stimulation fluids detail (e.g., volumes, concentrations, additives)
- Stimulation fluid / well material compatibility analysis
- Well Integrity analysis (e.g., casing / tubing stress analysis)
- Stimulation procedure

The stimulation fluids will be an acid, most likely HCl, or a water-based fluid treated as needed with the necessary chemicals and/or additives to achieve the desired results. Any stimulation would not interfere with the containment of the project. A high-level procedure is as follows and, as mentioned in the paragraph above, a case-specific stimulation plan procedure along with a detailed description of fluids to be used will be provided to the UIC Program Director should a stimulation become necessary:

1. Determine compatibility of stimulation chemicals with well materials, reservoir rock, and fluids.

2. Develop stimulation plan based on the injection impairment cause

3. Provide work procedure and stimulation program to the UIC Program Director in writing at least 30-days prior to the planned date for start of the work (40 CFR 146.91(d)(2)).

4. Prepare wellsite and mobilize equipment

5. Shut-in and isolate the well from the CO2 injection system. Allow the pressures to stabilize

8. Rig up the stimulation equipment.

9. Prepare the well for stimulation.

10. Perform the stimulation treatment as per approved plan.

11. Flush the wellbore with treated water and prepare the well to return to normal operation

12. Rig down and return the well back to injection

4.5.5 CO2 Stream Characteristics

The CO2 stream chemical composition is described in Table 4-10. No solids are expected to be present in the CO2 stream and the composition is >97 mole percent CO2.

In general, unanticipated interactions among the CO2 injectate and the reservoir fluids are not expected that would act to reduce the permeability, porosity, or injectivity of CO2 into the injection intervals over the life of Project. Specific mineralogy and fluid testing were performed on core and fluid samples taken from the stratigraphic well to confirm these conditions prior to issuance of the Class VI permits. This included an assessment of the potential for mineral dissolution or precipitation within the Fleming and Upper Frio injection intervals that could potentially endanger USDWs. As outlined in this section, the current engineering design basis includes corrosion resistant well completion materials selected to provide a high degree of mechanical integrity under future conditions for the formation fluids and CO2 plume. See Section 6.2.5 for a summary of the proposed CO2 compatible cement.

Section 5 – Testing and Monitoring Plan provides a description of the analyses of the CO2 stream for the Project, including tests for potential impurities that may be present and whether such impurities might alter the corrosivity of the injectate downhole. The information provided in Section 5 was based on the expected chemical and physical characteristics of the CO2 stream and will be used to refine the well operating parameters while maintaining compliance with the Class VI permits.

A sample of the CO2 stream will be collected and analyzed for the suite of parameters listed in Table 5-3 prior to commencing injection and throughout injection operations at the proposed frequency. The details of the sampling process and frequency are described in Section 5 for approval by the UIC Program Director.

4.6 Operational Reporting Plan

During the operational phase of the Project, ExxonMobil will report, within 24 hours, a confirmed endangerment to USDWs to the UIC Program Director pursuant to the requirement in 40 CFR 146.88(f)(3); 146.91(c); and 146.94(b)(3), including:

- Evidence that the CO2 plume or pressure front may endanger a USDW or USDWs;
- The non-compliance situation as it relates to a permit condition;
- Apparent malfunction of the injection system;
- Triggering of a shut-off system or a loss of mechanical integrity; or
- A release of CO2 to the atmosphere or biosphere.

ExxonMobil will cease injection and take all steps reasonably necessary to determine whether there may have been a release of CO2 to an unauthorized zone in the event that there is a loss of mechanical integrity.

4.7 Injection Well Construction and Operation Summary

The geologic setting for this Project is ideally situated for carbon sequestration because of the geologic properties of the injection and confining zones and the compatibility of the reservoir fluids with CO2. The Project brings together the proven engineering practices of ExxonMobil in the design of the wells with a state-of-the-art monitoring system and a robust reservoir management strategy. The well designs are engineered to address the potential risks associated with the installation and operation of Class VI injection wells with a primary objective of protecting USDW from the threat of endangerment. The engineering design of the casing setting points, materials, and cement meet and exceed the requirements for Class VI injection well and for the conditions that have been projected for the Project. In addition, the operating strategy is designed to manage the pressure effects of CO2 injection in the injection zones, to use the available pore space to the fullest extent, and to mitigate potential issues through a robust operational and testing and monitoring strategy.

Railroad Commission of Texas Attachment F

Testing and Monitoring Plan

Underground Injection Control – Class VI Permit Application for Rose CCS Project Injection Wells No. 01, No. 02, and No. 03

SECTION 5 – TESTING AND MONITORING PLAN

Rose Carbon Capture and Storage Project

Jefferson County, Texas

ExxonMobil Low Carbon Solutions Onshore Storage LLC

May 2025

SECTION 5 – TESTING AND MONITORING PLAN

TABLE OF CONTENTS

5.0 Testing and Monitoring Plan 5
5.1 Objectives 6
5.2 Overall Strategy and Approach for Testing and Monitoring Plan 6
5.3 Use of Phased and/or Triggered Approach 13
5.4 Mechanical Integrity Test Methods 15
5.4.1 Internal Mechanical Integrity Testing – Annulus Pressure Test 15
5.4.2 External Mechanical Integrity Testing 16
5.4.3 Reporting Results of MIT 17
5.5 Continuous Recording of Operational Parameters During Injection 17
5.5.1 Continuous Monitoring of Injection Rate and Volume 18
5.5.2 Continuous Monitoring of Injection Temperature and Pressure at Injection Well] 18
5.5.3 Continuous Monitoring of Injection Temperature and Pressure in Reservoir 18
5.5.4 Continuous Monitoring of Annular Pressure and Volume (Tank Level) 19
5.5.5 Positive Annular Pressure 19
5.6 Corrosion Monitoring 19
5.6.1 Monitoring Location and Frequency 19
5.6.2 Monitoring of Corrosion Coupon 19
5.6.3 Cement Evaluation and Casing Inspection Logs 20
5.7 Pressure Fall-Off Testing 20
5.7.1 Testing Method 21
5.7.2 Analytical Methods 21
5.7.3 Analytical Plan 23
5.8 CO2 Plume and Pressure Front Tracking 23
5.8.1 Direct Pressure Front Tracking 23
5.8.2 Plume and Pressure Front Tracking Using Indirect Geophysical Techniques 27
5.9 CO2 Plume Tracking Using Groundwater Monitoring Data 29
5.9.1 Phased and Triggered Monitoring 29
5.9.2 Design of the Monitoring Well Network 33
5.9.3 USDW Monitoring Well Construction 33
5.9.4 Summary of Water Well Data for the AoR 34

5.9.5 Construction of In-Zone Monitoring Well and Above-Zone Monitoring Well (Bead Farm Co. #1) 37
5.9.6 Collection and Analysis of Groundwater Samples 38
5.9.7 Injection Interval Monitoring 39
5.9.8 Seismic Monitoring (Induced Seismicity) 40
5.10 Reporting Requirements 40
5.11 Testing Plan Review and Updates 42

List of Tables

Table 5-1: Summary of Monitoring Technologies for Direct and Indirect CO2 Plume and Pressure Front Tracking 11
Table 5-2: Sampling Devices, Locations, and Data Frequencies for Continuous Monitoring 17
Table 5-3: Summary of CO2 Sampling and Analysis Plan 23
Table 5-4: Summary of Phased and/or Triggered Monitoring Program 30
Table 5-5: Summary of USDW Monitoring Well Construction Details 35
Table 5-6: Summary of Available Water Well Completion Details for AoR 35
Table 5-7: General Details for In-Zone and Above-Zone Monitoring Wells 38
Table 5-8: USDW and Above UCCZ Monitoring Sampling Program 38
Table 5-9: Summary of Triggering Events for Notification and Reporting Schedule 41
Table 5-10: Testing and Monitoring Plan Measurements and Frequency 43

List of Figures

Figure 5-1: Summary of the Risk Assessment Process for the Lifecycle of the Project 7
Figure 5-2: TRLs for Selection of Monitoring Technologies 9
Figure 5-3: Staged-Injection Approach to Optimize CO2 Storage 14
Figure 5-4: Location of Pre-Operation Data Collection and USDW Monitoring Wells 25
Figure 5-5: Results from Time-Lapse Surface Seismic at Gulf Coast EOR Field 27

Appendix E – Quality Assurance and Surveillance Plan

Appendix F – Monitoring Well Completion Summary

Appendix F-1: Water Well Location Map for the AoR
Appendix F-2: USDW Monitoring Well No. 01 Schematic
Appendix F-3: USDW Monitoring Well No. 02 Schematic
Appendix F-4: USDW Monitoring Well No. 03 Schematic

Appendix F-5: In-Zone Monitoring Well No. 01 and Above Zone Monitoring Well (Bead Farm Co. #1 Schematics

5.0 Testing and Monitoring Plan

Consistent with the requirements of 40 Code of Federal Regulations (CFR) 146.90, ExxonMobil Low Carbon Solutions Onshore Storage LLC (ExxonMobil) developed a comprehensive Testing and Monitoring Plan (Plan) for the Rose Carbon Capture and Storage (CCS) Project (Project) using a risk-based approach. The data collection included injectate monitoring, corrosion monitoring of the well tubular, mechanical, and cement components; pressure fall-off testing; seismic surveying; well logging; continuous monitoring of injection rate and pressure; groundwater quality monitoring; carbon dioxide (CO2) plume and pressure front tracking. The data generated from implementation of the Plan provides the basis to verify the confinement of the injectate in the permitted injection formations during the active injection phase of the Project. The post-injection phase of monitoring is provided in Section 7 – Post-Injection Site Care (PISC) and Site Closure Plan consistent with the structure of the Underground Injection Control (UIC) Class VI Permit Application for the Project. In conjunction with careful site selection and Area of Review (AoR) delineation, this Plan will be a critical component of the successful operation, PISC, and eventual closure of the Project.

A key feature of the Testing and Monitoring Plan is the alignment between the injection operation plan and the geological site features that determine CO2 plume and pressure front migration. This Plan puts forth a data collection plan to confirm that the injection is consistent with the permit requirements. The Testing and Monitoring Plan also includes a phased/triggered approach for the incremental implementation of testing and monitoring technology, consistent with U.S. Environmental Protection Agency's (EPA's) presentation of phased/triggered monitoring in the *Underground Injection Control (UIC) Program Class VI Well Testing and Monitoring Guidance*, EPA 816-R-13-001 (Mar. 2013) (available at https://www.epa.gov/sites/default/files/2015-07/documents/epa816r13001.pdf). Overall, the risk of underground source of drinking water (USDW) endangerment is mitigated by balancing the increases in CO2 plume and pressure front size with the collection and analysis of data to track migration and assess the potential for leaks through the upper composite confining zone (UCCZ) throughout the life of the project.

ExxonMobil intends for the review process for the Plan and subsequent iterations to continue throughout the life of the Project. An adaptive monitoring approach will be employed whereby monitoring frequency of indirect monitoring technologies listed in Table 5.1 may be decreased based on positive test results. Amendments to the Testing and Monitoring plan will be submitted to the UIC Program Director for approval, incorporated into the permit, and subject to permit modification requirements. Monitoring results will be presented in semiannual reports, wherein data will be evaluated, and any monitoring frequency modification would be justified. Baseline data has been collected and comparisons to the baseline data will be made during the operational period of the Project. The adaptive approach will be applied if the data collected during the injection period shows results within the expected range. An ongoing dialogue between ExxonMobil and the UIC Program Director is envisioned, marked by tying the Plan reviews to the AoR reevaluation frequency in adherence to reporting requirements specified in 40 CFR 146.91 . Consistent with the discussion of AoR reevaluation in Section 3 – Area of Review and Corrective Action Plan, a defined schedule is proposed to address situations where there is a change in the AoR or if other circumstances change, while affording an efficient review process if the AoR reevaluation confirms that the Plan is appropriate as written. In this way, testing and monitoring results that indicate corrective action are required to trigger the mitigation measures identified in the AoR reevaluation (Section 3), and the Emergency and Remedial Response Plan (Section 8), if needed, will be triggered at the appropriate time.

5.1 Objectives

The following objectives were developed for the Testing and Monitoring Plan in alignment with 40 CFR 146.90:

- Use site characterization data, the site geologic conceptual model, and the results of computational modeling to identify areas or issues of potential concern for the Project;
- Consider how possible leakage pathways and uncertainties in confining zone and injection zone properties could affect the AoR boundaries and include this uncertainty in the testing and monitoring strategy;
- Select testing and monitoring strategies and technologies that are tailored to the site-specific risk profile in conformance with the requirements; and
- Identify Project-specific factors to consider or incorporate in evaluating the data collected from the Testing and Monitoring Plan, which may indicate the potential risk to or endangerment of USDW, as well as deviations from permitted conditions.

5.2 Overall Strategy and Approach for Testing and Monitoring Plan

The Class VI Rule requires various testing and monitoring activities to identify potential risks to, and the potential for endangerment of, USDWs. ExxonMobil consulted with the EPA, Region VI UIC Program Director, and the Railroad Commission of Texas (RRC) in pre-application discussions to identify the testing and monitoring activities that were best suited for the Project. The site features that affect the degree of risk and potential for endangerment of a USDW include:

- The integrity of the UCCZ to contain the CO2 plume and pressure front;
- The potential for vertical migration of CO2 and/or brine along faults;
- The occurrence of legacy well penetrations (or “artificial penetrations”) through the UCCZ;
- The potential geomechanical stress induced by the modeled injection pressure;
- The engineering design considerations for wellbore cement, casing/tubing materials of construction and completion; and
- Conformance to the modeled operational targets.

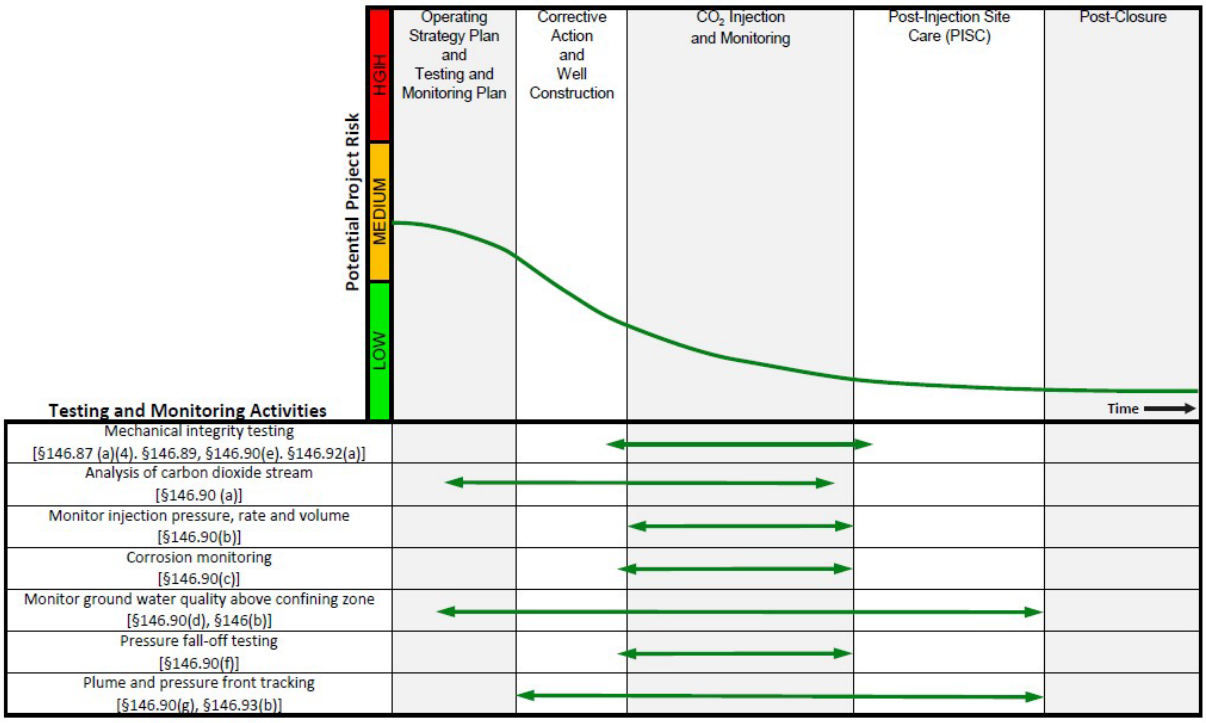
Of these features, the key risk factor that is most critical for the design of this Plan is the potential for legacy well penetrations to create leakage pathways through the UCCZ. ExxonMobil completed a variety of technical tasks discussed in Section 3 ─ Area of Review and Corrective Action Plan, to identify and evaluate the potential for legacy wells to exist in circumstances where CO2/brine could potentially leak up through a partially plugged wellbore (e.g., with open borehole) or one that is inadequately plugged for CO2 sequestration sites. Other potential risks associated with the Project were deemed to be of a lower probability and consequence.

Therefore, a focused testing and monitoring approach was considered reasonable and appropriate to address the following risk scenarios:

- Migration of CO2/brine along a fault/fault material or natural fracture impacting USDW;
- Migration of CO2/brine along a fault/fault material or natural fracture impacting USDW due to fault reactivation;

- CO2/brine leaks up unknown wellbore or one inadequately remediated;
- Induced seismicity;
- Loss of external mechanical integrity, which leads to a release of CO2 from injection wells;
- CO2/brine leaks through seal(s) due to lack of seal continuity/presence;
- Unanticipated structural or stratigraphic baffling creates preferential CO2 plume migration pathways; and
- CO2 composition changes and creates excess injection corrosion or unexpected chemical reactions in the injection zone.

Figure 5-1: Summary of the Risk Assessment Process for the Lifecycle of the Project



As shown in Figure 5-1, the anticipated risk level is medium at the pre-operational phase of the Project and is associated with the site characterization and AoR evaluation findings, before implementation of mitigation measures including injection well placement, injection interval selection, operational limitations, and corrective action for artificial penetrations. The injection well locations and injection intervals were selected to provide separation from geologic features (e.g., faults) that could potentially contribute to CO2 or brine crossflow between the injection zone and USDW. Except during stimulation, the maximum injection pressure will be maintained below 90 percent of the fracture pressure of the injection zone(s) to prevent the initiation of new fractures or propagation of existing fractures per the requirements of 40 CFR 146.88(a). Construction and mechanical integrity testing will be employed to reduce the potential for the loss of external mechanical integrity, which could potentially release CO2. The composition of the injectate stream will be managed and monitored such that unexpected reactions with the potential to impact containment are mitigated. Monitoring and predictive reservoir modeling are

being used to limit the potential for CO2 plume and pressure front migration to encounter artificial penetrations that have the potential for CO2 or brine crossflow from the injection intervals to the lowermost USDW.

The accompanying Class VI Rule testing and monitoring requirements address the potential risk scenarios identified by ExxonMobil as warranting monitoring and testing. Scenarios that were found to have elevated risk will be the subject of corrective action prior to operations. Two artificial penetrations (Bead Farm Co. #1 and Broussard J E Jr-1) are located within or near the five-year CO2 plume and pressure front as shown on Figure 3-25. Corrective action has been performed on these wells and the local areas will be monitored as part of the overall monitoring program described in this section. No additional artificial penetrations that penetrate the UCCZ are located within or near the CO2 plume and pressure front. Therefore, a phased corrective action plan is not warranted.

An array of data collection technologies was screened to identify the most reasonable and appropriate methods for the Testing and Monitoring Plan. The screening criteria include: (1) selection of appropriate direct and indirect mature monitoring technologies; (2) cost benefit analysis of each technology to mitigate potential; and (3) a mix between continuous and periodic implementation schedule. ExxonMobil recognizes mature technologies based on their Technology Readiness Levels (TRL), as defined by the International Energy Agency in their report *Energy Technology Perspectives, 2020; Special Report on Carbon Capture Utilisation and Storage.* This scheme is applicable to any technology, including those described in Table 5-1 for implementation on the Project. As described on Figure 5-2, mature technologies are those with TRL 8 (first-of-a-kind commercial demonstration with full-scale deployment in final form) and higher.

The monitoring methods are designed to track the plume in each of the four injection intervals from bottom to top: Upper Frio Sands, Fleming Sands 3, 2, and 1 provided in Figure 5-3.

Figure 5-2: TRLs for Selection of Monitoring Technologies

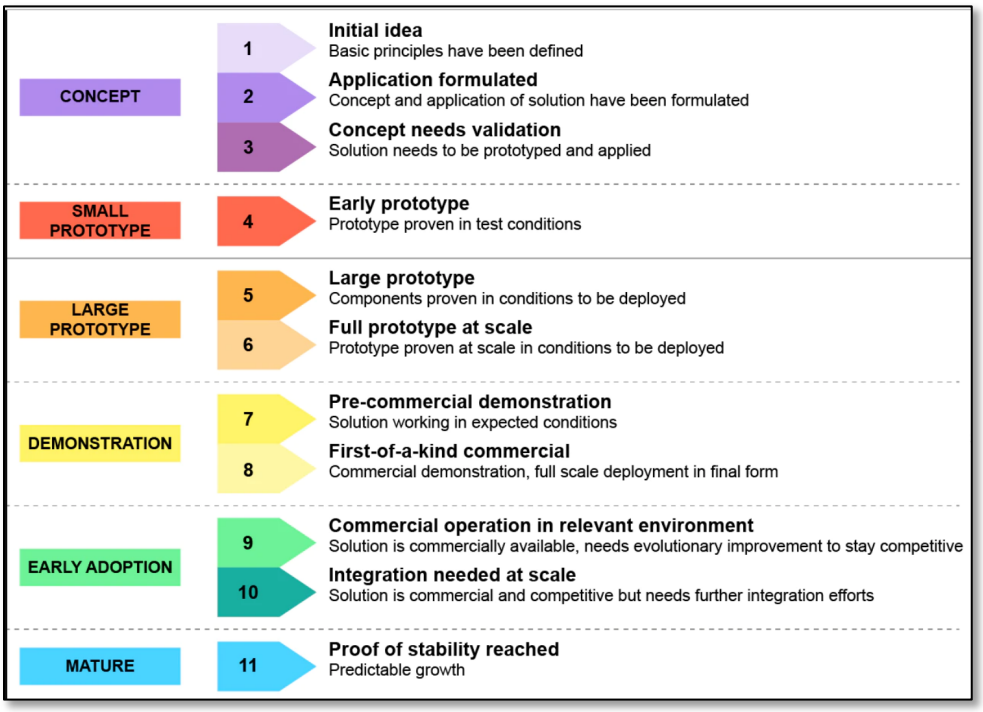


Table 5-1 provides a summary of mature technologies selected for tracking the CO2 plume and pressure front. Consistent with the stated interests of the EPA, the Testing and Monitoring Plan is intended to be a flexible approach using appropriate technologies and techniques that are refined and adapted based on site-specific information over time. ExxonMobil will continue to assess the feasibility of emerging technologies and conduct performance evaluations to continue to improve the performance of the testing and monitoring system.

Amendments to the Testing and Monitoring plan will be submitted to the UIC Program Director for approval, incorporated into the permit, and subject to permit modification requirements. Through the combination of proven and emerging technology pilot testing, a cost-effective testing and monitoring strategy will be maintained for the Project that measures the CO2 plume and pressure front migration paths and serves to provide reliable data for reevaluating the AoR model.

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Table 5-1: Summary of Monitoring Technologies for Direct and Indirect CO2 Plume and Pressure Front Tracking

Target Zone	Requirement	Technology	Placement Location	Target Depths	Phased/Triggered Approach	Monitoring Frequency	Data Evaluation Objectives
Injection Zone	Direct per 40 CFR 146.90(g)(1)	Downhole tubing mounted pressure and temperature gauge	Injection Wells No. 01, No. 02, and No. 03	Four injection intervals in Fleming and Upper Frio Formations	No	Continuous monitoring during injection operations for each injection interval Annual pressure fall-off test during well shut-ins	Identify pressure differential and location of pressure front for the four injection intervals
		Tubing encapsulated conductor cable with in-line pressure/ temperature gauges	In-Zone Monitoring Well No. 01	Four injection intervals in Fleming and Upper Frio Formations	No	Continuous monitoring	CO2 plume and pressure front tracking
	Indirect, geophysical techniques per 40 CFR 146.90(g)(2)	Time-lapse seismic surveys, or equivalent technologies	CO2 Plume Area	Four injection intervals in the Upper Frio and Fleming Formations	No	Surface Seismic Survey Event #1 (Survey Event #1) is the baseline event conducted prior to injection. Survey Event #2 will be performed within the first three years after injection, Survey Event #3 within six to eight years after injection, Survey Event #4 in year 13 at cessation of injection. Additional survey events if necessary, during PISC, as approved by UIC Program Director.	Monitor CO2 plume growth in the subsurface over time
		Passive Seismicity Monitor Station Array	Selected locations within AoR	Surface	Yes, contingent on triggering seismic event above threshold level determined by Table 8-3: Response Actions for Seismic Events.	Continuous monitoring	AoR-specific seismicity data collection and event analyses
Above UCCZ	Direct per 40 CFR 146.90(g)(1)	Fluid sampling protocol using converted Bead Farm Co. #1 collected through tubing	Above-Zone Monitoring Well - Bead Farm Co. #1	First laterally continuous water-bearing zone above UCCZ	No	Quarterly samples	Detection monitoring for CO2 plume and/or brine crossflow from injection zones to top of UCCZ
	Indirect, geophysical techniques per 40 CFR 146.90(g)(2)	Time-lapse seismic surveys, or equivalent technologies	CO2 Plume Area	From surface to base of Frio Sand 2	No.	Surface Seismic Survey Event #1 (Survey Event #1) is the baseline event conducted prior to injection. Survey Event #2 will be performed within the first three years after injection, Survey Event #3 within six to eight years of injection, Survey Event #4 in year 13 at cessation of injection. Additional survey events if necessary during PISC, as approved by UIC Program Director.	Detection monitoring for presence of CO2 plume above UCCZ Detection monitoring and evaluation of trends in water quality and geotechnical parameters

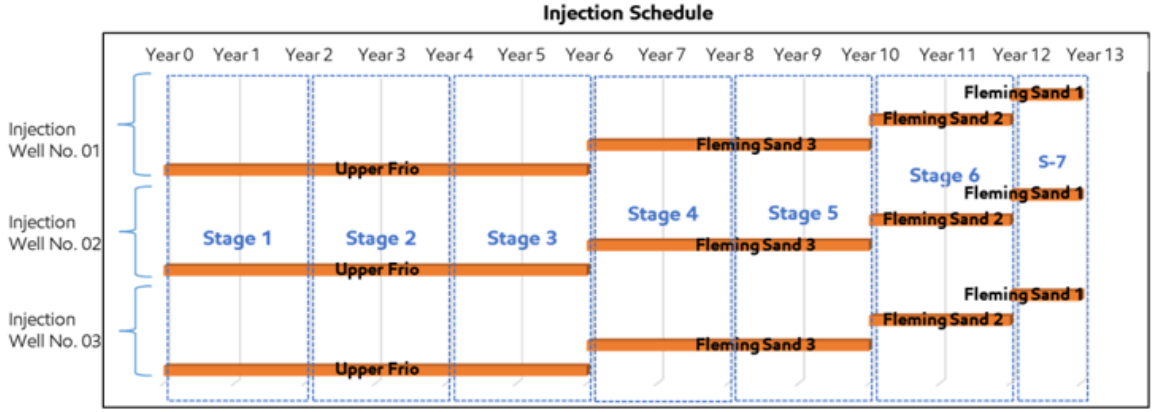
Target Zone	Requirement	Technology	Placement Location	Target Depths	Phased/Triggered Approach	Monitoring Frequency	Data Evaluation Objectives
USDW	Direct per 40 CFR 146.90(d)	Fluid Sampling	USDW Monitoring Wells No. 01, No. 02, No. 03	Groundwater samples collected just below the typical total depth of water wells completed in the area (e.g., 300 to 350 ft BGL).	Yes, three USDW monitoring wells prior to start of injection and additional USDW monitoring wells depending on the results of CO2 plume and pressure front tracking as discussed in AoR reevaluations	Pre-Operational Phase – Quarterly Operational Phase – Quarterly	Detection monitoring and evaluation of trends in water quality and geotechnical parameters
Soil Gas Monitoring	Direct per 40 CFR 146.90(h)	Soil gas samples collected from the unsaturated zone	Contingent on confirmed release to USDW				
Air Monitoring	Direct per 40 CFR 146.90(h)	Portable and/or stationary CO2 detectors monitor record ambient CO2 concentrations	Contingent on confirmed release to USDW				

5.3 Use of Phased and/or Triggered Approach

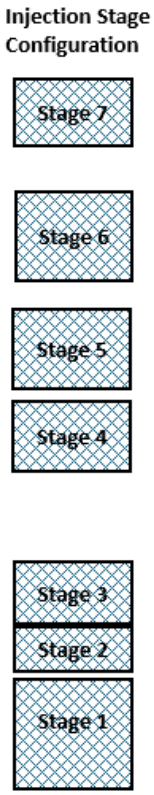
The testing and monitoring plan for CO2 plume and brine pressure front tracking makes use of the phased and/or triggered approach to scale the testing and monitoring network with the extent of the AoR and the site features that warrant monitoring. The goal of the approach is to provide the data necessary to demonstrate that USDWs are protected from the potential leakage of CO2 or brine. The scaling aspect of the strategy is aligned with the staged-injection approach outline in Section 3 – Area of Review and Corrective Action Plan that makes use of the vertical profile of the injection zone to optimize the CO2 storage volume and provides less CO2 plume and pressure front expansion from year-to-year than would otherwise occur with a more concentrated injection approach. The initial monitoring network is based on the model-predicted five-year AoR and what was deemed appropriate to track the CO2 plume and brine pressure front during that time period. From that point, the AoR reevaluation process will be used to assess the adequacy of the testing and monitoring program to detect potential leakage should it occur and make recommendations for changes if necessary to demonstrate protection of USDWs.

Figure 5-3 provides an illustration of the staged-injection approach for the Project. CO2 will be injected at separate stages into four injection intervals in the Fleming and Upper Frio sands, thousands of feet below the lowermost USDW. Rose CCS Project Injection Wells No. 01, No. 02, and No. 03 start injection in the Upper Frio formation and then move to the Fleming formation. Two confining zones are present including the Anahuac Shale and the UCCZ. Additional intraformational shale layers are present within the Fleming and Upper Frio formations. Section 3 ─ Area of Review and Corrective Action Plan provides a detailed discussion of the injection rates and schedules for each injection well and injection interval.

Figure 5-3: Staged-Injection Approach to Optimize CO2 Storage



Claimed as PBI



As the CO2 plume and pressure front expand over time, so does the deployment of technology to gather data and assess the potential for USDW endangerment. This phased and/or triggered monitoring strategy was adopted for the Plan based on the timing and depth of each injection interval described in Figure 5-3. The phased and triggered approach was identified as being protective of the USDW because of the availability of mature, reliable, and accurate technologies for tracking the CO2 plume and pressure front within the injection zones while reducing the number of well penetrations through the UCCZ.

The monitoring program was also constructed to align with the three operational phases of the Project: (1) pre-operational baseline data collection phase (cross-referenced in Section 4 ─ Engineering Design and Operating Strategy); (2) the operational phase for the three injections discussed in this section; and (3) the PISC phase (discussed in Section 7 ─ Post-Injection Site Care and Site Closure Plan). During the pre- and early-operational phases, a selection of technologies will be used to establish baseline seismic, pressure and certain geochemical parameters needed to monitor the CO2 plume and pressure front. This information will also be used to confirm the predictive modeling results and refine the model as necessary. During the operational phase, the frequency of direct monitoring data collection activities will be aligned with the initiation of injection into each new stage of the injection interval as described in Figure 5-3. The accuracy of the model at predicting the CO2 plume and pressure front migration will inform the frequency of indirect monitoring data collection. Upon confirmation of the predictive capabilities of the model, the frequency of indirect monitoring activities listed in Table 5.1 may be reduced as justified by the rates of change and variations observed by the monitoring results, which are subject to approval by the Director and incorporation into the permit.

A key consideration for the placement of In-Zone Monitoring Well No. 01 and Above-Zone Monitoring Well No. 01 was the need to collect high-quality data that represent the location of the CO2 plume and pressure front for assessing USDW endangerment. The locations of In-Zone Monitoring Well No. 01 and Above-Zone Monitoring Well No. 01 provide useful data relative to the injection permit requirements. A semiannual report will be provided to EPA that presents the collected monitoring data and plume migration evaluations. Surface air and soil gas monitoring [40 CFR 146.90(h)] are proposed as a triggered monitoring condition. The additional use of these technologies will be based on monitoring results obtained from the above UCCZ groundwater and USDW monitoring events.

5.4 Mechanical Integrity Test Methods

5.4.1 Internal Mechanical Integrity Testing – Annulus Pressure Test

In accordance with 40 CFR 146.89(b), ExxonMobil assessed the internal mechanical integrity of each injection well by performing annulus pressure tests after the well was completed, will assess again prior to injection, and annually thereafter. Annular pressure testing verifies the Part I or internal integrity of the annulus between casing and tubing above the packer. During well construction, prior to the installation of the injection tubing and packer, the casing was also pressure tested to the maximum anticipated annulus-surface pressure to verify its integrity. Additionally, during well construction and prior to installation of the injection tubing and packer, a casing inspection log was run to confirm the casing integrity.

The annular pressure tests are designed to demonstrate mechanical integrity of the casing, tubing, and packer. These tests will be conducted by pressuring the annulus to a minimum of the planned surface injection pressure described in Section 4 – Well Construction Plan and Operating Conditions.

The injection tubing annulus pressure will be continuously monitored at the wellhead during all other times. As required by 40 CFR 146.91(e), the tubing annulus pressure will be recorded and

reported to the UIC Program Director and additional appropriate regulatory permitting authorities, as needed, in semiannual reports to demonstrate compliance with casing integrity requirements.

An annular pressure test was conducted to confirm the integrity of the casing, tubing, and packer as per the following procedure:

- Ensure tubing/casing annulus is filled with fluid;
- Ensure temperature stabilization of well by ceasing injection before and through the test;
- Isolate the annulus pressure system;
- Rig up test pumps onto wellhead, A-Annulus outlet valve and pressure test surface lines to a minimum of planned testing pressure;
- Open casing valve outlet and increase the pressure to a minimum of the planned surface injection pressure as described in Section 4- Well Construction Plan and Operating Conditions.;
- Hold pressure for 30 minutes while charting test and continuously monitoring pressure ;
- Upon completion of 30-minute interval, check results of tests to confirm that the test has not lost more than 3% of test pressure; and
- Bleed off pressure and report results to UIC.

5.4.2 External Mechanical Integrity Testing

Following the requirements of 40 CFR 146.89(c), ExxonMobil will perform an annual Part 2 external mechanical integrity test (MIT) using both wireline temperature surveys and distributed temperature sensing (DTS) fiber. Wireline temperature surveys will be conducted as part of the regular MIT logging program and compared to DTS fiber measurements until sufficient data has been acquired and reviewed with the UIC Program Director to corroborate the use of DTS for leak detection. DTS fiber has advantages over traditional wireline tools since it is deployed permanently down hole, records at higher resolution, and can be recorded at any time utilizing the DTS interrogator at surface without the logistical challenges of wireline deployment. One of the benefits of this approach is that measurements can be obtained continuously while the well is operating or shut-in.

One fiber optic cable was installed in each injection well for DTS measurements to be collected across the formation intervals of interest. The cable was cemented behind the casing. A DTS interrogator will be available on demand to record temperature data from this fiber optic cable.

If temperature anomalies are observed outside of the permitted zone, ExxonMobil will deploy a Pulse Neutron Logging (PNL) tool in oxygen activation (OA) mode across the anomalous interval to quantify any potential leak rate. The UIC Program Director will be notified of the planned procedure a minimum of 30 days in advance of field activities, per 146.91(d)(3). The actual procedures will be proposed during the notice to the Director, and may vary depending on site, vendor, and equipment factors.

A Pulse Neutron tool is used for the purpose of detecting and quantifying the flow of water in or around the well. A Pulse Neutron test is considered passing when no upward-flow is detected outside of the injection zone.

Threshold velocities for false positives will be determined based on the vendor's logging equipment.

5.4.3 Reporting Results of MIT

Annulus pressure test results will be submitted to the UIC Program Director and additional appropriate regulatory permitting authorities, as needed, within 30 days of completion. The logs recorded during external MIT will be submitted to the appropriate regulatory permitting authority such as the UIC Program Director within 30 days of the verification that the logging results are representative and acceptable.

5.5 Continuous Recording of Operational Parameters During Injection

ExxonMobil installed and will use continuous measurement devices to monitor injection pressure, rate, and mass injected; the pressure on the annulus between the tubing and the long-string casing; and the temperature of the CO2 stream, as required under [40 CFR 146.88(e)(1), 146.89(b), and 146.90(b)]. Data will also be collected to document the addition or removal of any fluid from the annulus system. Data interfaces will be created for equipment that is not linked directly to a data management system or suitable equivalent, and it will be integrated into a unique surveillance platform. In the monitoring program, the sensors, transducers, and controllers will be connected in a central platform to monitor the operating conditions, set alarms for alerting operations of malfunction, and establish safety protocols in case of abnormal conditions. Alarms will additionally be set for pressures outside described tolerances (generally 90% of fracture gradient and prescribed wellhead pressures), and changes in annular pressure and fluid.

Instrument calibration standards, precision, and tolerances will be determined based on manufacturer recommendations. The automated control system data will be visually monitored for anomalies on a regular basis. Average values will be compared to baseline and predicted values to determine if there are any significant deviations relevant to integrity or containment.

The operating parameters, monitoring values, laboratory results, reports, and surveillance documents for the Project will be stored in a database to support AoR reviews, quality assurance / quality control review programs, and routine reporting. Table 5-2 provides a summary of the typical sampling devices, locations, and data storage frequencies for the continuous monitoring program. Records will be submitted in an electronic format, per 40 CFR 146.91(e).

Table 5-2: Sampling Devices, Locations, and Data Frequencies for Continuous Monitoring

Parameter	Device(s)	Location	Estimated Min. Sampling Frequency	Estimated Min. Recording Frequency
Surface Injection Pressure	Wellhead Pressure Logger	Surface, injection well piping	5 seconds	5 minutes
Downhole pressure gauge	Pressure Gauges	Injection Unit	5 seconds	5 minutes
Injection rate	Coriolis Meter	Central Pad piping	5 seconds	5 minutes
Injectate density	Coriolis Meter	Central Pad piping	5 seconds	5 minutes
Total mass injected	Coriolis Meter	Central Pad piping	5 seconds	5 minutes
Annular pressure	Pressure Gauge	Well Head	5 seconds	5 minutes
Annulus fluid volume	Pressure Gauge	Annulus System Tank	5 seconds	5 minutes

Parameter	Device(s)	Location	Estimated Min. Sampling Frequency	Estimated Min. Recording Frequency
CO2 stream temperature	Coriolis Meter/Wellhead Pressure Logger	Well Head, injection well flowing	5 seconds	5 minutes
Note: The word “continuous” is used to express the frequency of measures collected during monitoring equipment operation is defined as the instrument’s normal data collection frequency as defined by the manufacturing. The frequency will vary by instrument and application. Measurements that are collected “continuously” will be averaged across a reasonable and appropriate time interval for reporting the detection monitoring results during the operational phase of the Project.				

5.5.1 Continuous Monitoring of Injection Rate and Volume

ExxonMobil will collect continuous measurements necessary to calculate and report the injection mass flow rate and volume in compliance with 40 CFR 146.90(b). A data management system or suitable equivalent will be used to facilitate continuous collection of intake pressure at the central pad transfer point, pressure within the distribution system to each injection well, and the wellhead of the injection wells.

A Coriolis flow meter will be used to measure the flow rate at the central pad and compute flow rates for each injection well. The Coriolis flow meter directly measures the mass flow rate of the injected fluid. Analytical methods will be conducted at a periodic interval to determine the mass percentage concentration of CO2 and carbon monoxide (CO). The mass percentage concentration of CO2 and CO are multiplied by the total mass flow reading from the Coriolis flow meter to estimate the total mass of captured CO2 and CO for a given period. The meter will be placed directly at the point of injection. The meter will be calibrated to manufacturer specifications.

ExxonMobil will review and interpret the continuously monitored parameters to validate that they are within permitted limits. The data review will also include examination of trends to help assess the need for equipment maintenance or calibration. Semiannual reports of the monitoring data will be submitted to the regulatory permitting authority.

5.5.2 Continuous Monitoring of Injection Temperature and Pressure at Injection Well]

ExxonMobil will perform continuous monitoring of the injection pressure, temperature, mass flow rate, and injection annulus pressure in compliance with 40 CFR 146.90(b). The injected CO2 stream pressure will be continuously monitored in the CO2 flowline near the wellhead interface. The annulus pressure will also be continuously recorded. The combined wellhead and downhole monitoring data will be used to continuously characterize the injection stream in detail.

ExxonMobil will review and interpret the monitoring data to confirm compliance with the operational limits of the injection permit for each well. The data review will include an analysis of trends for operational performance evaluation and routine maintenance. Periodic reports of the monitoring data will be submitted to the UIC Program Director.

5.5.3 Continuous Monitoring of Injection Temperature and Pressure in Reservoir

Reservoir temperatures and pressures will be measured using a downhole gauge installed in the tubing above the production packer. The gauge is shown in detail in Section 4 ─ Well Construction Plan and Operating Conditions. For specialized data such DTS, the Project will use additional support from the provider of the selected technologies to perform quality control and verification of the data as well as calibration of the systems as needed. See Section 4 for

well diagram(s). The Wellhead Pressure Logger will also continuously measure the temperature and can be used as a backup in case the DTS fails.

5.5.4 Continuous Monitoring of Annular Pressure and Volume (Tank Level)

The annular pressure between the tubing and the injection casing string will be monitored on a continuous basis. The pressure gauge on the annulus will be tied into the data management system or a suitable equivalent system and set to alarm if pressure or volumes move outside set tolerances. The annulus tanks in the well systems will be maintained with sufficient volumetric capacity to accommodate the anticipated volume fluctuations due to temperature and pressure variations. The annulus tanks are to be equipped with a level transducer or an armored reflex sight glass and an independent liquid fill nozzle. If any annulus fluid is added or removed, it will be recorded. An annulus tank level is to be recorded on any day when injection occurs.

5.5.5 Positive Annular Pressure

Per 40 CFR 146.88(c), pressure will be maintained in the annulus at a value of at least 100 psi greater than the injection pressure. ExxonMobil will fill the annulus with a non-corrosive fluid approved by the UIC Program Director. A system will be set up to maintain pressure in the annulus using non-corrosive fluid or gas and it will be tied into the alarms or a suitable equivalent system designed to signal pressure drops below set-points.

5.6 Corrosion Monitoring

The tubing and casing materials will be monitored during the operational period for loss of mass, thickness, cracking, pitting, and other signs of corrosion to demonstrate that the well components continue to meet the minimum standards for material strength and performance. Monitoring will take place based on well-specific conditions that are encountered, with corrosion coupons tested on a quarterly basis.

5.6.1 Monitoring Location and Frequency

Corrosion coupons are placed in continuous contact with the CO2 stream. Corrosion coupons are installed downstream of the central pad facility meter run on the 12-inch header and upstream of the check valves prior to the flow lines to the injection wells. The samples will be exposed to the process stream conditions immediately prior to injection using a recycle loop or sample retriever. Exposure is to be representative of conditions at the top of the tubing. Coupons will be tested quarterly.

Casing inspection logs (CILs) (e.g., ultrasonic imaging tool, electromagnetic, cement bond log, and caliper) will be conducted on the long-string casing at a minimum frequency of once every five years. When the operational monitoring of the plume and/or pressure indicate that a completion stage has been fully utilized and it is time to recomplete uphole to a shallower injection interval, the tubing will be removed and inspected, and a casing inspection logging suite will be run. If the abandonment of an interval is not warranted at the time of recompletion, then a thru-tubing casing inspection will be performed.

5.6.2 Monitoring of Corrosion Coupon

Monitoring of well tubing and casing material corrosion willbe conducted on a quarterly basis to evaluate the corrosion coupon monitoring system. A corrosion coupon station or rack will be provided as part of well-materials integrity monitoring. Any coupon in active use will be exposed to the stream composition to provide ongoing evaluation of material compatibility with the CO2 stream. The results will be reported to the regulatory permitting authority such as the EPA UIC Director semiannually.

The coupons will be assessed for corrosion using American Society for Testing and Materials (ASTM) and Association for Materials Protection and Performance (AMPP) standards. AMPP NACE SP0775-2023 will be followed to assess coupon weight loss and pitting analysis (after baseline). When the coupons are removed, they will be inspected visually for signs of corrosion or pitting. The weight and size of the coupons will be measured each time they are removed. The rate of corrosion will be calculated using a weight loss method where the rate equals the weight loss during the exposure period divided by the duration of the period.

The coupon initial baseline measurements will follow the recommendations of ASTM G1-03 (included in references). Coupons will be prepared from the material used to construct the injection well. A method of coupon preparation will be chosen that does not alter the properties of the metal. For example, grinding operations will be controlled to avoid high surface tensions/temperatures that could change the microstructure of the coupon. Coupons may be prepared by smooth grinding with 120 grit paper, by tumbling with loose grit, or blasting with abrasive blasting material. A consistent finish may be obtained by blasting with glass beads. The abrasives will be free of metallic particles. A permanent serial number shall be etched or stamped on each coupon. ExxonMobil will machine or polish the edges of the coupon to remove cold-worked metal if the cold-worked edges adversely affect the data. ExxonMobil will dry, measure length, measure width, measure thickness, and weigh the coupons to within ± 0.5 mg, record the mass, serial number, and exposed dimensions, calculate the surface area (including the edges) and record. The areas covered by the coupon holder and shielded areas of flush-mounted coupons will be excluded.

5.6.3 Cement Evaluation and Casing Inspection Logs

As discussed in Section 4 ─ Well Construction Plan and Operating Conditions, a cement bond log was run after the casing was run and cemented and sufficient cement-curing has taken place. Logging was conducted to assess the quality of the cement. A baseline CIL log established the initial dimensions of the wall thickness of the production casing after it was cemented. Following the installation of the completion equipment, including the tubing and packer assembly, an initial electromagnetic through-tubing CIL was run. The CIL will serve as the baseline survey for potential future repeat surveys with the objective of enabling the detection of possible loss of metal mass.

Repeat electromagnetic CILs will only be performed if other monitoring measurements create concern about the integrity of the casing of the well, and the technical determination is made that a repeat CIL is most suitable to address those concerns. Examples include a loss of annulus pressure and temperature measurements using the fiber optic cables installed in the well. Changes in the recorded electromagnetic response will be analyzed to identify and localize casing corrosion, addressing 40 CFR 146.89(d).

5.7 Pressure Fall-Off Testing

Required pressure transient fall-off testing will be conducted at the end of every injection stage, prior to recompletion, or every five years, whichever is more frequent, to meet the requirements of 40 CFR 146.90(f). Pressure fall-off tests will be conducted at the staged-injection interval. Recompletion to shallower intervals will result in no further pressure fall-off testing for injection intervals in post-injection status. The objective of periodic testing is to monitor for any changes in the near-well bore environment that may impact permeability and reservoir pressures during active injection. A report containing the pressure fall-off data and interpretation of the reservoir pressure will be submitted to the EPA within 30 days of the conclusion of the test. Although test procedures or methods may be changed based on request of the permittee and approval by the

UIC Program Director, the following procedure is expected to be typical for such periodic monitoring.

5.7.1 Testing Method

The procedures to conduct a pressure fall-off test are as follows:

- Record data regarding test well injection at typical operating conditions (constant rate plus or minus 10%). Rate versus time data will be recorded during the injection period. Cumulative injection volume will also be recorded. Continue injection for a time equivalent to the projected duration of the fall-off necessary to observe analyzable radial flow. Note that significant rate variations may require more complicated analysis techniques.
- Verify operation of permanent monitoring equipment or rig-up downhole memory pressure gauge and run in well to a datum depth approved by the regulators.
- For pressure transient fall-off, obtain final stabilized injection rate and pressure for a minimum of 1 hour. Ensure that the injectate temperature has stabilized.
- Cease injection and monitor pressure fall-off. Continue monitoring pressure for a time sufficient to observe reservoir behavior. Wellbore pressure gradients will be obtained to establish fluid gradient.
- Stop test data acquisition, rig-down and release equipment.

5.7.2 Analytical Methods

Near-wellbore conditions, such as the prevailing flow regimes, well skin, reservoir properties and boundary conditions will be assessed through the use of standard pressure transient diagnostic plotting and well test simulators, as required. This assessment will be accomplished from analysis of observed pressure changes and pressure derivatives on standard diagnostic log-log and semi-log plots. Significant changes in the well or reservoir conditions will be identified by comparing pressure fall-off tests performed prior to initial injection with later tests. These well parameters resulting from fall-off testing will be compared against those used in AoR determination and site computational modeling. Notable changes in reservoir properties may dictate that an AoR reevaluation is necessary.

The pressure fall-off test results will be submitted to the UIC Director within 30 days of completion of the quality assurance / quality control verification of the pressure data.

5.7.2.1 Quality Assurance / Quality Control

The surface field equipment will undergo inspection and testing prior to operation. The pressure gauges will be calibrated prior to installation per manufacturer instructions. Documentation certifying proper calibration will also be enclosed with the test results. Further validation of the test results will be justified by extended collection of pressure data from the plugged and abandoned injection stages. The continuation of pressure monitoring in deeper, inactive stages allows for recording of the naturally occurring pressure decay. Pressure communication between stages may also be evaluated with this approach.

ExxonMobil developed the Quality Assurance Surveillance Plan (QASP) in Appendix E in this application as a supplement to the testing and monitoring requirements of this section as well as Section 4 – Well Construction Plan and Operating Conditions and Section 7 – Post-Inject Site Care and Site Closure Plan. The goal of the QASP is to provide reliable data to verify that the Project is operating as permitted without endangerment to USDWs. The QASP provides a verifiable set of standards and controls that include the technologies, methodologies,

frequencies, sample quality assurance, and procedures to demonstrate the collection data activities will provide accurate and reliable information about the Project operations. The QASP is unique to the Project, informed by site-specific details, monitoring technologies selected, and will be updated as the Project evolves in concert with the Testing and Monitoring Plan.

5.7.2.2 Monitoring of CO2 Stream

Consistent with 40 CFR 146.90(a), ExxonMobil will install and use measurement devices to analyze the chemical composition of the injection stream to assess the potential for interactions between CO2 and other injectate components and compatibility with the well completions materials. Temperature and pressure will also be measured at the sample collection point.

5.7.2.3 Sampling Frequency

CO2 stream will be sampled quarterly.

5.7.2.4 Sampling Methods

The quarterly measurements will be obtained by collecting representative samples of CO2 at a sample port on the Project's central pad beyond the last stage of compression in the compression build or similar point. Sufficient mixing and residence time in the system will have occurred at this sampling point for the sample to be representative of the injected CO2 stream. The sampling station will be equipped with the ability to purge and collect a gas sample into a sealed container. The central pad is the connection point between the CO2 pipeline and the sequestration field's distribution system.

Sampling activities will be conducted at the direction of site representatives and in accordance with the certified or accredited analytical laboratory procedures and will meet the minimum current standard EPA procedures. A sample will be collected by depressurizing the liquid stream and sampling the CO2 as a gas in either a Tedlar® bag, a Summa cannister, or laboratory-approved alternate. The grab sample will be sent to an independent contract laboratory for analysis.

Each sample will be accompanied by a facility or contract laboratory Chain-of-Custody (COC) form that provides a record of sample handling, starting with sample acquisition, documenting the sample transfer process up to laboratory analysis. Samples taken are to be logged in the field using the COC form. Sample transfer containers (e.g., coolers) will be sealed and delivered to the laboratory with a COC form. The COC form shall provide the following items recorded by the sampler:

1. Sample ID including code or name, in addition to date and time;
2. Name of sample collector; (include sampling company name if not site personnel);
3. Sample collection method;
4. Sample collection date;
5. Sample collection point; and
6. Sample presentation technique, as applicable.

Standard laboratory COC forms that document the times and dates of all personnel handling the sample, along with standard labels and container seals sufficient to distinguish between samples and prevent tampering, will be acceptable.

Sample COC will be followed at all times during the sampling and subsequent analysis. COC will be used to document the handling and control necessary to identify and trace a sample from collection to final analytical results.

5.7.3 Analytical Plan

Table 5-3 presents the test parameters, analytical methods, and sample frequency for each test parameter. The selected parameters and constituents for analysis are consistent with the composition of the CO2 stream described in Section 4 – Well Construction Plan and Operating Conditions.

Table 5-3: Summary of CO2 Sampling and Analysis Plan

Parameter/Constituents	Analytical Method(s)1	Frequency
CO2 Purity	ISBT 2.0, GC/DID or Method 3A	Quarterly
Water	ISBT 3.0, GC/FTIR, Method 320, EPA Method 4	Quarterly
Oxygen	ISBT 4.0, GC/DID or Method 3A	Quarterly
Nitrogen	ISBT 4.0, GC/DID or by difference	Quarterly
Sulfur Dioxide	ISBT 14.0, GC	Quarterly
Hydrogen Sulfide	ISBT 14.0, GC	Quarterly
Oxides of Nitrogen	ISBT 7.0	Quarterly
Total Hydrocarbons	ISBT 10.0, GC	Quarterly
Carbon Monoxide	ISBT 5.0, GC/DID	Quarterly
Methane	ISBT 10.1, GC	Quarterly

DID = discharge ionization detector; FTIR = Fourier transform infrared; GC = gas chromatography; ISBT = International Society of Beverage Technologists

[1] Or suitable alternate analytical method may be used.

5.8 CO2 Plume and Pressure Front Tracking

ExxonMobil plans a two-phased strategy for meeting the requirement for plume tracking consistent with 40 CFR 146.90(g). For the initial period of operation, the rate and direction of CO2 plume migration will be based on continuously recorded pressures and temperatures at the three injection wells and the In-Zone Monitoring Well No. 01. Indirect monitoring will be performed using periodic time-lapse surface seismic imaging. Additionally, ExxonMobil will be exploring emergent technologies to support plume monitoring. The Bead Farm Co. #1 was converted to an Above-Zone Monitoring Well and equipped with tubing for fluid collection. Table 5-1 provides a summary of direct and indirect plume and pressure front monitoring technologies.

5.8.1 Direct Pressure Front Tracking

Injection Wells No. 1, No. 02, and No. 03 (Figure 5-4) are equipped with downhole pressure gauges to continuously monitor the pressure in the active completed injection intervals as shown in Appendix D of Section 4 – Well Construction Plan and Operating Conditions. The continuous pressure and temperature measurements will be used to characterize injection well pressure at that location as well as the cumulative pressure response from the other wells completed in the injection zone.

CONFIDENTIAL BUSINESS INFORMATION

China, TX

AVE B
AVE C
AVE D
THERIOT RD
WALDEN RD
S PINE ISLAND RD
NOLIA LN
PINE ISLAND LEVEE RD
PINE ISLAND RD
GREEN POND GULLY RD
LAWHON RD
S CHINA RD
3RD AVE
BOYT RD
Bayou Din
Gallier Canal

USDW Monitoring Well No. 01

In-Zone Monitoring Well No. 01

Rose CCS Project Injection Well No. 03

Above-Zone Monitoring Well No. 01
Bead Farm Co. #1

Rose CCS Project Injection Well No. 01
4224502193

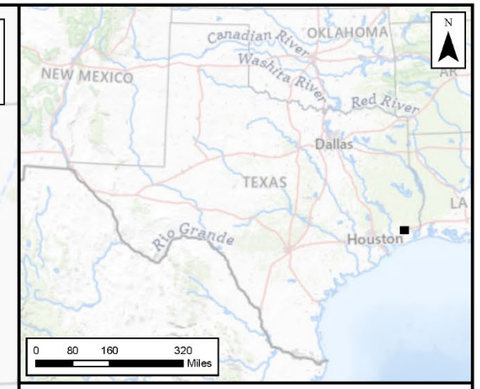
USDW Monitoring Well No. 02
4224502194

Rose CCS Project Injection Well No. 02

USDW Monitoring Well No. 03

N

0 1,250 2,500 5,000 Feet



Legend

- Area of Review
- Injection Well
- Bead Farm Co. #1
- Artificial Penetration within AoR
- USDW Monitoring Well
- In-Zone Monitoring Well

Figure 5-4
Location of Pre-Operation Data Collection and USDW Monitoring Wells
Rose Carbon Capture and Storage Project
ExxonMobil Low Carbon Solutions Onshore Storage LLC
Jefferson County, Texas

ERM

Source: Esri - World Topographic Map; NAD 1983 StatePlane Texas South FIPS 4205 Feet

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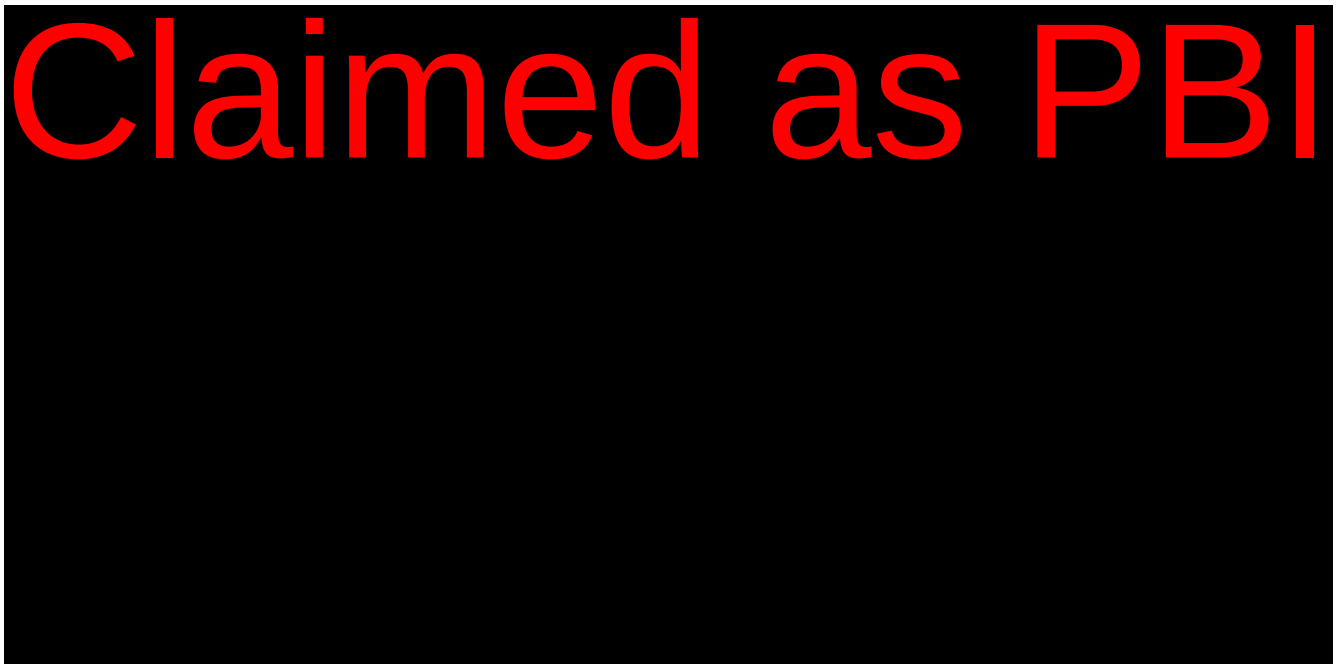
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Any periods of shut-in for an injection well may be observed and treated as a fall-off test by recording the shut-in wellhead pressure, bottomhole pressure, and temperature readings. This information, together with the continuous measurements obtained during regular operating conditions, will aid in updating the plume models and forecasts.

5.8.2 Plume and Pressure Front Tracking Using Indirect Geophysical Techniques

ExxonMobil will use periodic surface seismic data acquisitions and time-lapse data analysis as the primary indirect method for tracking the CO2 plume migration consistent with the operation monitoring requirements specified in 40 CFR 146.90(g)(2). An existing 3D-seismic survey will serve as Survey Event #1, representing the pre-injection subsurface characterization baseline and the baseline for time-lapse data analysis. This baseline 3D survey is comprised of two early 2000's vintage proprietary datasets and is undergoing reprocessing by a recognized industry-leading vendor. Surface seismic monitoring surveys will be acquired during the injection stages at a frequency that demonstrates conformance between the reservoir model simulation and site performance. Post-operational survey events will be utilized during the post-injection period to confirm the stabilization of the plume and detect CO2 leaks through the UCCZ, should they occur.

ExxonMobil considers time-lapse seismic analysis to be a proven method for imaging subsurface changes in oil and gas exploration, enhanced oil recovery (EOR), and production. This methodology has been applied previously by Denbury Inc. in the Frio formation at a Gulf Coast EOR field (Holmes et al., 2023) to monitor the movement of injected CO2 through time. A summary of the results of this time-lapse surface seismic study are shown in Figure 5-5. The red and yellow colors in Figure 5-5 represent the movement of CO2 in the Frio formation over time.



During CO2 injection operations, seismic data will be acquired periodically in the time-lapse seismic monitoring plan to monitor the movement of the CO2 plume and calibrate the CO2 plume model. Survey Event #1 was based on a proprietary survey (referred to as Surface Seismic Survey Event #1 or Survey Event #1) acquired as part of the site characterization data acquisition process to establish an initial state of the subsurface fluid distribution.

The timing of the Survey Event #2 will occur when the following criteria are met and the analysis of operational and testing data demonstrates compliance with the UIC Class VI permits, likely in the first one to three years of operation:

- The UIC Program Director confirms that the data quality objective for direct measurements and operational data have been achieved and no significant deviations related to data quality are outstanding;
- The CO2 plume and pressure front model has been reasonably calibrated to the actual operational and monitoring results reported to the UIC Program Director;
- The model predicts that the first injection stage is approaching the target storage volume, in compliance with the UIC Class VI Permits for the Project and without threat of endangerment to USDW; and
- The acquisition of indirect monitoring data is necessary to improve the forecast of the end of the initial injection stage and the transition to the next injection stage, while protecting USDW from endangerment of CO2 or brine cross-flow.

Should at any time the acquisition of indirect monitoring data suggest deviation from expected behavior for compliance with the permits, ExxonMobil will discuss the need with the UIC Permit Director and take appropriate action.

Survey Event #3 will occur in the Fleming formation approximately six to eight years after stage 1 startup using the same approach from the injection stages in the Upper Frio Sands.

Survey Event #4 is planned for approximately thirteen years of operations. A significant amount of direct and indirect monitoring data will be available, up to 16 semiannual reports provided to the UIC Program Director, and conclusions made regarding the predictive capabilities of the CO2 plume and pressure front model for both the Upper Frio Sand and the Fleming Sand injection intervals. ExxonMobil expects that the model will be a reliable predictor of the growth rates and extents of CO2 saturation and pressure plumes. With the UIC Program Directors concurrence, Survey Event #4 will occur at the end of operational period, a predicted total of 13 years. Survey Event #4 will yield the indirect measurement of the extent of the CO2 plume at the start of the PISC period.

As described in Section 3 – Area of Review and Corrective Action Plan, the maximum pressure differential within the injection zone diminishes rapidly to just above baseline pressures within the first year of PISC for the Fleming Sands, which is the portion of the injection zone immediately beneath the UCCZ. The decrease in maximum pressure differential in the Upper Frio Sands also drops significantly after year seven of the injection schedule. After injection in the Frio is completed, the model results predict a steady decline to a maximum pressure differential below Claimed as PBI when injection ceases, indicating plume stability. This rapid decline in pressure in the injection zone, along with the performance of the calibrated model, are the primary bases for recommending that no additional surface seismic events may be necessary in the PISC period. In the event that additional surface seismic events are necessary to improve the model's predictive capability or show CO2 plume stability, ExxonMobil will communicate with the UIC Program Director on the nature and timing of such contingent survey events.

In summary, ExxonMobil proposes the following surface seismic monitoring event schedule:

- Survey Event #1: completed as part of the data purchase and reprocess for site characterization;

- Survey Event #2: one to three years from start of operation assuming the triggering criteria are met;
- Survey Event #3: six to eight years from start of operations with conformance to the triggering criteria;
- Survey Event #4: expect to occur at the end of the operations, 13 years from commencement of operations
- The survey event time increment is not to exceed 5 years and may be shortened, conforming to triggering criteria defined by the UIC Program Director; and
- Contingent Additional Survey Events during Operational and PISC Phases: to be determined based on the results from direct and indirect monitoring and model prediction.

The time-lapse data collected during survey events will also be used to monitor for CO2 in the groundwater formation directly above the storage reservoir, utilizing data from both the injection wells and the in-zone monitoring well as an assurance-monitoring technique.

The timing of these survey events will be refined in future updates of the monitoring plan according to 40 CFR 146.90(j). Over time, monitoring methods and data collection may be supplemented or replaced as advanced techniques are developed.

5.9 CO2 Plume Tracking Using Groundwater Monitoring Data

5.9.1 Phased and Triggered Monitoring

The phased and/or triggered monitoring strategy was adopted for the installation of potential additional USDW monitoring wells, soil gas monitoring wells, and air monitoring locations. The phased approach was deemed reasonable and appropriate based on the schedule of CO2 injection for three injection wells and the degree of protectiveness evident based on the geologic site characterization and demonstrated by the plume modeling. This type of approach allows the site-specific testing and monitoring strategies to be tailored to changes in predicted performance and in response to potential increased risks to USDWs identified or detected during the course of injection.

Table 5-4: Summary of Phased and/or Triggered Monitoring Program

Phase	Establish Baseline Conditions	Tracking and Monitoring Initial CO2 Plume and Pressure Front Migration	Sustained Operating Conditions
Time Period	Conducted prior to injection.	From start of operations until at least 50 years after cessation of injection or for the duration of an alternative time frame approved through a successful non-endangerment demonstration.	From end of initial CO2 plume and pressure front tracking to cessation of injection operations, assumed to be 13 years from start.
Description	Measure baseline conditions in the injection zone, above UCCZ, and in USDW for comparison with subsequent detection monitoring data collection.	CO2 plume and pressure front tracking at three injection wells and one in-zone monitor well using direct and indirect technologies as well as groundwater sampling at the above-zone monitoring well and three USDW monitoring wells to demonstrate compliance with the permit requirements.	Continued monitoring with an appropriate number of monitoring wells to track the CO2 plume and pressure front within the AoR, monitor the groundwater, and demonstrate compliance with permit requirements.
Monitored Conditions	Injection Wells: wellhead and bottomhole pressure and temperature measurement. Bead Farm Co. #1: pressure, temperature, groundwater samples collected at selected intervals for baseline groundwater quality and geochemical parameters during well drilling. Additional baseline groundwater sample(s) collected above UCCZ during conversion to Above-Zone Monitoring Well. Survey Event #1: baseline acoustic response of surface to base of Upper Frio Sands. USDW monitoring wells: groundwater quality and geochemical parameters.	Injection Wells: wellhead and bottomhole pressure and temperature. In-Zone Monitoring Well: injection interval pressure and temperature. Above-Zone Monitoring Well: Groundwater samples from first laterally continuous water-bearing zone above UCCZ for water quality and geochemical parameters. Survey Events: three acoustic response events from surface to base of Upper Frio Sands to assess CO2 plume growth within the AoR. USDW monitoring wells: water quality and geochemical parameters.	Injection Wells: wellhead and bottomhole pressure and temperature. In-Zone Monitoring Well: injection interval pressure and temperature. Above-Zone Monitoring Well: Groundwater samples from first laterally continuous water-bearing zone above UCCZ for water quality and geochemical parameters. Contingent Survey Events: to be conducted if additional indirect evidence of CO2 plume stabilization is warranted. USDW monitoring wells: groundwater quality and geochemical parameters.

Phase	Establish Baseline Conditions	Tracking and Monitoring Initial CO2 Plume and Pressure Front Migration	Sustained Operating Conditions
Planned Changes in Monitoring Techniques	None	Frequency of USDW monitoring is quarterly	Additional USDW monitoring wells as needed to characterize geochemical variability in accordance with CO2 plume migration and pressure front.
Monitoring Locations	Three injection wells One In-Zone Monitoring Well One Above-Zone Monitoring Well (Bead Farm Co. #1) Three USDW monitoring wells Seismic: CO2 Plume Area	Three injection wells One In-Zone Monitoring Well One Above-Zone Monitoring Well Three USDW monitoring wells Seismic: CO2 Plume Area	Three injection wells One In-Zone Monitoring Well One Above-Zone Monitoring Well Three to seven USDW monitoring wells Seismic: CO2 Plume Area
Monitoring Frequencies	Injection Wells: single event measurements and samples at time of installation In-Zone Monitoring Well: continuous pressure and temperature measurements for each injection interval. Above-Zone Monitoring Well: Quarterly fluid samples from first water-bearing zone above UCCZ for two years. Stratigraphic Test Well: single event measurements and samples at time of installation USDW Monitoring Wells: Quarterly Survey Events: Survey Event #1 baseline event prior to start of operations	Injection Wells: continuous pressure and temperature. Annual pressure fall-off testing during shut-in. In-Zone Monitoring Well: continuous pressure and temperature measurements for each injection interval. Above-Zone Monitoring Well: Quarterly fluid samples from first water-bearing zone above UCCZ USDW Monitoring Wells: quarterly fluid samples Survey Events: Survey Event #2 within first one to three years after injection, Survey Event #3: six to eight years into injection, Survey Event #4: at 13 years from start of operations. Contingent additional survey events as needed and approved by UIC Program Director.	Injection Wells: continuous pressure and temperature. Survey events at reasonable time periods to confirm CO2 plume tracking and demonstrate compliance with permit requirements. Annual pressure fall-off testing during shut-in. In-Zone Monitoring Well: continuous pressure and temperature measurements for each injection interval. Above-Zone Monitoring Well: Quarterly fluid samples from first water-bearing zone above UCCZ USDW Monitoring Wells: Annual fluid samples. Survey Events: None planned. Sufficient data, model calibration, and rapid declines in maximum pressure differential are expected to reduce the need for subsequent surface seismic events during PISC. Contingent additional survey events as needed and approved by UIC Program Director.

Phase	Establish Baseline Conditions	Tracking and Monitoring Initial CO2 Plume and Pressure Front Migration	Sustained Operating Conditions
Triggers	Expand list of geochemical parameters and install additional USDW monitoring wells if unexpected trends or variability are apparent.	Table 3-21 in Section 3 – Area of Review and Corrective Action Plan provides a list of triggers for the AoR reevaluation process. Those triggers are applicable to the monitoring program.	Table 3-21 in Section 3 – Area of Review and Corrective Action Plan provides a list of triggers for the AoR reevaluation process. Those triggers are applicable to the monitoring program.
Note: The word “continuous” is used to express the frequency of measures collected during monitoring equipment operation is defined as the instrument’s normal data collection frequency as defined by the manufacturing. The frequency will vary by instrument and application. Measurements that are collected “continuously” will be averaged across a reasonable and appropriate time interval for reporting the detection monitoring results during the operational phase of the Project.			

5.9.2 Design of the Monitoring Well Network

The monitoring well network includes the monitoring wells that will be used to support compliance with the testing and monitoring requirements under the Class VI Rule. Combined with the monitoring of pressure build-up at each injection well, the design of the monitoring well network was selected to provide a high degree of confidence in detecting a leak through the confining zone that may endanger USDW. The relevant site data considered for the design of the monitoring well network included the phased injection depths, rate, and volume; the geology, and the presence of the legacy wells as required at 40 CFR 146.90(d)(1) and (2).

5.9.3 USDW Monitoring Well Construction

To comply with 40 CFR 146.90(d), a phased approach to USDW monitoring well installation is proposed. Initially, three USDW monitoring wells were completed at the locations shown on Figure 5-4. These locations were selected to provide a baseline of geochemical data in the vicinity of the following areas of significant interest:

- Within the Footprint of the Projected CO2 Plume and Adjacent to Public Water Supply: USDW Monitoring Wells No. 01 and No. 02 are located within or near the underlying CO2 plume and in alignment with potential CO2 plume migration toward of the northwest, (toward China, Texas) and in the vicinity of the 9000 to 10500 Block of Lawhorn Road, Beaumont, Texas. The available information suggests that both areas may rely on USDW for potable supply.
- Downgradient of the Injection Wells: USDW Monitoring Well No. 03 is located south of the three injection wells in the anticipated direction of groundwater flow in the Chicot Aquifer. This well will provide groundwater quality measurements downgradient from the highest CO2 plume pressure.

The Chicot Aquifer is the most prolific USDW aquifer within the AoR, and its relatively shallow water-bearing zones are a target for completion of water wells, typically at depths ranging from approximately 150 to 400 feet (ft) below ground level (BGL) in the AoR. The depth of the USDW monitoring wells was selected to be consistent with the total depths of water wells in the area and will provide data to assess whether significant changes in water quality are occurring at the depth of most water wells. These three USDW monitoring wells will provide an initial baseline of USDW quality prior to injection and then monitor for changes in USDW quality during injection and PISC.

Claimed as PBI [redacted] he bottom of the USDW was confirmed by both literature review and through the collection of open-hole wireline logs at the stratigraphic well (Bead Farm Co. #1) in November 2023, confirming the literature-cited depths of the lowermost USDW. The close correlation of the top of the Evangeline Aquifer and the elevated concentrations of TDS above 10,000 mg/L was sufficient evidence that monitoring groundwater quality at this depth could have a high potential for false positive detections of brine presumed to be associated with brine leakage through the UCCZ. For this reason, no USDW monitoring wells were located in the Evangeline Aquifer.

Other potential leakage points were considered for USDW monitoring wells, but the available evidence and evaluation indicated that no significant risk was apparent. For example, the model simulations of pressure near fault planes were found to be below levels deemed necessary to cause transmissivity that might result in the potential for CO2 and/or brine to leak from the

injection zones to USDW. Along-fault fluid migration is not a significant risk because as shown in Section 2.5.9.2 of Section 2 – Site Characterization, Shale Gouge Ratio (Yeilding et al., 1997) values of greater than 90% within faults intersecting confining intervals demonstrate robust fault seal, well above a conservative 50% cut-off, and significantly higher than the empirically determined value of 15-20% (Manzocchi et al. (1999); Sperrevik et al. (2002)). The critical pressure front does not intersect Fault 2_2, the only fault that extends through the UCCZ (Section 2.5.9.2 of Section 2 – Site Characterizatoin). Therefore, no USDW monitoring wells were proposed near fault planes. The time-lapse seismic monitoring collected during operations will be used to validate the model prediction of pressure and fault transmissivity.

Amendments to the Testing and Monitoring plan will be submitted to the UIC Program Director for approval, incorporated into the permit, and subject to permit modification requirements. At this time, it was assumed that up to four additional USDW monitoring wells, if necessary, could be completed in a phased approach to expand USDW monitoring coverage commensurate with the expanse of the CO2 plume and pressure front. The target schedule for expansion is after an initial period from the start of operations. During this time, data will be collected to reduce the uncertainty in CO2 plume and pressure front migration. The locations of any potential additional USDW monitoring wells will be selected for areas where a risk of leakage either remains uncertain or plume and pressure tracking indicators that a leakage feature, such as a legacy well, warrant additional groundwater monitoring.

5.9.4 Summary of Water Well Data for the AoR

Table 5-5 provides a summary of the USDW monitoring well construction details for USDW Monitoring Wells No. 01, No. 02, and No. 03. The well construction details for additional USDW monitoring wells (if constructed) will be consistent with the construction details in Table 5-5.

A total of 11 water wells in addition to the project monitoring wells were identified in and near the AoR as listed on Table 5-6 from the Texas Water Development Board well registration list and the Texas Commission on Environmental Quality environmental well database. Appendix F-1 illustrates the location of the water wells. Each of these wells is completed in the Chicot Aquifer with a maximum depth of approximately 440 ft BGL. The Project will monitor pressure and CO2 plume growth using indirect seismic measurements, water samples collected from USDW Monitoring Wells No. 01, No. 02, and No. 03 (Table 5-5), and measurements of temperature and pressure from In-Zone Monitoring Well No. 01. If the growth of either the pressure or CO2 plume is found to exceed the expected growth based on corroboration of multiple of the above-mentioned measurements, the Project will reevaluate the need for additional USDW groundwater monitoring wells. Expected growth will be defined by the modeled plume size (Section 3.7 of Section 3 – Area of Review and Corrective Action Plan). This will be prioritized near local communities or densely populated areas.

Table 5-5: Summary of USDW Monitoring Well Construction Details

USDW Monitoring Well	NAD83 (2011)	Latitude	NAD83 (2011)	Longitude	Total Depth (ft BGL)	Screened Interval (ft BGL)
USDW Monitoring Well No. 01	30°01'51.6497"	30.0310138	-94°18'38.9290"	-94.3108136	330	300-320
USDW Monitoring Well No. 02	30°00'09.5150"	30.0026431	-94°16'28.5845"	-94.2746068	350	320-340
USDW Monitoring Well No. 03	29°59'15.7081"	29.9876967	-94°17'56.3342"	-94.2989817	330	300-320

Table 5-6: Summary of Available Water Well Completion Details for AoR

Well Report ID	NAD83 (2011)	Reported Latitude	NAD83 (2011)	Reported Longitude	Well Type	Well Owner	Date Completed	Borehole Depth	Status or Plugging and Abandonment Date
645970	29° 59' 56.49" N	29.99903	94° 17' 53.14" W	-94.2981	Rig Supply	Exxon Mobil	8/11/2023	290	In Use
6162901	30° 0' 4.98" N	30.00139	94° 16' 14.86" W	-94.2708	Plugged and Destroyed	D. S. Wier	8/27/1941	7	Not Available
670175	29° 59' 59.49" N	29.999857	94° 16' 59.56" W	-94.28321	Water Rig Supply	Exxon Mobil	6/14/2024	300*	Active
670177	29° 59' 26.58" N	29.990716	94° 17' 55.08" W	-94.298632	Water Rig Supply	Exxon Mobil	7/2/2024	300*	Active
674757	30° 00' 44.74" N	30.012428	94° 17' 52.47" W	-94.297908	Water Rig Supply	Exxon Mobil	7/19/2024	300*	Active
675893	30° 01' 19.01" N	30.021947	94° 17' 39.12" W	-94.294199	Water Rig Supply	Exxon Mobil	8/15/2024	300*	Active
678489	30° 00' 09" N	30.0025	94° 16' 28" W	-94.274444	Monitoring Well	Exxon Mobil	8/20/2024	440*	P&A Date 11/5/2024
689934	29° 59' 57.37" N	29.99927	94° 17' 8.34" W	-94.28565	Monitoring Well	Exxon Mobil	9/19/2024	25*	Active

Well Report ID	NAD83 (2011)	Reported Latitude	NAD83 (2011)	Reported Longitude	Well Type	Well Owner	Date Completed	Borehole Depth	Status or Plugging and Abandonment Date
689935	29° 59' 26.23" N	29.99062	94° 17' 54.96" W	-94.2986	Monitoring Well	Exxon Mobil	9/17/2024	25*	Active
689936	30° 00' 44.57" N	30.01238	94° 17' 52.69" W	-94.29797	Monitoring Well	Exxon Mobil	9/17/2024	25*	Active
689937	30° 00' 9.65" N	30.00268	94° 16' 26.51" W	-94.27403	Monitoring Well	Exxon Mobil	9/18/2024	20*	Active

1 groundwater sample per well will be collected using decontaminated submersible pumps equipped with new dedicated and disposable sampling tubing capable of producing representative groundwater samples to the surface with the least pumping effort. The fluid sampling parameters and frequencies for the above-zone and USDW monitoring wells are shown in Table 5-8. Additional USDW monitoring wells will be added to assess the potential for USDW endangerment if necessary. Well completion diagrams are provided for USDW Monitoring Wells No. 01 to No. 03 in Appendices F-2 to F-4.

5.9.5 Construction of In-Zone Monitoring Well and Above-Zone Monitoring Well (Bead Farm Co. #1)

In-Zone Monitoring Well No. 01

In-Zone Monitoring Well No. 01 was constructed to collect pressure and temperature measurements from the four injection intervals. Table 5-7 provides the completion details for the well. In-Zone Monitoring Well No. 01 was equipped with a tubing encapsulated conductor cable with in-line pressure/temperature gauges to collect continuous pressure and temperature measurements for evaluating the rate of CO2 plume and pressure front movement. A schematic of In-Zone Monitoring Well No. 01 is provided in Appendix F-5.

In-Zone Monitoring Well No. 01 was constructed up-dip from the location of the three injection wells (Figure 5-4) to establish direct measurements of pressure and temperature in the injection intervals at a non-active location.

The In-Zone Monitoring Well No. 01 was equipped with a fiber optic gauge cemented behind the production casing. As shown on Appendix F-5, a fiber optic cable was cemented in the annulus of the long-casing string of the in-zone monitoring well for annual mechanical integrity testing.

Above-Zone Monitoring Well No. 01

After abandoning the injection interval, Bead Farm Co. #1 was converted to an Above-Zone Monitoring Well to collect groundwater samples from the first laterally continuous water-bearing zone above the UCCZ. Table 5-7 provides the completion details for the well. The Above-Zone Monitoring Well was equipped with a tubing string and packer as a conduit to collect groundwater samples. A schematic of the Above-Zone Monitoring Well No. 01 is provided in Appendix F-5.

The Above-Zone Monitoring Well No. 01 is centrally located from the location of the three injection wells (Figure 5-4) to establish direct measurements of groundwater samples in the injection intervals at a non-active location.

Once operations commence, groundwater samples will be collected from the first laterally continuous water-bearing zone above the UCCZ via the Above-Zone Monitoring Well No. 01 for analysis of geochemical concentrations on a quarterly frequency for the operational period.

Continuous pressure and temperature measurements will be recorded in In-Zone Monitor Well No. 01 for semiannual reporting using a downhole pressure gauge (illustrated in Appendix F-5 as a tubing encapsulated conductor cable and gauges mounted behind the casing). The primary line of evidence for assessing whether a threat to USDW is apparent will be based on a geochemical data assessment. Pressure and temperature trends will be considered as secondary lines of evidence and will be evaluated to assess significance of trends and the potential for instrumentation error to have caused false or erroneous measurements.

No additional monitoring wells were deemed necessary at this time based on the model-predicted CO2 plume movement and monitoring program, the significant porosity/permeability thickness and layering present in the injection zones and the extensive UCCZ present at the

site. In the event of unexpected CO2 plume migration, the location of additional monitoring wells will be proposed through a revision to this Testing and Monitoring Plan.

Table 5-7: General Details for In-Zone and Above-Zone Monitoring Wells

Monitoring Well Location Info	Above-Zone Monitoring Well No. 01 (Bead Farm Co. #1)	In-Zone Monitoring Well No. 01
NAD83 (2011) Latitude	29°59’57.1992”N	30°01'16.85"N
NAD83 (2011) Longitude	94°17’50.5093”W	94°17'37.65"W

5.9.6 Collection and Analysis of Groundwater Samples

One fluid sample per well will be taken periodically from the USDW monitoring wells and Above-Zone Monitoring Well No. 01 (Bead Farm Co. #1). The Above-Zone Monitoring well will target the first laterally continuous sand above the UCCZ, which is approximately 1,000’ below the base of the USDW. The USDW monitoring wells target the Chicot Aquifer, which is the most used aquifer in the AoR for potable and non-potable purposes. The sampling frequency for the Above-Zone and USDW monitoring wells is quarterly. This quarterly sampling characterizes the potential seasonal fluctuation in this USDW.

Table 5-8 summarizes the parameters analyzed and the planned sampling frequency, which apply to the USDW and Above-Zone Monitoring wells. Anomalous measurements will trigger re-sampling and additional data analysis, including a more detailed evaluation of data using statistical comparisons approved by EPA for detection monitoring programs. This analysis could also include geochemical modeling to compare the compositions of groundwater from before and during operations.

If warranted, other tests may be added to the evaluation if re-sampling and detailed analysis of the fluid samples does not satisfactorily rule out a leakage scenario.

Table 5-8: USDW and Above UCCZ Monitoring Sampling Program

Parameter/Analyte	USDW Monitoring Well Frequency	Monitoring Frequency above the UCCZ
TDS, alkalinity, electrical conductivity, temperature, pH	Quarterly	Quarterly
Gas composition (CO2, CH4, O2, N2)		
Dissolved cations (Ba, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mn, Mo, Ni, P, K, Si, Na, Sr, V, Zn)		
Dissolved anions (HCO3, B(OH)4, Br, CO3, Cl, F, I, NO3, NO2, PO4, SO4, S)		
Note: Ba = Barium; B(OH)4 = Tetrahydroxyborate; Br = Bromide; Ca = Calcium; Cd = Cadmium; CH4 = Methane; Cl = Chloride; CO2 = Carbon dioxide; CO3 = Carbonate; Co = Cobalt; Cr = Chromium; Cu = Copper; F = Fluoride; Fe = Iron; HCO3 = Bicarbonate; I = Iodide; Li = Lithium; Mg = Magnesium; Mn = Manganese; Mo = Molybdenum; N2 = Nitrogen; Na = Sodium; Ni = Nickel; NO2 = Nitrite; NO3 = Nitrate; O2 = Oxygen; P = Phosphorus; K = Potassium; PO4 = Phosphate; Si = Silicon; SO4 = Sulfate; Sr = Strontium; S = Sulfur; TDS = Total Dissolved Solids; V = Vanadium; Zn = Zinc		

5.9.6.1 Analytical Methods

ExxonMobil will test the fluid samples and maintain results for the parameters listed in Table 5-8. Both in-field pH measurements and laboratory-based chemical analysis will be performed. If results indicate the existence of impurities in the injection stream, the significance of these

constituents relative to the protection of USDW will be assessed to determine if they should be included in the analysis of the water samples. Testing results will adhere to the reporting requirements as outlined in 40 CFR 146.91(e).

Fluid chemistry data will be monitored for deviations from baseline values. During the injection phase as baseline data is still being collected, the concentration range for the baseline will be taken as the arithmetic mean of all currently collected baseline data +/- 35%. This assumes that laboratory analyses will have an uncertainty of ~25% and aquifer inhomogeneity will contribute an additional ~10% uncertainty. If deviations from the baseline are outside of this range, the numerical model will be reevaluated. Following the injection phase where a statistically robust dataset for the baseline will be available, the concentration range for the baseline will be taken as the arithmetic mean of the baseline data +/- the 95% confidence interval. If deviations from the baseline are outside of this range, the numerical model will be reevaluated.

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Potential geochemical signs that fluid may be leaking from the injection interval may be detected upon observation of the following trends:

- Change in TDS;
- Change in signature of major cations and anions;
- Increase in CO2 concentration;
- Decrease in pH;
- Increase in concentration of injectate impurities; and
- Increase in concentration of leached constituents.

5.9.6.2 Laboratory to be Used/COC Procedures

The fluid samples will be transported to an accredited and state-approved laboratory for analysis. ExxonMobil will observe standard COC procedures and maintain records to allow full reconstruction of the sampling procedure, storage, and transportation, including any problems encountered.

5.9.6.3 Quality Assurance and Surveillance Measures

ExxonMobil will collect replicate samples and sample blanks for quality assurance / quality control purposes. The samples will be used to validate test results, if needed.

5.9.6.4 Plan for Guaranteeing Access to All Monitoring Locations

Placement of the well locations is optimized to be accessible from roads.

5.9.7 Injection Interval Monitoring

In-zone fluid samples were collected from the stratigraphic test well and were analyzed for water quality and geochemical parameters. The results of these tests were provided in Section 2 – Site Characterization, Appendix B.1. In-zone fluid sampling is not proposed as a monitoring mechanism. ExxonMobil plans to monitor CO2 plume growth via time-lapse surface seismic, which is better suited to tracking three-dimensional plume growth than fluid sampling (which is a point measurement). Pressures and temperatures will be monitored in all injection intervals [redacted] through seventeen gauges installed in the In Zone Monitoring Well. This combination of surface seismic and continuous in-zone pressure /

temperature measurements will aid in the tracking and modeling of the CO2 plume and pressure front over time.

5.9.8 Seismic Monitoring (Induced Seismicity)

Based on the projected operating conditions and regional and local geologic conditions, injection operations are not expected to result in an induced seismic event mandating a response action. However, ExxonMobil has installed a permanent seismicity monitoring system onsite, which is being monitored by a third party to detect seismic activity prior to and during injection operations. This array has been recording baseline data since 1 July 2024. The design of the array consists of a near-surface network of seismometers with continuous data sampling, incorporation of publicly available data, and telemetry to cloud-based storage. Near-real-time, high-resolution signal processing and quality assurance will be implemented for event detection, magnitude, and location accuracy. ExxonMobil will additionally receive notifications from USGS of recorded seismicity events for the site and surrounding area, should an event occur. If a review of the data indicates that the event was within a 5.6 mi radius of an injector (as specified in Table 8-3), ExxonMobil will notify the UIC Program Manager to jointly determine if the events are likely to be associated with the operations, and, if so, implement response actions for seismic events as contained in Table 8-3.

5.10 Reporting Requirements

The Testing and Monitoring Plan was developed to achieve two reporting objectives:

- Provide the necessary data to verify predictions of CO2 plume and pressure front movement; and
- Provide the basis for evaluating the model inputs, making necessary changes, and reevaluating the AoR.

In compliance with 40 CFR 146.91, ExxonMobil will provide reports to the UIC Program Director in routine semiannual reports that document the performance of the system and CO2 plume and pressure front tracking data. Relevant records pertaining to the Class VI Testing and Monitoring program will be submitted to the EPA. In addition, ExxonMobil will follow the prescribed notification requirements for deviation from permit conditions, operational malfunction that may allow CO2 or brine to migrate into or between USDWs, or for other evidence of USDW endangerment.

The semiannual reports will include the data collected during each reporting period and a list of notifications triggered during a semiannual period, if any. The following information is proposed for the routine performance reporting:

- Monthly average, maximum, and minimum values of injection pressure, flow rate and volume, and annular pressure;
- Monthly volume and/or mass of the CO2 stream injected over the reporting period, and the volume injected cumulatively over the life of the Project;
- Monthly annulus fluid volume added;
- Results of CO2 plume and pressure front tracking as described herein;
- Any significant changes to the physical, chemical, and other relevant characteristics of the CO2 stream from the proposed operating data that could impact plume migration or protection of USDWs;

- A description of any event which triggered a shut-off device required to 146.88 (e) and the response taken; and
- A description of any event that exceeded operating parameters for annulus pressure or injection pressure specified in the permit.

The semiannual reports will be submitted 30 days after the completion of the quality control, quality review of the data for each reporting period. Table 5-9 describes the non-routine reporting triggers, contents, and schedule.

Table 5-9: Summary of Triggering Events for Notification and Reporting Schedule

Triggering Event	Reporting Schedule
Planned well workover, stimulation activities, or other planned test of an injection well.	Notification to the UIC Director, in writing, 30 days in advance of planned activity.
Completion of well workover.	30 days after completion of well workover.
Any test of the injection well conducted, if required by the UIC Director.	30 days after completion of any testing required by UIC Director.
Evidence of potential non-compliance with a permit condition, or malfunction of the injection system that may cause fluid migration into or between USDWs.	Verbal Notification – Reported within 24 hours of non-compliance or malfunction.
Evidence that the injected CO2 stream or associated pressure front may cause an endangerment to a USDW.	Verbal Notification – Reported within 24 hours of endangerment
A failure to maintain mechanical integrity.	Verbal Notification – Reported within 24 hours of MIT failure
A change in CO2 concentration that results in a value less than or equal to 96% [% = mol % = volume %] in the injection stream. The injection stream will be >97% carbon dioxide. A significant deviation which would warrant notification to the UIC director is if that stream changes to a value less than or equal to 96%.	Written Notification – Reported within 72 hours of concentration change.
An operational condition that exceeds operating parameters for annulus pressure or injection pressure as specified in the permit.	Verbal Notification – Reported within 24 hours of non-compliance with permit conditions. Written Notification – Reported within 72 hours of non-compliance with permit conditions.
A shut-off device anywhere in the injection well system that is triggered.	Verbal Notification – Reported within 24 hours of event. Written Notification – Reported within 72 hours of event.

ExxonMobil will submit all reports, submittals, and notifications to both the EPA and the RRC and retain records in accordance with 40 CFR 146.91(f) for a 10-year period after site closure. Additionally, injected-fluid data, including nature and composition, will also be retained for the 10-year period following site closure. Monitoring data will be retained for a minimum of 10 years post-collection, while well-plugging reports, PISC data, and the site closure report will be retained for 10 years after site closure.

5.11 Testing Plan Review and Updates

In accordance with 40 CFR 146.90(j), the Testing and Monitoring Plan will be reviewed and revised at a minimum of every five years to:

- Identify Project-specific factors that may warrant revision to the Plan;
- Incorporate information and changes necessary to monitor an increase in risk to or endangerment of USDWs; and/or
- Deviations from permitted conditions that require Plan modifications.

ExxonMobil will incorporate the collected monitoring data that characterizes the Project-specific factors and the changes needed, if any, to monitor increased potential risk to USDW and overall Plan compliance with the UIC Director's requirements. Plan amendments will be submitted within one year of an AoR reevaluation, following significant facility changes (such as addition of monitoring wells or newly permitted injection wells within the AoR), or as the UIC Director requires. Table 5-10 summarizes the various measurements discussed in the Testing and Monitoring Plan and the frequency of measurements for data collection and reporting purposes.

Table 5-10: Testing and Monitoring Plan Measurements and Frequency

Equipment / Measurement	Regulation	Objective	Frequency
Coriolis flow meter	146.90b	Measure mass flow rate	Continuously
Corrosion coupon	146.90c	Measure corrosion levels on the types of metal used in the Project	Quarterly
Injection stream sampling	146.90a	Provide more detailed analysis via periodic lab analysis of injection stream	Quarterly
Central pad temperature gauge	146.90a	Measure temperature of the total injection stream at the pad before partitioning to injections	Continuously
Injection wellhead tubing Pressure gauge	146.90a	Measure downstream of choke	Continuously
Injection wellhead annulus Pressure gauge	146.90b	Verify annulus pressure maintained	Continuously
Injection annulus pressure test	146.89b	Verify absence of leak in annulus	Annually
Injection Well downhole pressure and temperature gauge for active/open injection interval	146.90b	Measure downhole pressure and temperature (injection mass to volume conversion, verifying that it is not exceeding maximum pressure)	Continuously
	146.90f	Measure fall-off of pressure after abandoning injection stage and initiating injection in next stage above	At the end of every injection stage
	146.90g(1)	Direct measurement of pressure, sensitive to pressure from other injections, especially when injection intervals are staggered between wells	Continuously
Time-lapse surface seismic survey	146.90g(2)	Indirect method to monitor CO2 plume growth in the subsurface over time	Frequency from start of operations: Survey Event #1: completed; Survey Event #2: one to three years; Survey Event #3: six to eight years; Survey Event #4: 13 years. Contingent additional survey events as needed and approved by UIC Program Director.
	146.87a(3)(ii)	DTS for cement long portion of long-string casing where fiber is cemented in place	One-time event

Equipment / Measurement	Regulation	Objective	Frequency
	146.90e	DTS to assess potential flow through channels through or along cement	Annually
Injection well CIL	146.90e	Through-tubing log to detect loss of metal mass in casing due to corrosion	Baseline only; repeat survey is triggered if risk of leakage is apparent or upon request by UIC Program Director
In-zone monitoring well downhole P/T gauge	Not required	Potential to detect pressure anomaly Claimed as PBI [redacted] in case of leakage; will require careful analysis due to false positive potential from sensor drift, geomechanical effects, and preexisting pressure trends due to potential far-field activities	Continuously
Above-zone monitoring well fluid sampling from above UCCZ	146.90d	Above UCCZ fluid collection is recommended by guidelines	Quarterly
USDW fluid sampling	146.90d	Sample fluids from the Chicot Aquifer which is the most prolific USDW aquifer within the AoR, as recommended by guidelines, and analyze composition	Quarterly
Note: The word “continuous” is used to express the frequency of measures collected during monitoring equipment operation is defined as the instrument’s normal data collection frequency as defined by the manufacturing. The frequency will vary by instrument and application. Measurements that are collected “continuously” will be averaged across a reasonable and appropriate time interval for reporting the detection monitoring results during the operational phase of the Project.			

Underground Injection Control – Class VI Permit Application for Rose CCS Project Injection Wells No. 01, No. 02, and No. 03

APPENDIX E – QUALITY ASSURANCE SURVEILLANCE PLAN

Rose Carbon Capture and Storage Project

Jefferson County, Texas

ExxonMobil Low Carbon Solutions Onshore Storage, LLC

May 2025

APPENDIX E – QUALITY ASSURANCE SURVEILLANCE PLAN

TABLE OF CONTENTS

E.1 Introduction 7

E.2 Scope and Objective for QASP 7

E.3 Overview of ExxonMobil's Operations Control System 7

E.4 Alignment of Testing and Monitoring Plan with QASP 11

E.5 Criteria for Data Evaluation 11

E.5.1 Precision 11

E.5.2 Bias 12

E.5.3 Representativeness 17

E.5.4 Completeness 17

E.5.5 Comparability 17

E.6 Standards for Calibration of Instrument and Equipment 17

E.7 Data Management System and Acquisition 18

E.7.1 Acquisition of Well Completion Data 18

E.7.2 Acquisition of CO2 Stream Monitoring Data 19

E.7.3 Acquisition of Corrosion Monitoring Data 20

E.7.4 Acquisition of Injection Well Performance Data 21

E.7.5 Acquisition of Groundwater Monitoring Data 23

E.7.5.1 USDW Monitoring 23

E.7.5.2 First Water-Bearing Zone Above UCCZ 24

E.7.6 Sample Custody for CO2 and Groundwater Samples 28

E.7.7 Acquisition of CO2 Plume and Brine Pressure Front Tracking Data 28

E.8 Data Validation and Usability 29

E.9 Self-Assessment of QASP 30

E.10 References 31

List of Tables

Table E-1: Summary of Testing and Monitoring Plan 13
Table E-2: Summary of Field Instrumentation 15
Table E-3: Representative Logging Tool Specifications 18
Table E-4: Pressure Field Gauge – Central Injection Pad (PIT 52079 & PIT 52088) 19
Table E-5: Summary of Sample Containers, Preservation Treatments, and Holding Times for CO2 Gas Stream Analysis. 19
Table E-6: Summary of Analytical Parameters for CO2 Stream 20
Table E-7: Summary of Analytical Parameters for Corrosion Coupons 21
Table E-8: Summary of Measurement Parameters for Field Gauges 22
Table E-9. Field Stabilization Criteria for USDW Well Sampling 23
Table E-10: Summary of Sample Containers, Preservation Treatments, and Holding Times for Groundwater Samples 25
Table E-11: Summary of Analytical and Field Parameters for Fluid Samples in USDW 26
Table E-12: Downhole Pressure and Temperature Gauge Specifications 28
Table E-13: Downhole Pressure and Temperature Gauge Specifications 29

List of Figures

Figure E-1: Rose CCS Project Location Map 9

List of Acronyms and Abbreviations

Name	Definition
°C	degrees Celsius
AoR	Area of Review
CFR	Code of Federal Regulations
CO2	carbon dioxide
COC	Chain-of-Custody
EPA	U.S. Environmental Protection Agency
mg	Milligram
OCC	Operations Control Center

Name	Definition
Project	Rose Carbon Capture and Storage Project
QA	quality assurance
QASP	Quality Assurance and Surveillance Plan
QC	quality control
UIC	Underground Injection Control
USDW	Underground Sources of Drinking Water

Distribution Sheet

This Quality Assurance and Surveillance Plan was prepared and approved by ExxonMobil for use in collecting information for the operation and compliance of the Rose Carbon Capture and Storage Project. ExxonMobil will incorporate the quality assurance and surveillance actions described in this document into the standard ExxonMobil operating program, as appropriate, for the control of work associated with the scope of data quality and detection monitoring for the Project.

Revision History for QASP.

Version	Date	Description of Change
Version 1.0	August 30, 2024	Initial submission for the Class VI UIC Permit Application for the Project
Version 2.0	February 7, 2025	Updated based on modifications of the Testing and Monitoring Plan
Version 3.0	March 21, 2025	Updated based on clarification responses to EPA's RAI.
Version 4.0	May 08, 2025	Updated based on clarification responses to EPA's RAI #2

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E.1 Introduction

ExxonMobil Low Carbon Solutions Onshore Storage LLC submitted a Class VI Underground Injection Control (UIC) permit application for the Rose Carbon Capture and Storage Project (Project) in March 2024. The Project is in Jefferson County, Texas, and proposes to inject approximately 53 million metric tonnes of carbon dioxide (CO2) into the Fleming and Upper Frio Formations for geological storage of CO2 using three injection wells over a 13-year period. Figure E-1 provides the location of the Project in Jefferson County, Texas as well as the layout of the Project and the key features within and near the Area of Review.

Section 5 – Testing and Monitoring Plan of the permit application was developed for collecting data for tracking the CO2 plume and brine pressure front within the Area of Review. The Testing and Monitoring Plan provided the strategy and details of the data collection program in compliance with the requirements of the Code of Federal Regulations, Title 40, Section 146.90 [40 CFR 146.90]. The Quality Assurance and Surveillance Plan (QASP) is required pursuant to 40 CFR 146.90(k) for the purpose of establishing data collection objectives and procedures related to data quality and consistency throughout the lifecycle of the Project: the pre-operational, the injection operation phase; and the post-injection site closure phase. Some data collection activities were also referenced in Section 4 – Well Construction Plan and Operating Conditions and the Section 7 – Post-Injection Site Care and Site Closure Plan. The QASP also established data quality protocols for these sections of the permit application.

E.2 Scope and Objective for QASP

The scope of the QASP is based on the Testing and Monitoring Plan data collection activities for injectate monitoring; corrosion monitoring of the well's tubular, mechanical, and cement components; pressure fall-off testing; groundwater quality monitoring; and CO2 plume and pressure front tracking. The objective of the QASP is to provide standard procedures and practices that will be employed for collecting information and data related to the scope of activities. Quality assurance objectives were established for data management, sample collection and laboratory analysis, and reporting results as appropriate for on-going monitoring for the Project.

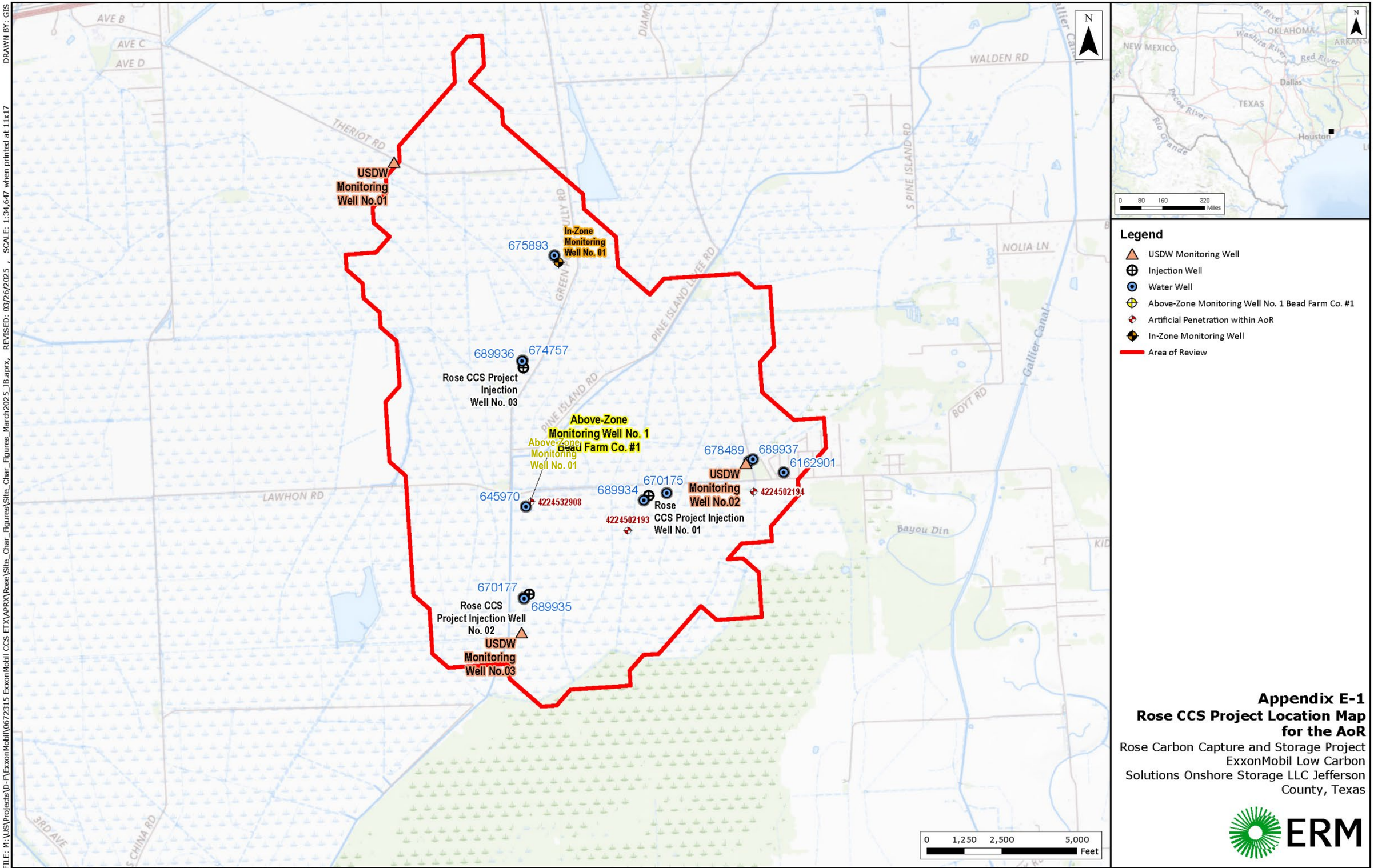
E.3 Overview of ExxonMobil's Operations Control System

The Project will be operated remotely by ExxonMobil's Operations Control Center (OCC). Operating philosophies have been developed which will be incorporated into Operating Instructions for OCC operators. The OCC is also stewarded by a robust Control Room Management Program per 49 CFR 195. OCC Operators operate and monitor the facility through a Supervisory Control and Data Acquisition system. Additionally, Field Operations will make periodic visits to perform surveillance, maintenance and integrity objectives.

In alignment with the requirements for the QASP, the following testing and monitoring activities will be included in the operations control program:

- Mechanical integrity test methods
- Continuous recording of operational parameters during injection
- Corrosion monitoring
- Pressure fall-off testing

- Monitoring of CO2 stream
- CO2 plume and pressure front tracking
  - Direct pressure front tracking
  - Plume and pressure front tracking using indirect geophysical techniques
- CO2 plume tracking using groundwater monitoring data
  - USDW monitoring well
  - Above-zone monitoring well



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Source: Esri - World Topographic Map; NAD 1983 StatePlane Texas South FIPS 4205 Feet

Appendix E-1
Rose CCS Project Location Map for the AoR
Rose Carbon Capture and Storage Project
ExxonMobil Low Carbon Solutions Onshore Storage LLC Jefferson County, Texas

ERM

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An appropriate organizational structure, roles and responsibility matrix, and communications plan will be developed as part of the operations control plan for the Project that complies with the requirements of the Class VI UIC permit, in coordination with the UIC Program Director review and approval of the QASP.

E.4 Alignment of Testing and Monitoring Plan with QASP

The QASP identifies a comprehensive list of quality assurance procedures that align with the data collection and testing requirements identified in the Testing and Monitoring Plan. Table E-1 provides a summary of each test and monitoring activity in the Testing and Monitoring Plan and the associated feature described in the QASP including source of the data or measurement, the method of data acquisition, and the use of third-party laboratory for analysis, as appropriate.

Many of the measurements rely upon the use of field instrumentation. Table E-2 summarizes a list of the instruments planned for use and the data acquisition objectives for each instrument.

The indirect monitoring technique for tracking the CO2 plume and pressure front is a surface seismic monitoring via surface seismic sources and receivers near injectors. As outlined in Section 5 – Testing and Monitoring Plan, a series of seismic events are planned to acquire seismic data for analysis. The seismic events will be conducted by a qualified third-party contractor and the acquired seismic data will be provided to ExxonMobil with data quality qualifiers provided by the contractor, should uncertainty be apparent in the data.

E.5 Criteria for Data Evaluation

Groundwater monitoring and sampling is subject to potential sources of variability, such as:

- Natural heterogeneity in fluid geochemical composition, total dissolved solids, and formation pressure and temperature;
- Instrument variability due to calibration and drift during sampling or analytical activity;
- Alternating staff / accredited labs responsible for collecting/analyzing samples;
- Changes in environmental conditions during field sampling activities including temperature, rainfall, dust, nearby agricultural activities; and
- Typographic errors related to data input.

The following criteria are provided to help identify instances when variability has been introduced during the sampling and analysis phase and is not related to actual changes in groundwater quality conditions. These criteria and/or others will be considered when evaluating the data usability for data qualification (if warranted), reporting data quality, and decision-making purposes.

E.5.1 Precision

Precision for physical and analytical measurement parameters is detailed within the individual laboratory's test methodology and within established detection limits. Laboratory equipment calibration and maintenance are described by the individual laboratory in a typical analytical quality assurance manual or equivalent. Following laboratory selection, the laboratory's analytical quality assurance manual can be provided upon request. Laboratory assessment of analytical precision will be the responsibility of the individual laboratories per their standard operating procedures and the analytical methods being used.

E.5.2 Bias

An assessment of bias is applicable to laboratory analyses where a difference between the reference value and the average of measurements made on the same sample can be quantitatively measured. The potential for bias is not applicable in direct measurements including logging, temperature, and pressure. Evaluation of analytical bias will be the responsibility of the individual laboratories per their analytical quality assurance manual or equivalent. Analytical results received from individual laboratories will be reviewed to evaluate potential for analytical bias.

Table E-1: Summary of Testing and Monitoring Plan

Measurement	Purpose	Location(s)	Project Phase & Frequency			Descriptive Features in QASP		
			Pre-Injection	Operation	Post-Injection Site Care	Data Source Type	Method of Data Acquisition	Lab/Custody Procedures
Carbon Dioxide Stream Analysis	CO2 stream composition	Central Pad	Baseline	Quarterly	NA	One sample per quarter	Chemical Analysis	Accredited laboratory receiving samples under chain-of-custody
Carbon Dioxide Stream Temperature	Monitor injection temperature	Central Pad	Baseline	Continuous	NA	Coriolis meter/wellhead pressure logger	Direct Measurement	None
Injection Rate, Density, and Mass	Rate and volume monitoring	Central Pad	NA	Continuous	NA	Coriolis meter	Direct Measurement	None
Injection Pressure	Compliance with operating permit	Surface, injection well piping	NA	Continuous	NA	Pressure gauge at central injection pad	Direct Measurement	None
Annular Pressure	Pressure monitoring and well integrity	Injection Wells	NA	Continuous	NA	Pressure gauge	Direct Measurement	None
Corrosion Monitoring	Well Integrity	Central Pad downstream of metering skid	NA	Quarterly	NA	Corrosion coupon	Physical Analysis	Accredited laboratory receiving samples under chain-of-custody
Internal Mechanical Integrity – Injection Tubing	Well Integrity	Injection Wells No. 01, No. 02, and No. 03	Baseline	Continuous	Prior to P&A	Tubing annulus pressure measured at surface of wellhead	Direct Measurement	None
External Mechanical Integrity	Well Integrity	Injection Wells No. 01, No. 02, and No. 03	Baseline	Continuous Annual (surveys)	Prior to P&A	DTS Temperature surveys Pulse Neutron Log in OA mode	Direct Measurement	None
Containment and Control	Assess CO2 plume and brine pressure front Containment below UCCZ	USDW Monitoring Wells No. 01, No. 02, No. 03 Above-Zone Monitoring Well No. 01 (Bead Farm Co. #1)	Baseline	Quarterly	Annual	One sample per well	Direct Measurement	Accredited laboratory receiving samples under chain-of-custody
Direct CO2 Plume/Pressure Front Tracking	Demonstrate compliance with permit and calibrate plume model	Injection Wells No. 01, No. 02, and No. 03 In-Zone Monitoring Well No. 01	Baseline	Continuous	Continuous for In-Zone Monitoring Well No. 01	Downhole tubing- mounted pressure and temperature gauge Downhole casing mounted pressure and temperature gauge	Direct Measurement	None
Indirect CO2 Plume/Pressure Front Tracking	Demonstrate compliance with permit and calibrate plume model	Timelapse seismic surveys	Baseline	Two Survey Events	One Survey Event	Surface seismic monitoring	Indirect Measurement	None
Indirect CO2 Plume/Pressure Front Tracking	Demonstrate compliance with permit and calibrate plume model	Surface Seismic sources and receivers near injectors within AoR	Continuous	Continuous	Continuous	Surface passive seismicity monitoring	Continuous	None

Measurement	Purpose	Location(s)	Project Phase & Frequency			Descriptive Features in QASP		
			Pre-Injection	Operation	Post-Injection Site Care	Data Source Type	Method of Data Acquisition	Lab/Custody Procedures
Pressure Fall-Off Testing	Assess injection well performance and formation permeability	Injection Wells No. 01, No. 02, and No. 03	NA	At end of each injection stage	None	Downhole tubing mounted pressure and temperature gauge	Direct Measurement	None
DTS = distributed temperature sensing; NA= not applicable; OA = Wireline deployed oxygen activation (OA) log; P&A = plug and abandon; UCCZ = upper composite confining zone; AoR = Area of Review								

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Table E-2: Summary of Field Instrumentation

Monitoring Location	Instrument Type	Compliance Objective
Central pad before distribution system	Pressure and temperature gauge	Monitor the pressure and temperature of the CO2 liquid at the point of intake prior to distribution.
	Coriolis meter	Measure the mass flow rate of CO2 liquid at the point of intake prior to distribution.
	Corrosion coupons	Measure corrosion rates for well completion materials downstream of metering skid.
Injection Wells No. 01, No. 02, and No. 03	Downhole mounted pressure/temperature gauge	Measure pressure and temperature in the four injection intervals during operation and prior to injection stage changes.
	Annular pressure testing	Measure tubing casing pressure to assess internal mechanical integrity.
	Fiber optic cable for DTS measurements	Measure temperature in the injection zone and above the injection zone to assess the potential for loss of containment.
	Downhole tubing mounted pressure and temperature gauge	Measure temperature and pressure inside tubing above packer for CO2 plume and pressure front tracking.
	Wellhead pressure gauge	Measure pressure inside the tubing at the wellhead prior to injection.
	Coriolis Meter	Measure the mass of CO2 fluid at each injection well pad prior to injection tubing.
USDW Monitoring Wells No. 01, No. 02, No. 03	Portable field meters for measuring groundwater stabilization parameters such as specific conductance, temperature, dissolved oxygen, turbidity, and pH	Measure field parameters prior to collecting groundwater samples to assess stabilization of groundwater conditions in screened interval prior to sample collection.
In-Zone Monitoring Well No. 01	Tubing encapsulated conductor cable with in-line pressure/ temperature gauges	Measure temperature and pressure in the four injection intervals and the first water-bearing zone above the UCCZ for CO2 plume and pressure front tracking.

Monitoring Location	Instrument Type	Compliance Objective
	DTS Interrogator and fiber cables	Measure temperature from the top of the UCCZ to the bottom of the injection interval.
Above-Zone Monitoring Well No. 01 (Bead Farm Co. #1)	Portable field meters for measuring groundwater stabilization parameters such as specific conductance, temperature, dissolved oxygen, turbidity, and pH	Detection monitoring for presence of CO2 and brine in the first water-bearing zone above the UCCZ.
DTS = distributed temperature sensing; UCCZ = upper composite confining zone		

E.5.3 Representativeness

Representativeness is the degree to which data expresses a characteristic of a population, parameter variation at a point, or an environmental condition. Representativeness for analytical results of groundwater samples will be estimated by ion and mass balances. Ion balances with ±10% error or less will be considered valid. Mass balance assessment will be used in cases where the ion balance is greater than ±10% to help assess the source of error. For a sample and its duplicate, if the relative percent difference is greater than 10%, the sample may be considered non-representative.

To assess sample representativeness, sample collection will be performed in accordance with procedures recommended by the U.S. Environmental Protection Agency (EPA) for collection and preservation and EPA-recommended holding times specified within a given method.

E.5.4 Completeness

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount that was expected under normal conditions. It is expected that the designated analytical laboratory will provide data meeting the quality control (QC) acceptance criteria for 90 percent or more for the samples tested. In addition to the laboratory internal quality assurance (QA) / QC processes, the sampling contractor will evaluate the data validation and whether samples meet the QC acceptance criteria. For direct pressure and temperature measurements, it is expected that data will be recorded no less than 90% of the time.

E.5.5 Comparability

Data comparability is defined as the degree of confidence with which one data set may be compared to another. The groundwater samples will be comparable if collection, compositing, splitting, and testing methods are the same and the measurement units are the same. Comparability for field measurements will be achieved if the test procedures and measurement units within each group of tests are the same (e.g., pH, conductivity, temperature). Operating procedures will be followed to assure comparability including those specified in published EPA guidance documents.

E.6 Standards for Calibration of Instrument and Equipment

The following standards for operation and care of field instruments and equipment are planned in support of quality assurance. Both field equipment and laboratory instruments will be calibrated in accordance with the manufacturer guidelines. Permanent data loggers will be calibrated prior to or during the installation process and then checked for precision and accuracy in accordance with the manufacturer's guidelines. Calibration of field instruments will consist of the measurement of instrument response to standards of known composition and concentration and may include the preparation of a standard response curve for the compound or parameter at different concentrations.

Portable field instruments will be maintained in accordance with the procedures and schedule prescribed by the manufacturer to enable the collection of precise and accurate data. Field instruments and equipment will be acquired, inspected, and accepted for the field activity. Inspections will be conducted prior to use in accordance with the operational manuals.

E.7 Data Management System and Acquisition

Data, in the form of measurements and information about the performance of the injection system, will be collected electronically or manually and stored in an electronic data management system. This system will be aligned with the compliance requirements of the Class VI UIC permit. The electronic data collection systems are envisioned to be a part of the operational management program for the Project. Manual data collection activities, such as ground water monitoring, will be documented in either written or electronic data entry forms. The types of information collected include time and date of activity, person(s) performing activity, location(s), equipment, calibration data, and field parameter values.

Overall Project data quality will be managed through a system of review extending from field and laboratory through the data reduction and reporting process. ExxonMobil will perform a quality assurance review of the data entered the data management system. Data acquired from the injection system may be uploaded directly into the data management system. Analytical results for CO2 gas composition and groundwater will be obtained from the laboratory using an electronic data deliverables. ExxonMobil will utilize its internal data management system for archiving project documentation, data security, and backup.

The following discussion presents the data acquisition plans for each major recording.

E.7.1 Acquisition of Well Completion Data

ExxonMobil employs a third-party contractor to conduct a series of tests on completed wells using downhole tools. The data obtained from these tools is used to assess the alignment of the actual well completion with the well design. Table E-3 provides a summary of representative logging tools and the anticipated data to be obtained from these tools. The quality assurance process is provided as part of the services of the third-party contractor. ExxonMobil reviews the provided test results and associated data quality reports to identify whether the data are fit for purpose.

Table E-3: Representative Logging Tool Specifications

Parameter	Logging Speed	Vertical Resolution	Acquired Data	Temp. Rating	Pressure Rating
Ultrasonic Casing/ Cement Inspection	400 to 4,500 ft/hr	0.3 to 6.0 in	Image of casing and cement throughout well completion	350 °F	20,000 psi
Electromagnetic	600 to 900 ft/hr	Tubular Defect Location and Resolution: • First Tubular: 1 ft • Second Tubular: 2 ft • Third Tubular: 3 ft • Fourth Tubular: 4 ft • Fifth Tubular: 4 ft	Electromagnetic log of casing thickness	350 °F	15,000 psi
Cement Bond Log	Up to 3,600 ft/hr	3 ft	Image of cement between casing and formation	350 °F	20,000 psi

Parameter	Logging Speed	Vertical Resolution	Acquired Data	Temp. Rating	Pressure Rating
Caliper	1800 to 3600 ft/hr	0.12 in	Log of inside diameter of casing	350 °F	20,000 psi
Temperature Log	NA	1.2 in to 6 in depending on sampling rate	Vertical temperature profile of well	350°F	20,000 psi
°F = degrees Fahrenheit; ft = foot; ft/hr = feet per hour; in = inch; NA= not applicable; psi = pounds per square inch					

E.7.2 Acquisition of CO2 Stream Monitoring Data

Table E-4 provides the pressure gauge data quality specifications for gauge to be located at the central injection pad. Samples of the CO2 will be collected to monitor to chemical composition in addition to monitoring the mass flow, temperature, and pressure of the CO2.

Table E-4: Pressure Field Gauge – Central Injection Pad (PIT 52079 & PIT 52088)

Parameter	Value
Calibrated working pressure range	0 to 4000 psig
Initial pressure accuracy	+/-0.04% of span (1.6 psig)
Pressure resolution	+/- 0.000061% of span (0.244 psig)
Pressure drift stability	0.2% of upper range limit (8 psig) for 10 years
psig = pounds per square inch gauge	

Samples of CO2 will be collected at the central pad using the sampling container types, preservation, and holding times provided in Table E-5.

Table E-5: Summary of Sample Containers, Preservation Treatments, and Holding Times for CO2 Gas Stream Analysis.

Sample	Volume/Container Material	Preservation Technique	Sample Holding time (max)
CO2 gas stream	(2) 2L MLB Polybags (1) 75 cc Mini Cylinder	Sample cooler/cabinet	5 days
cc = cubic centimeter; L = liter			

The samples will be obtained at a sample port on the Project's central pad and analyzed for the list of constituents and parameters in Table E-6. The central pad is the connection point between the CO2 pipeline and the sequestration field's distribution system. The sampling

station will be equipped with the ability to purge and collect a gas sample into a sealed container.

Table E-6: Summary of Analytical Parameters for CO2 Stream

Parameters[1]	Analytical Methods[2]	Detection Limit/Range	Typical Precisions
Oxygen	ISBT 4.0, GC/DID or Method 3A	1 µL/L to 30 µL/L (ppm v/v)	± 10% reading
Nitrogen	ISBT 4.0, GC/DID or by difference	1 + µL/L (ppm v/v)	± 10% reading
Carbon monoxide	ISBT 5.0, GC/DID	1 µL/L to 10 µL/L (ppm v/v)	± 10% reading
Oxides of nitrogen	ISBT 7.0	0.5 µL/L to 5 µL/L (ppm v/v)	± 20% reading
Total hydrocarbons	ISBT 10.0, GC	1 µL/L to 50 µL/L (ppm v/v)	5-10% of reading
Methane	ISBT 10.1, GC	1 µL/L to 50 µL/L (ppm v/v)	5-10% of reading
Sulfur dioxide	ISBT 14.0, GC	0.05 µL/L to 1.0 µL/L (ppm v/v)	5-10% of reading
Hydrogen sulfide	ISBT 14.0, GC	0.01 µL/L to 0.1 µL/L (ppm v/v)	5-10% of reading
CO2 purity	ISBT 2.0, GC/DID or Method 3A	5.0% to 99.9%	± 10 % of reading
Water	ISBT 3.0, GC/FTIR, Method 320, EPA Method 4	1.0% to 99.9%	± 10 % of reading
µL/L = microliters per liter; DID = Discharge Ionization Detector; FTIR = Fourier Transform Infrared Spectroscopy; GC = gas chromatography; ISBT = Internation Society of Beverage Technologists; ppm = parts per million; v/v = volume/volume			

The analytical methods, detection limit and range, and typical limits of precision are provided. The quality control requirements by the laboratory will be aligned with the laboratory's certification process and may include routine calibrations per ISBT standards, method blanks, analysis of duplicate samples, and matrix spike protocols. ExxonMobil is relying on the data quality report provided by the laboratory to assess the accuracy and precision of the reported results.

E.7.3 Acquisition of Corrosion Monitoring Data

Monitoring of well tubing and casing material corrosion will be conducted on a routine basis to evaluate the corrosion coupon monitoring system. Table E-7 provides analytical testing plan for the corrosion coupons. As shown, ExxonMobil plans to follow ASTM Standard G1-03(2017)e1 and recommendations of AMPP NACE SP0775-2023 (2023). Coupons shall be sent to a qualified contractor for analysis that will use AMPP NACE SP0775-2023 for assessing coupons. The typical data reported includes length, width, thickness, weight (± 0.5 milligrams [mg]), coupon identification number, exposed dimensions, calculated surface area including the edges. The contractor will provide quality control documentation with the analytical report for reliance

by ExxonMobil. Holding times and preservation techniques are not applicable to corrosion coupon samples, which are maintained physically separated to prevent abrasion.

Table E-7: Summary of Analytical Parameters for Corrosion Coupons

Parameters	Analytical Methods	Detection Limit/Range	Typical Precisions	QC Requirements
Mass and Thickness	Baseline: ASTM G1-03(2017)e1 After Baseline: AMPP NACE SP0775-2023	± 0.2 mg	± 1%	Laboratory equipment calibration to manufacturers specification
ASTM = American Society for Testing and Materials; AMPP = Association for Materials Protection and Performance; NACE = National Association of Corrosion Engineers				

E.7.4 Acquisition of Injection Well Performance Data

ExxonMobil will install and use continuous measurement devices to monitor injection pressure, rate, and mass injected; the pressure on the annulus between the tubing and the long-string casing; and the temperature of the CO2 stream, as required under [40 CFR 146.88(e)(1), 146.89(b), and 146.90(b)]. Table E-8 provides a summary of the data acquisition and measurements limits. Data will also be collected to document the addition or removal of any fluid from the annulus system. ExxonMobil will utilize the following continuous monitoring devices:

- A Coriolis flow meter will be used to measure the flow rate at the central pad and compute flow rates for each injection well. The Coriolis flow meter directly measures the mass flow rate of the injected fluid.
- The injected CO2 stream pressure will be continuously monitored in the CO2 flowline near the wellhead interface. The annulus pressure will also be continuously recorded. The combined wellhead and downhole monitoring data will be used to continuously characterize the injection stream in detail.
- Reservoir temperatures and pressures will be measured using a fiber optic cable, embedded in the cemented annulus of the long-string casing, and a tubing encapsulated conductor pressure and temperature gauge on the injector well tubing.
- The annular pressure between the tubing and the injection casing string will be monitored on a continuous basis. The pressure gauge on the annulus will be tied into the data management system or a suitable equivalent system and set to alarm if pressure or volumes move outside set tolerances. The annulus tanks are to be equipped with a level transducer or an armored reflex sight glass and an independent liquid fill nozzle. If any annulus fluid is added or removed, it will be recorded. An annulus tank level is to be recorded on any day when injection occurs.

The calibration and operating methods will be based on the manufacturer's specifications. For the Coriolis meter, the calibration and operating methods will also be consistent with the requirements of 40 CFR 98.443(f)(2), which includes quarterly verification via alignment with check meter and online diagnostics as well as an eight-year cycle of off-site laboratory

calibration. The Coriolis meter will be out of service for short periods once per quarter for zero flow checks.

Table E-8: Summary of Measurement Parameters for Field Gauges

Equipment/Location	Parameter	Value
Pressure Field Gauge – Pressure Gauge (PIT 52127 Upstream of Choke)	Calibrated working pressure range	0 to 3,000 psig
	Initial pressure accuracy	+/-0.04% of span (1.2 psig)
	Pressure resolution	+/- 0.000061% of span (0.183 psig)
	Pressure drift stability	0.2% of upper range limit (8 psig) for 10 years
Pressure Field Gauge – Wellhead Pressure Gauge (PIT 52136B D/S of Choke)	Calibrated working pressure range	0 to 3,000 psig
	Initial pressure accuracy	+/-0.04% of span (1.2 psig)
	Pressure resolution	+/- 0.000061% of span (0.183 psig)
	Pressure drift stability	0.2% of upper range limit (8 psig) for 10 years
Pressure Field Gauge – Downhole Pressure Gauge	Calibrated working pressure range	200 to 10,000 psi
	Initial pressure accuracy	0.015 psi
	Pressure resolution	0.006 psi/sec
	Pressure drift stability	0.02 psi/year at max pressure and temperature
Temperature Field Gauge – Downhole Temperature Gauge.	Calibrated working temperature range	25 to 150 °C
	Initial temperature accuracy	0.5 °C
	Temperature resolution	0.005 °C/sec
	Temperature drift stability	0.1 °C/year at max temperature
Mass Flow Rate Field Gauge – Coriolis Meter at Central Injection Pad	Calibrated working flow rate range	0 to 200,000 kg/hr
	Initial mass flow rate accuracy	+/-0.1% of rate
	Mass flow rate resolution	Pulses +/-50 ppm
	Mass flow rate drift stability	At Central Injection Pad: Zero Point Stability – 32 kg/hr for At Well Pad: Zero Point Stability – 14 kg/hr
	Calibrated working temperature range	0 to 300 °F
	Initial temperature accuracy	0.06 °F

Equipment/Location	Parameter	Value
Pre-Injection Temperature Transmitter	Temperature resolution	0.000183 °F
	Temperature drift stability	+/-0.1% of reading or 0.18 °F whichever is greater for two years
°C = degrees Celsius; °F = degrees Fahrenheit; kg/hr = kilograms per hour; ppm = parts per million; psi = pounds per square inch; psig = pounds per square inch gauge; sec = second;		

E.7.5 Acquisition of Groundwater Monitoring Data

Samples of groundwater will be collected from Underground Source of Drinking Water (USDW) Monitoring Well No. 01, USDW Monitoring Well No. 02, and USDW Monitoring Well No. 03 and from the first water-bearing zone above the UCCZ at Above-Zone Monitor Well No. 01.

E.7.5.1 USDW Monitoring

For USDW sample collection, a decontaminated submersible pump equipped with new dedicated and disposable sampling tubing. The tubing intake will be set in the middle of the screen interval. An in-line flow-through cell (AquaTROLL 6000 or similar) will be used to continuously monitor water quality indicator parameters during well purging. A set of field measurements (Table E-9) will be collected to evaluate the trend in stability of certain parameters. The measured parameter values will be recorded in field sampling records and compared with the stabilization criteria listed in Table E-9.

Table E-9. Field Stabilization Criteria for USDW Well Sampling

Field Parameter	Stabilization Criteria
pH	+/- 0.2 units
Temperature	+/- 3%
Specific conductance	+/- 3%
Dissolved oxygen	+/- 10%
Turbidity	Stabilized or <10 NTUs
NTU = nephelometric turbidity unit	

Once water quality parameters in the purged well have stabilized, laboratory-provided sample containers will be filled, capped, labeled, and placed in a cooler with ice for transport to the laboratory. Sample containers and/or bags will be new and used as received from the selected laboratory. Table E-10 provides the specifications for sample containers. Table E-11 provides the analysis plan for groundwater samples.

Each sample will be containerized and labeled at the time of collection. The label will contain a unique sample number identifying the sampling location and sample date. The individual sample containers will be placed in a cooler with packing material. Ice or chemical ice packs will be placed on the top of the packing materials to maintain the applicable preservation temperature

(typically less than 6 degrees Celsius [°C] and without allowing the sample to become frozen) while in transport to the laboratory.

The sampler will remove waste associated with sampling activities (tubing, personal protective equipment, consumables) from the Project. Table E-10 details the preservation techniques and holding times for aqueous samples associated with this Project. Holding times and preservation techniques are not applicable to corrosion coupon samples, which are maintained physically separated to prevent abrasion.

Decontamination procedures will be followed between sampling at each monitoring well to reduce the potential for cross-contamination of groundwater samples. Field equipment will be cleaned and rinsed per standard field decontamination procedures between sampling locations. Nitrile gloves will be worn during groundwater sampling activities and while handling sample containers.

Data precision for groundwater samples will be assessed by the collection and analysis of field duplicate samples to assess the potential for sample result variability because of variation and/or error in sampling techniques. Field duplicates will be collected by taking a second sample using the same collection method in the field at a given location immediately following the original sample. The original sample will be compared with the duplicate sample to assess the degree of variability in reported results. The frequency of field duplicates is at least one sample per sample group or 10% for sample sizes above 20 samples.

For each sampling event, the field sampling activities will be recorded at each sampling location, when calibration of field instruments, details of well purging process, field parameter measurements, sample collection date and time, QA/QC sampling, and details of sample handling, storage, and shipping. The samples will be shipped under a chain-of-custody process, signed by the sampler and, upon transfer of custody to a commercial delivery service or the laboratory, tracking information will be retained. The samples will be shipped to one or more accredited laboratories for analysis.

The individual sample containers will be placed in a cooler with packing material. Ice or chemical ice packs will be placed on the top of the packing materials to maintain the applicable preservation temperature (typically less than 6 °C and without allowing the sample to become frozen) while in transport to the laboratory.

E.7.5.2 First Water-Bearing Zone Above UCCZ

Bead Farm Co. #1 will be converted to Above-Zone Monitoring Well No. 01. It will be equipped with tubing and a packer to act as a conduit for fluid collection. The sampling depth of approximately 2,560 to 2,580 feet corresponds to the first laterally continuous water-bearing formation above the UCCZ. Water samples will be collected utilizing the same procedures as the USDW samples. Monitoring will be quarterly for the first two years and then annually for the remainder of the operational phase. Table E-10 provides the specifications for sample containers and details the preservation techniques and holding times for aqueous samples associated with this Project. Table E-11 provides the analysis plan for all groundwater samples.

Table E-10: Summary of Sample Containers, Preservation Treatments, and Holding Times for Groundwater Samples

Target Parameters	**Volume/Container Material**	**Preservation Technique**	**Sample Holding Time**
EPA Method 6020A Dissolved cations (Ba, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mn, Mo, Ni, P, K, Si, Na, Sr, V, Zn)	1 liter, plastic	0–6 °C	60 days
EPA Method 300.0 Dissolved anions (HCO3, B(OH)4, Br, CO3, Cl, F, I, NO3, NO2, PO4, SO4, S)	1 liter, plastic	0–6 °C	28 days
Method SM 2540C Total Dissolved Solids	1 liter, plastic	0–6 °C	7 days
Method SM 2320B Alkalinity Bicarbonate (HCO3)	500 mL, plastic	0–6 °C	7 days
RSK-175 Gas composition (CO2)	Three 40 mL VOA vials	0–6 °C	14 days
RSK-175 Gas composition (CH4)	Two 40 mL VOA vials	0–6 °C, hydrochloric acid	14 days
Calculated from TKN Method 351.2 Nitrite/Nitrate 353.2	Three 250 mL, plastic	0–6 °C, sulfuric acid	48 hours
Field Methods: Electrical Conductivity, Temperature, pH, DO, ORP, turbidity	Field measurement	Not Applicable	Not Applicable
Note: The listed sample container sizes and preservation techniques may be revised based on input from the accredited laboratory selected to do the work. DO = dissolved oxygen; ORP = oxidation-reduction potential; VOA = Volatile Organic Analysis			

Table E-11: Summary of Analytical and Field Parameters for Fluid Samples in USDW and Above UCCZ

Parameters	Analytical Methods [1,2]	Typical Detection Limit or Range [3]	Typical Precisions [3]	QC Requirements [2]
Dissolved Cations: Ba, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mn, Mo, Ni, P, K, Si, Na, Sr, V, Zn	EPA Method 6020A	0.001 to 0.1 mg/L [4]	±15%	Daily calibration; blanks, duplicates, and matrix spikes at 10% or greater frequency
Dissolved Anions: HCO3, B(OH)4, Br, CO3, Cl, F, I, NO3, NO2, PO4, SO4, S	EPA Method 300.0	0.001 to 0.1 mg/L [4]	±15%	
Total dissolved solids	Method SM 2540C	10 mg/L	±5%	
Alkalinity Bicarbonate (HCO3)	Method SM 2320B	2 mg/L	±10%	
pH (field)	Field measurement	0–14 pH [5]	±0.1	Factory calibration and user calibration per manufacturer's instructions, duplicates
Electrical conductivity (field)	Field measurement	0–100 mS/cm [5]	±1%	
Temperature (field)	Field measurement	-10 to -55 °C [5]	±0.10	
Dissolved Oxygen (field)	Field measurement	0-50 mg/L	±0.10 mg/L	
Gas composition (CO2)	RSK-175 or ASTM D513-16 [6] depending on laboratory availability	0.1 µg/L	±15%	Daily calibration; blanks, duplicates, and matrix spikes at 10% or greater frequency
Gas composition (CH4)	RSK-175	0.1 µg/L	±15%	
Gas composition (N2)	TKN Method 351.2; Nitrite/Nitrate 353.2; or RSK-175 depending on laboratory availability	0.1 mg N	±15%	

Notes:

1. An equivalent method may be employed with the prior approval of the UIC Program Director.

Parameters	Analytical Methods [1,2]	Typical Detection Limit or Range [3]	Typical Precisions [3]	QC Requirements [2]
2. The listed analytical methods and QC requirements may be revised based on input from the accredited laboratories or field instrumentation selected to do the work. 3. The exact detection limit, range, and precision can vary depending on the sample matrix and the conditions under which the analysis is performed. Precision may also be affected by equipment utilized in analytical procedures by laboratory. 4. Analyte, dilution, and matrix dependent. 5. Dependent on manufacturer specification and calibrated range. 6. ASTM 2017b µg/L = micrograms per liter; mg N = milligrams nitrogen; mS/cm = milliSiemens per centimeter;				

E.7.6 Sample Custody for CO2 and Groundwater Samples

Possession of samples collected in the field will be traceable from the time of collection until analysis in the laboratory. The Chain-of-Custody (COC) form will be completed daily for samples collected during the sampling event and will include project name and number, sample identification number and location, name(s) of individual(s) who collected the sample(s), type of sample, number and type of containers, date and time of collection, required analyses, preservatives, shipping or courier data, and signatures documenting transfer of sample custody. From sample collection through laboratory analysis to the final evidence files, the procedures for sample handling and custody are described below. The method for demonstrating custody is a sample or evidence file is in one's custody if it is:

1. In one's physical possession.
2. In one's view during their possession.
3. In one's physical possession and placed in a secured location.
4. In a secured area restricted to authorized personnel only.

The COC form is typically provided by the laboratory with the sample kit. Once the sample containers are filled, the COC form will always accompany the sample. Individuals receiving and relinquishing the samples will sign, date, and note the time of transfer on the record. A commercial delivery service will be identified by company name. Samples will remain in the physical possession of the person to whom they are assigned until the samples are shipped to the laboratory or are stored prior to shipping. The COC form will accompany the samples to the laboratory and subsequently be returned to the Project files.

E.7.7 Acquisition of CO2 Plume and Brine Pressure Front Tracking Data

In-Zone Monitoring Well No. 01 will be equipped with a tubing encapsulated conductor cable with in-line pressure/temperature gauges to collect continuous pressure and temperature measurements for evaluating the rate of CO2 plume and pressure front movement. This system will also provide data for assessing internal mechanical integrity. Table E-12 provides a list of pressure and temperature gauge specifications for the three injection wells and in-zone monitoring well.

Table E-12: Downhole Pressure and Temperature Gauge Specifications

Parameter	Value
Calibrated working pressure range	200 to 10,000 psi
Initial pressure accuracy	0.015 psi
Pressure resolution	0.006 psi/sec
Pressure drift stability	0.02 psi/year at max pressure and temperature
Calibrated working temperature range	25–150 °C
Initial temperature accuracy	0.5 °C
Temperature resolution	0.005 °C/sec

Parameter	Value
Temperature drift stability	0.1 °C/year at 177 °C
Max temperature	177 °C
Instrument calibration frequency	Per manufacturer's specifications
psi = pounds per square inch	

Each well will also be equipped with a distributed temperature sensing cable to assess external mechanical integrity. Table E-13 provides the specifications for the distributed temperature sensing cable.

Table E-13: Downhole Pressure and Temperature Gauge Specifications

Parameter	Logging Speed	Vertical Resolution	Temp. Rating	Pressure Rating
Distributed Temperature Sensing	12 seconds	0.5-meter	-82–177°C	Not Applicable

E.8 Data Validation and Usability

Data validation procedures will be performed for both field and laboratory data to assess whether the requirements of the specified QC acceptance criteria were met. Checklists, forms, and calculations may be developed to meet the Class VI UIC permit requirements for the Project. ExxonMobil and/or its designated contractor(s) will provide verification and validation of data generated with the Project. This process may include the following elements:

1. Review the cover letter signed by the Laboratory Project Manager (or designee) to assess the laboratory narrative report regarding the overall performance of the laboratory and potential deviations or uncertainties in the data.
2. Review the case narrative discussing any technical problems or deviations from the analytical methods (e.g., did the laboratory receive the samples in good condition). Samples are considered in good condition if the samples meet temperature and preservative requirements and sample receipt condition is acceptable (i.e., the bottles are not broken and the cooler custody seals are intact).
3. Review date and time of receipt relative to holding time requirements.
4. Review COC forms to verify that samples were maintained under COC protocol with signatures from the field personnel and the lab personnel.
5. Compare sampling dates to sample extraction and analysis dates to check that these procedures were completed within proper holding times.
6. Review target constituent list, analytical methods, and result units for alignment with permit requirements.
7. Review lab summary/chronicle describing client ID/analysis, laboratory identification number, prep number, collection date, extraction/prep date, analysis date, and laboratory management sign off.

8. Review sample data report including the results listed by analytical method with sample preparation, extraction, cleanup, digestion, and analytical methods; analysis and extraction dates; analyst initials; qualifiers; and qualifier definitions.
9. Review QC summary report including date of analyses, parameters assessed, system monitoring compound summary, method blank data, sample duplicates and control samples, surrogate spike recoveries, and matrix spike/matrix spike duplicate (MS/MSD) results.
10. Review the laboratory case narrative and any corrective actions necessary and data quality assessment items.

The data quality indicators of precision, accuracy, representativeness, completeness, comparability, and sensitivity associated with newly collected data will be reviewed and an assessment made regarding the usability of the data. Data validation may include the review and evaluation of multiple data characteristics including the unit(s) of measurement, sample holding times, and QA/QC results (such as field duplicates, trip blanks, matrix spike samples). After sufficient data have been collected, additional methods, such as those described in the EPA Unified Guidance (EPA 2009), may be used to examine variations and trends in the data.

If at any point the occurrence of erroneous data were to become apparent, corrective actions will be taken to identify the cause of the error, recommend a feasible corrective action, seek approval if needed to implement corrective action, and implement the corrective action. Field team members may identify problems during sampling and laboratory analysts may identify problems during chemical analyses. Field staff will be responsible for testing equipment and performing corrective actions on broken or malfunctioning field equipment. If corrective action cannot be taken in the field, then equipment will be repair or replaced. Significant corrective actions affecting analytical results will be documented in field activity reports and re-measurement/re-sampling may occur as appropriate.

E.9 Self-Assessment of QASP

The quality system described in the QASP will be assessed to reduce the potential for questionable data to be used in the demonstration of regulatory compliance. The scope of internal assessments may include the following:

- Surveillance of scheduled field activities including sample collection, sample handling, logging, and indirect data collection (e.g., seismic data);
- Review of laboratory data management activities;
- Examination of data reporting systems;
- Verification of instrument and equipment acceptability including maintenance and calibration frequency;
- Reevaluation of analytical method implementation, including CO2 stream and corrosion evaluation methods; and
- Evaluation of external organization/contractor adherence to application elements of this QASP.

ExxonMobil may contract the collection of samples, conduct well logging, and perform other activities as outlined in the Testing and Monitoring Plan. Each organization gathering data will be responsible for conducting their internal assessments so that data acquisition is aligned with

the Testing and Monitoring Plan and QASP. In the event issues requiring corrective action are identified, corrective action will be taken to address, design, and implement corrective actions. Documentation of such corrective actions will be maintained in the data management system archives.

E.10 References

AMPP NACE (Association for Materials Protection and Performance National Association of Corrosion Engineers). 2023. Preparation, Installation, Analysis, and Interpretation of Corrosion Coupons in Hydrocarbon Operations. Standard NACE SP0775-2023.

ASTM (ASTM International). 2017a. “Standard G1-03(2017)e1: Standard Practice for Preparing, Cleaning, and Evaluating Corrosion Test Specimens.”

ASTM (ASTM International). 2017b. “Standard D513-16: Standard Test Methods for Total and Dissolved Carbon Dioxide in Water.”

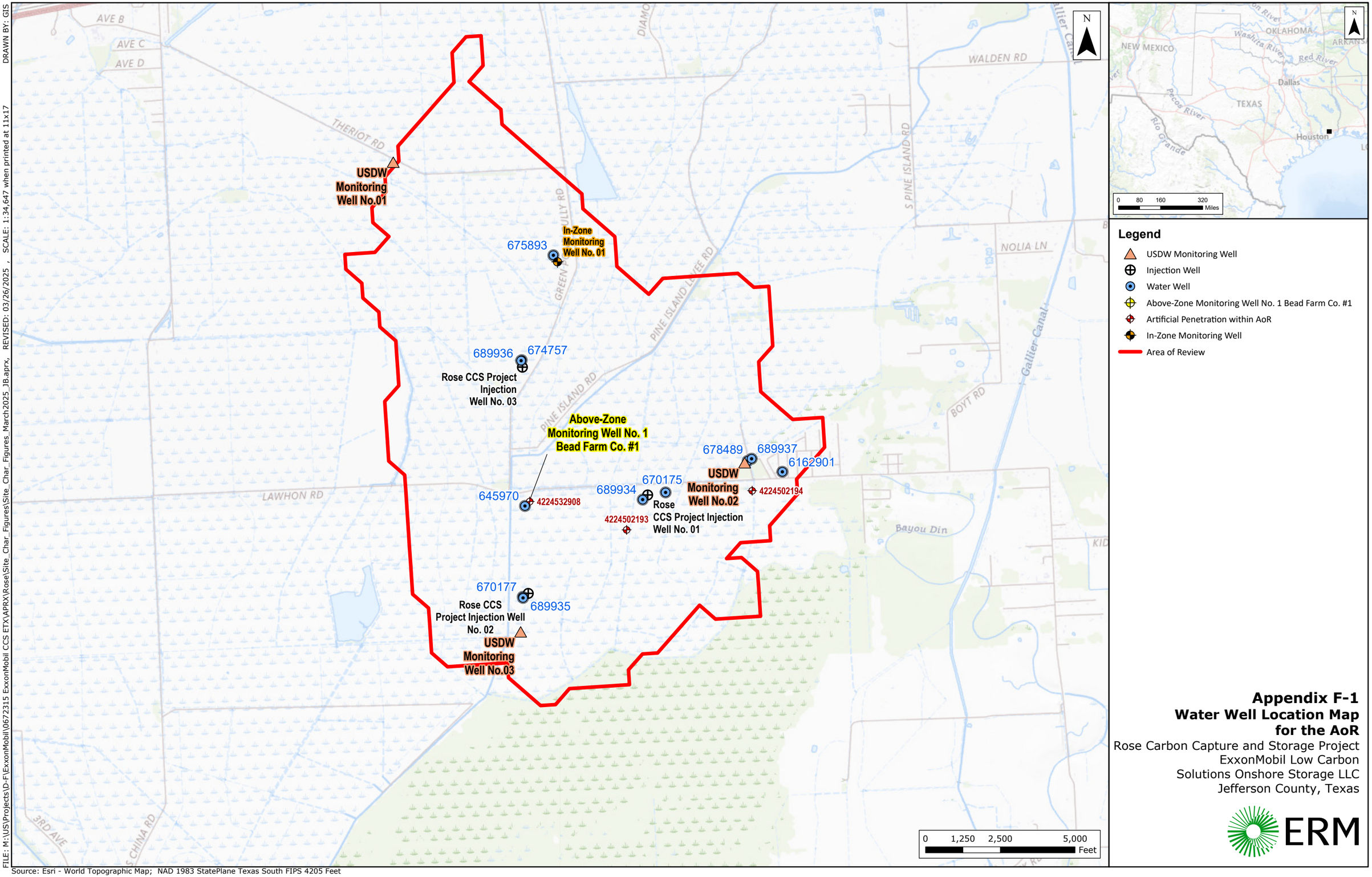
EPA (U.S. Environmental Protection Agency). 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance. EPA 530/R-09-007.

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Appendix F Testing and Monitoring

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CONFIDENTIAL BUSINESS INFORMATION



Legend

- USDW Monitoring Well
- Injection Well
- Water Well
- Above-Zone Monitoring Well No. 1 Bead Farm Co. #1
- Artificial Penetration within AoR
- In-Zone Monitoring Well
- Area of Review

Appendix F-1
Water Well Location Map for the AoR
Rose Carbon Capture and Storage Project
ExxonMobil Low Carbon Solutions Onshore Storage LLC
Jefferson County, Texas

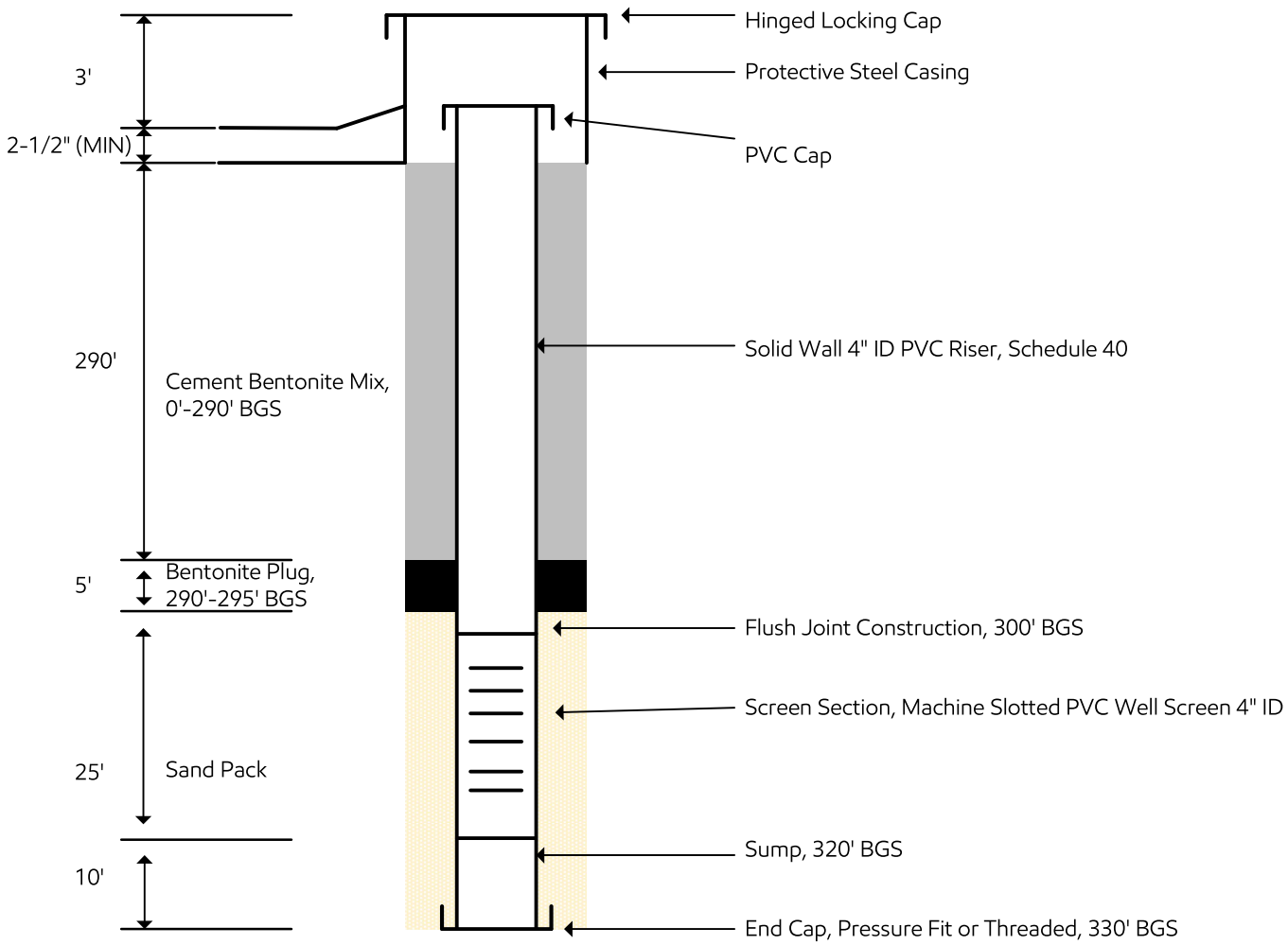
ERM

Source: Esri - World Topographic Map; NAD 1983 StatePlane Texas South FIPS 4205 Feet

FILE: M:\US\Projects\D-F\ExxonMobil\0672315 ExxonMobil CCS ETX\APRX\Rose\Site_Char_Figures\Site_Char_Figures_March2025_JB.aprx, REVISED: 03/26/2025 , SCALE: 1:34,647 when printed at 11x17 DRAWN BY: GIS

CONFIDENTIAL BUSINESS INFORMATION

Rose USDW #1
Current Schematic

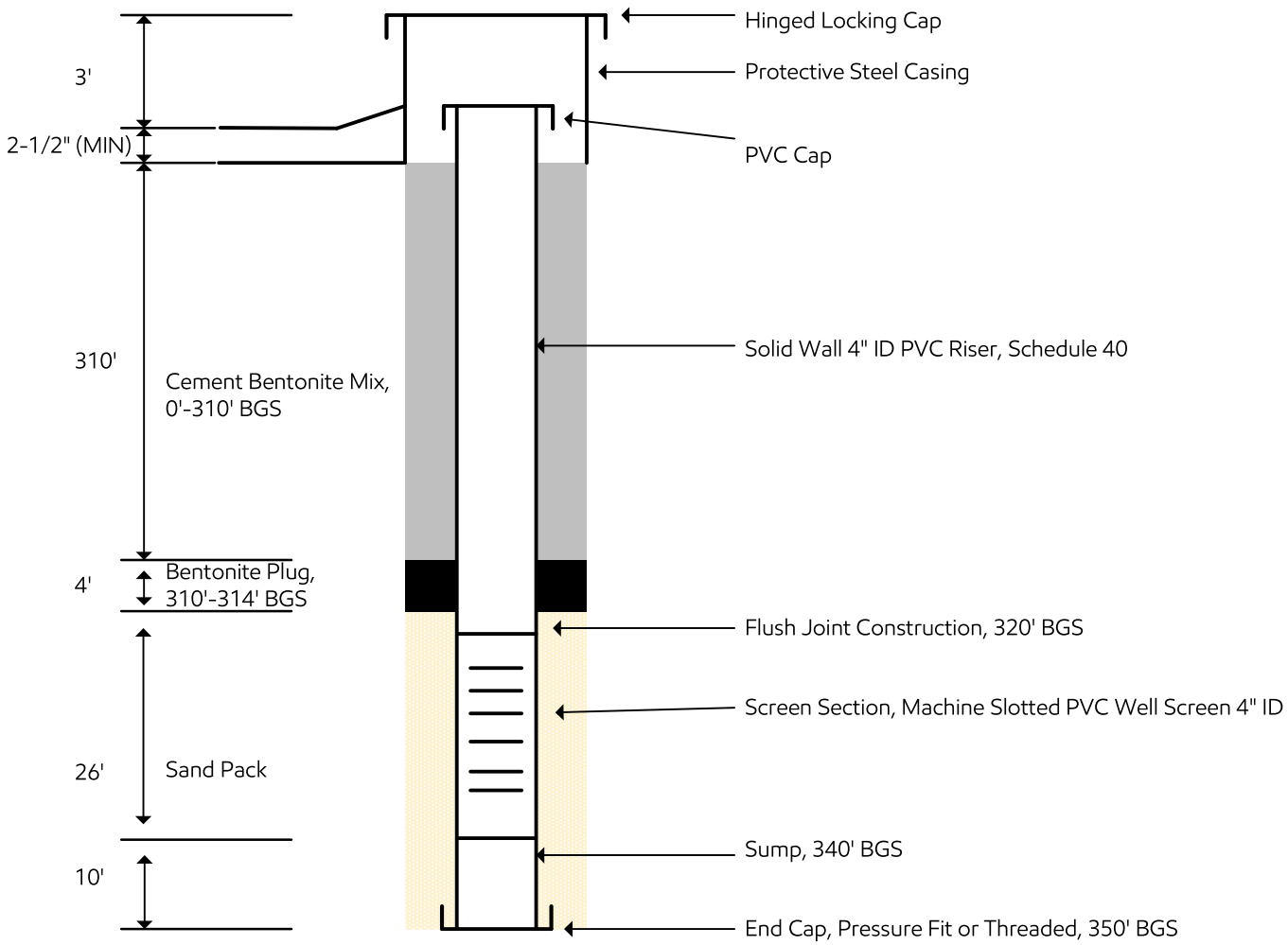


Ft BGS = Feet Below Ground Surface

CONFIDENTIAL BUSINESS INFORMATION

Rose USDW #2

Current Schematic

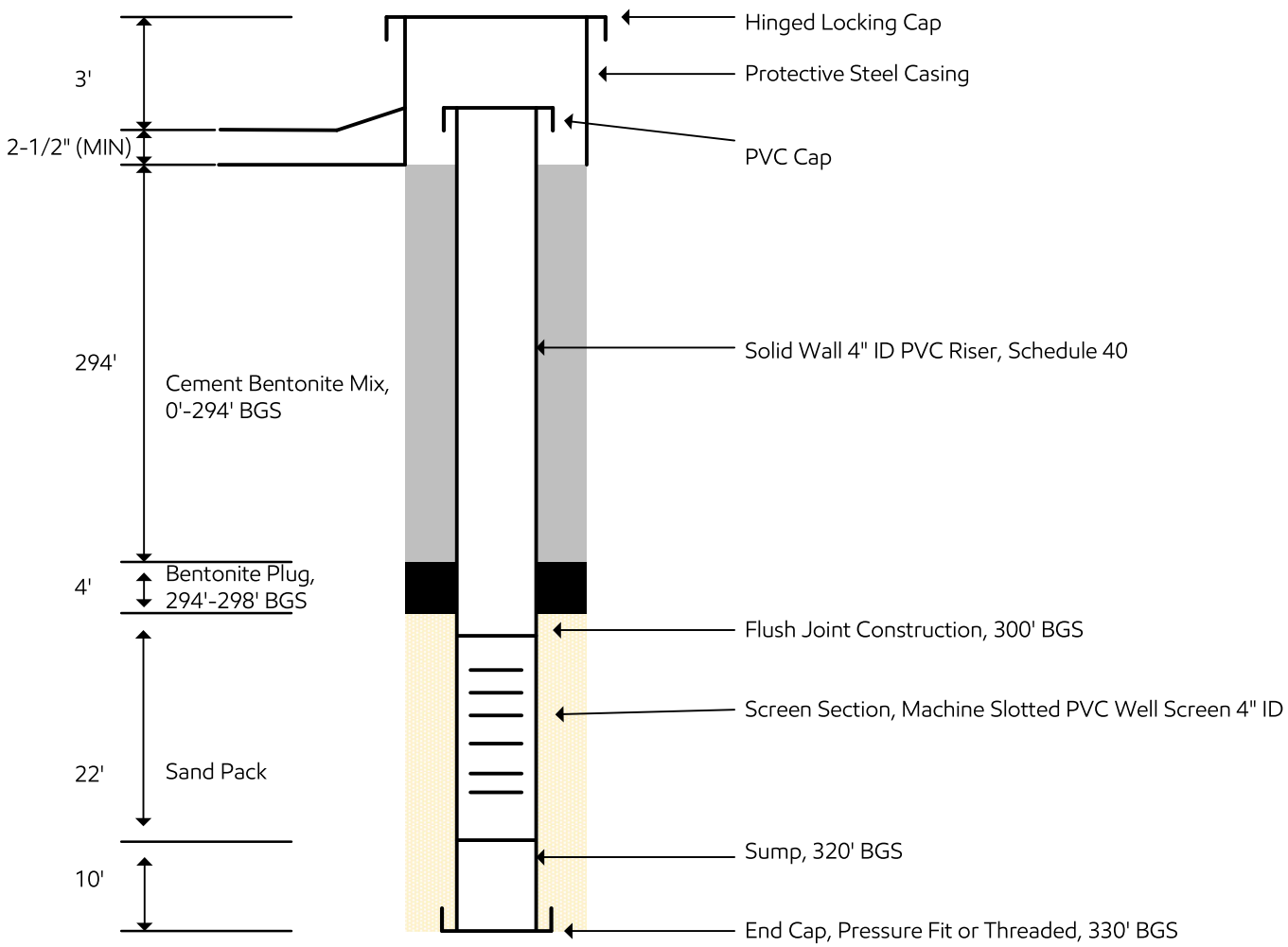


Ft BGS = Feet Below Ground Surface

CONFIDENTIAL BUSINESS INFORMATION

Rose USDW #3

Current Schematic



Ft BGS = Feet Below Ground Surface

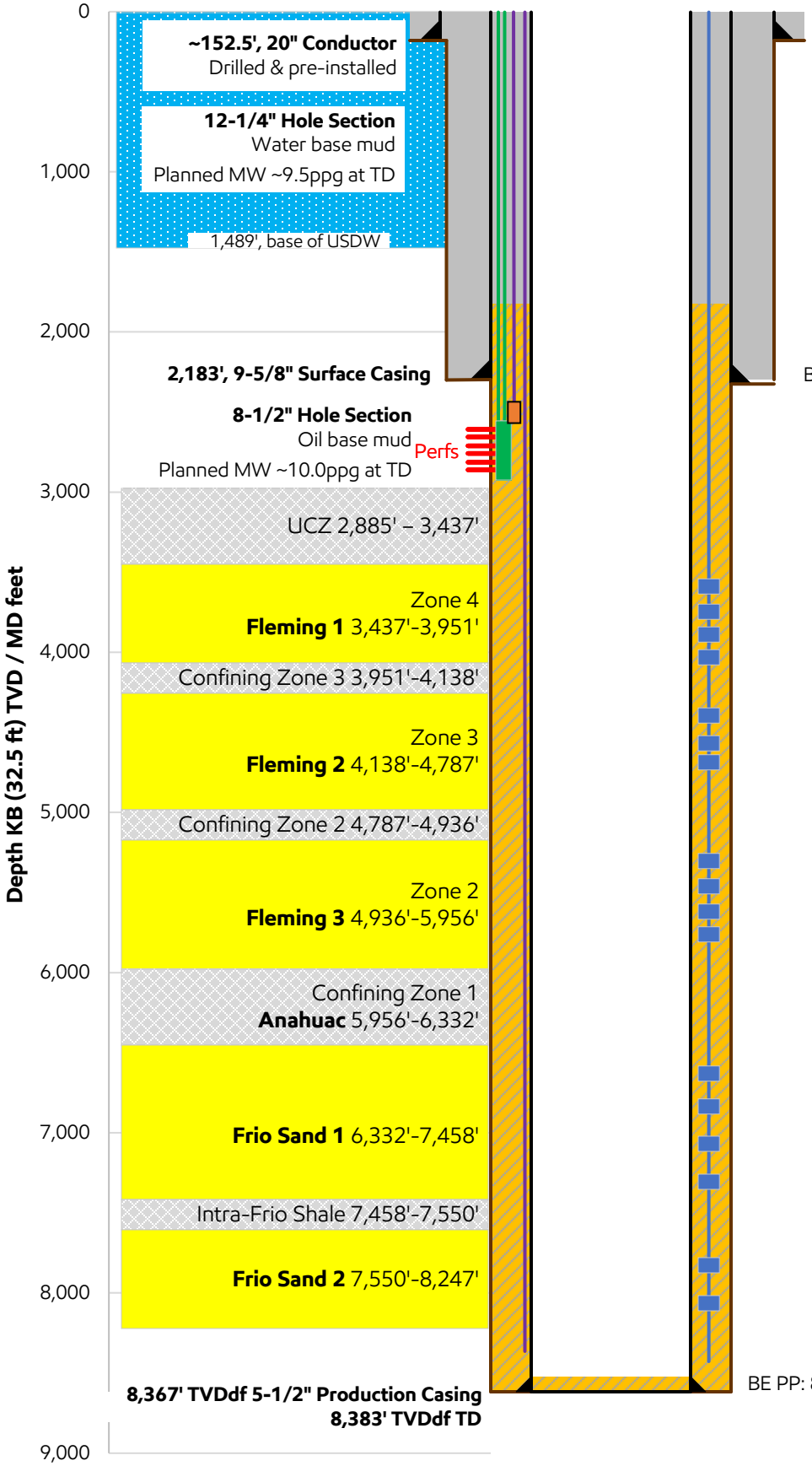
CONFIDENTIAL BUSINESS INFORMATION

4224532914 Bead Farm Co. #4 (In-Zone Monitoring Well No. 01)

CONFIDENTIAL BUSINESS INFORMATION

Rose CCS Project Bead Farm Company #4

Wellbore Schematic



20" Conductor
78.6 ppf, X-52, Welded
0.375" WT, 19.25" ID
Burst: 1,950, Collapse: 320 psi, Tensile: 1,202 kips

9-5/8" Surface casing, 40 ppf, J-55, BTC, from surface to 2,183'
0.395" WT, 8.835" ID, 8.679" Drift
Burst: 3,950 psi, Collapse: 2,570 psi, Tensile: 630 kips

Cement:
Lead Cmt – 12.0 ppg, Surface—1,780'
Tail Cmt – 15.0 ppg, 1,700'—2,183'

BE PP: 8.52ppg, BE FG: 12.85ppg BHST: 104°F

U-tube (2,466') + Perfs gun: Fluid sampling in permeable formation above UCZ – from 2491' to 2501'

Complete with Weatherford fiber optic P/T gauge

5-1/2", 20 ppf, L80, BTC from surface to 2,873'
0.361" WT, 4.778" ID, 4.653" Drift
Burst: 9,190 psi, Collapse: 8,830 psi, 466 kips

5-1/2", 23ppf, 22Cr125, VAM TOP from 2,873' to 3,472'
0.415" WT, 4.670" ID, 4.545" Drift
Burst: 16,980 psi, Collapse: 16,070 psi, 829 kips

5-1/2", 20 ppf, 13Cr-80, VAM21 from 3,472' to 8,234"
0.361" WT, 4.778" ID, 4.653" Drift
Burst: 9,190 psi, Collapse: 8,830 psi, 466 kips

5-1/2", 20 ppf, L80, BTC from 8,234' to 8,367'
0.361" WT, 4.778" ID, 4.653" Drift
Burst: 9,190 psi, Collapse: 8,830 psi, 466 kips

Cement:
Lead 12.5 ppg, from surface to 1,893'
Tail 13.5 ppg CO2 compatible cement, from 1,893' to 8,383'

Fiber Optic to 8,234'

TEC: P/T 17 sensors spread across 4 injection zones and permeable formation below UCZ:

Top: 3,427' 3,530' 3,692' 3,829' 4,145' 4,186' 4,696' 5,002' 5,309' 5,501' 5,795' 6,660' 6,857' 7,047' 7,267' 7,657' 7,787' MD (0.6' thickness)

BE PP: 8.62ppg, BE FG: 14.16ppg BHST: 194°F

CONFIDENTIAL BUSINESS INFORMATION

API No. 42-245-32914
Drilling Permit # 901180
SWR Exception

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

APPLICATION FOR PERMIT TO DRILL, RECOMPLETE, OR RE-ENTER

This facsimile W-1 was generated electronically from data submitted to the RRC.
A certification of the automated data is available in the RRC's Austin office.

FORM W-1 07/2004

Permit Status: Approved

1. RRC Operator No.: 101256

2. Operator's Name (as shown on form P-5, Organization Report): EXXONMOBIL LOW C SOL ON STOR LLC

3. Operator Address (include street, city, state, zip): ATTN EDWARD E GRAHAM, 22777 SPRINGWOODS VILLAGE PKWY, SPRING, TX 77389-0000

4. Lease Name: BEAD FARM COMPANY

5. Well No.: 4

GENERAL INFORMATION

6. Purpose of filing (mark ALL appropriate boxes): [X] New Drill [ ] Recompletion [ ] Reclass [ ] Field Transfer [ ] Re-Enter [ ] Amended [ ] Amended as Drilled (BHL) (Also File Form W-1D)

7. Wellbore Profile (mark ALL appropriate boxes): [X] Vertical [ ] Horizontal (Also File Form W-1H) [ ] Directional (Also File Form W-1D) [ ] Sidetrack

8. Total Depth: 10000

9. Do you have the right to develop the minerals under any right-of-way ? [ ] Yes [X] No

10. Is this well subject to Statewide Rule 36 (hydrogen sulfide area)? [ ] Yes [X] No

SURFACE LOCATION AND ACREAGE INFORMATION

11. RRC District No.: 03

12. County: JEFFERSON

13. Surface Location [X] Land [ ] Bay/Estuary [ ] Inland Waterway [ ] Offshore

14. This well is to be located 3 miles in a SE direction from China, TX which is the nearest town in the county of the well site.

15. Section: 7

16. Block:

17. Survey: HT&B RR CO

18. Abstract No.: A-150

19. Distance to nearest lease line: ft.

20. Number of contiguous acres in lease, pooled unit, or unitized tract: 454

21. Lease Perpendiculars: 522 ft from the SOUTH line and 1434 ft from the EAST line.

22. Survey Perpendiculars: 522 ft from the SOUTH line and 1434 ft from the EAST line.

23. Is this a pooled unit? [ ] Yes [X] No

24. Unitization Docket No:

25. Are you applying for Substandard Acreage Field? [ ] Yes (attach Form W-1A) [X] No

FIELD INFORMATION — List all fields of anticipated completion including Wildcat. List one zone per line.

26. RRC District No.	27. Field No.	28. Field Name (exactly as shown in RRC records)	29. Well Type	30. Completion Depth	31. Distance to Nearest Well in this Reservoir	32. Number of Wells on this lease in this Reservoir
03	00006001	WILDCAT	Exploratory Test Well	10000	0.00	1

BOTTOMHOLE LOCATION INFORMATION is required for DIRECTIONAL, HORIZONTAL, AND AMENDED AS DRILLED PERMIT APPLICATIONS

Remarks

Certificate:

I certify that information stated in this application is true and complete, to the best of my knowledge.

Josh Calkin — Name of filer
Jul 10, 2024 — Date submitted

(281)702-5537 — Phone
Josh.Calkin@erm.com — E-mail Address (OPTIONAL)

RRC Use Only Data Validation Time Stamp: Mar 27, 2025 2:00 PM(Current Version)

CONFIDENTIAL BUSINESS INFORMATION

Railroad Commission of Texas

PERMIT TO DRILL, RE-COMPLETE, OR RE-ENTER ON REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

CONDITIONS AND INSTRUCTIONS

Permit Invalidation. It is the operator's responsibility to make sure that the permitted location complies with Commission density and spacing rules in effect on the spud date. The permit becomes invalid automatically if, because of a field rule change or the drilling of another well, the stated location is not in compliance with Commission field rules on the spud date. If this occurs, application for an exception to Statewide Rules 37 and 38 must be made and a special permit granted prior to spudding. Failure to do so may result in an allowable not being assigned and/or enforcement procedures being initiated.

Notice Requirements. Per H.B 630, signed May 8, 2007, the operator is required to provide notice to the surface owner no later than the 15th business day after the Commission issues a permit to drill. Please refer to subchapter Q Sec. 91.751-91.755 of the Texas Natural Resources Code for applicability.

Permit expiration. This permit expires two (2) years from the date of issuance shown on the original permit. The permit period will not be extended.

Drilling Permit Number. The drilling permit number shown on the permit MUST be given as a reference with any notification to the district (see below), correspondence, or application concerning this permit.

Rule 37 Exception Permits. This Statewide Rule 37 exception permit is granted under either provision Rule 37 (h)(2)(A) or 37(h)(2)(B). Be advised that a permit granted under Rule 37(h)(2)(A), notice of application, is subject to the General Rules of Practice and Procedures and if a protest is received under Section 1.3, "Filing of Documents," and/or Section 1.4, "Computation of Time," the permit may be deemed invalid.

Before Drilling

Fresh Water Sand Protection. The operator must set and cement sufficient surface casing to protect all usable-quality water, as defined by the Railroad Commission of Texas (RRC) Groundwater Advisory Unit (GWAU). Before drilling a well, the operator must obtain a letter from the Railroad Commission of Texas stating the depth to which water needs protection, Write: Railroad Commission of Texas, Groundwater Advisory Unit (GWAU), P.O. Box 12967, Austin, TX 78711-3087. File a copy of the letter with the appropriate district office.

Accessing the Well Site. If an OPERATOR, well equipment TRANSPORTER or WELL service provider must access the well site from a roadway on the state highway system (Interstate, U.S. Highway, State Highway, Farm-to-Market Road, Ranch-to-Market Road, etc.), an access permit is required from TxDOT. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

Water Transport to Well Site. If an operator intends to transport water to the well site through a temporary pipeline laid above ground on the state's right-of-way, an additional TxDOT permit is required. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

***NOTIFICATION**

The operator is **REQUIRED** to notify the district office when setting surface casing, intermediate casing, and production casing, or when plugging a dry hole. The district office **MUST** also be notified if the operator intends to re-enter a plugged well or re-complete a well into a different regulatory field. Time requirements are given below. The drilling permit number **MUST** be given with such notifications.

During Drilling

Permit at Drilling Site. A copy of the Form W-1 Drilling Permit Application, the location plat, a copy of Statewide Rule 13 alternate surface casing setting depth approval from the district office, if applicable, and this drilling permit must be kept at the permitted well site throughout drilling operations.

***Notification of Setting Casing.** The operator MUST call in notification to the appropriate district office (phone number shown the on permit) a minimum of eight (8) hours prior to the setting of surface casing, intermediate casing, AND production casing. The individual giving notification MUST be able to advise the district office of the drilling permit number.

***Notification of Re-completion/Re-entry.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of eight (8) hours prior to the initiation of drilling or re-completion operations. The individual giving notification MUST be able to advise the district office of the drilling permit number.

Completion and Plugging Reports

Hydraulic Fracture Stimulation using Diesel Fuel: Most operators in Texas do not use diesel fuel in hydraulic fracturing fluids. Section 322 of the Energy Policy Act of 2005 amended the Underground Injection Control (UIC) portion of the federal Safe Drinking Water Act (42 USC 300h(d)) to define "underground Injection" to *EXCLUDE* " ...the underground injection of fluids or propping agents (*other than diesel fuels*) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities." (italic and underlining added.) Therefore, hydraulic fracturing may be subject to regulation under the federal UIC regulations if diesel fuel is injected or used as a propping agent. EPA defined "diesel fuel" using the following five (5) Chemical Abstract Service numbers: 68334-30-5 Primary Name: Fuels, diesel; 68476-34-6 Primary Name: Fuels, diesel, No. 2; 68476-30-2 Primary Name: Fuel oil No. 2; 68476-31-3 Primary Name: Fuel oil, No. 4; and 8008-20-6 Primary Name: Kerosene. As a result, an injection well permit would be required before performing hydraulic fracture stimulation using diesel fuel as defined by EPA on any well in Texas. Hydraulic fracture stimulation using diesel fuel as defined by EPA on a well in Texas without an injection well permit could result in enforcement action.

Producing Well. Statewide Rule 16 states that the operator of a well shall file with the Commission the appropriate completion report within ninety (90) days after completion of the well or within one hundred and fifty (150) days after the date on which the drilling operation is completed, whichever is earlier. Completion of the well in a field authorized by this permit voids the permit for all other fields included in the permit unless the operator indicates on the initial completion report that the well is to be a dual or multiple completion and promptly submits an application for multiple completion. All zones are required to be completed before the expiration date on the existing permit. Statewide Rule 40(d) requires that upon successful completion of a well in the same reservoir as any other well previously assigned the same acreage, proration plats and P-15s or P-16s (if required) or a lease plat and P-16 must be submitted with no double assignment of acreage unless authorized by rule.

Dry or Noncommercial Hole. Statewide Rule 14(b)(2) prohibits suspension of operations on each dry or non-commercial well without plugging unless the hole is cased and the casing is cemented in compliance with Commission rules. If properly cased, Statewide Rule 14(b)(2) requires that plugging operations must begin within a period of one (1) year after drilling or operations have ceased. Plugging operations must proceed with due diligence until completed. An extension to the one-year plugging requirement may be granted under the provisions stated in Statewide Rule 14(b)(2).

Intention to Plug. The operator must file a Form W-3A (Notice of Intention to Plug and Abandon) with the district office at least five (5) days prior to beginning plugging operations. If, however, a drilling rig is already at work on location and ready to begin plugging operations, the district director or the director's delegate may waive this requirement upon request, and verbally approve the proposed plugging procedures.

***Notification of Plugging a Dry Hole.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of four (4) hours prior to beginning plugging operations. The individual giving the notification MUST be able to advise the district office of the drilling permit number and all water protection depths for that location as stated in the Groundwater Advisory Unit letter.

DIRECT INQUIRIES TO: DRILLING PERMIT SECTION, OIL AND GAS DIVISION

PHONE
(512) 463-6751

MAIL:
PO Box 12967
Austin, Texas, 78711-2967

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER	DATE PERMIT ISSUED OR AMENDED	DISTRICT
901180	Jul 11, 2024	* 03
API NUMBER	FORM W-1 RECEIVED	COUNTY
42-245-32914	Jul 10, 2024	JEFFERSON
TYPE OF OPERATION	WELLBORE PROFILE(S)	ACRES
NEW DRILL	Vertical	454

OPERATOR 101256

EXXONMOBIL LOW C SOL ON STOR LLC

ATTN EDWARD E GRAHAM
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389-0000

NOTICE
This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored.
District Office Telephone No:
(713) 869-5001

LEASE NAME	WELL NUMBER
BEAD FARM COMPANY	4
LOCATION	TOTAL DEPTH
3 miles SE direction from CHINA, TX	10000

Section, Block and/or Survey

SECTION 7 BLOCK ABSTRACT 150

SURVEY HT&B RR CO

DISTANCE TO SURVEY LINES	DISTANCE TO NEAREST LEASE LINE
522 ft. SOUTH 1434 ft. EAST	ft.
DISTANCE TO LEASE LINES	DISTANCE TO NEAREST WELL ON LEASE
522 ft. SOUTH 1434 ft. EAST	See FIELD(s) Below

FIELD(s) and LIMITATIONS:

* SEE FIELD DISTRICT FOR REPORTING PURPOSES *

FIELD NAME / LEASE NAME	ACRES / NEAREST LEASE	DEPTH	WELL # / NEAREST WE	DIST
WILDCAT	454.00	10,000	4	03
BEAD FARM COMPANY			0	

RESTRICTIONS: For exploratory test only

THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS

This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.

This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

SWR #13 Formation Data

JEFFERSON (245) County

Formation	Remarks	Geological Order	Effective Date
LAFAYETTE	disposal	1	12/17/2013
CAPROCK	disposal	2	12/17/2013
SPINDLETOP SALT DOME	disposal	3	12/17/2013
FANNETT SALT DOME	disposal	4	12/17/2013
BIG HILL SALT DOME	disposal	5	12/17/2013
PLEISTOCENE-LISSIE	disposal	6	12/17/2013
MIOCENE	disposal	7	12/17/2013
FRIO	disposal	8	12/17/2013
MARINULINA	disposal	9	12/17/2013
HETEROSTEGINA	disposal	10	12/17/2013

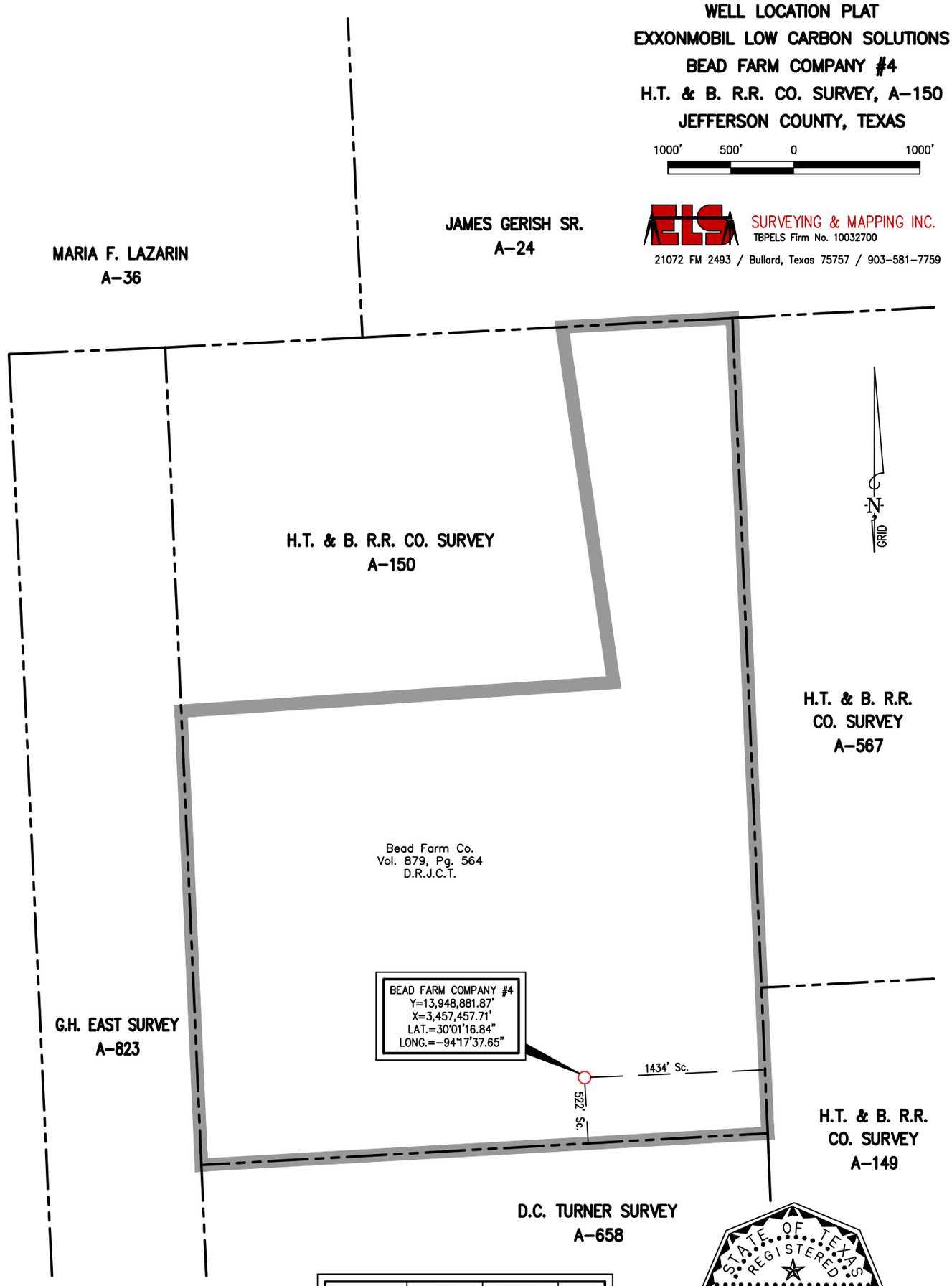
The above list may not be all inclusive, and may also include formations that do not intersect all wellbores. The listing order of the Formation information reflects the general stratigraphic order and relative geologic age. This is a dynamic list subject to updates and revisions. It is the operator's responsibility to make sure that at the time of spudding the well the most current list is being referenced. Refer to the RRC website at the following address for the most recent information.
http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info

CONFIDENTIAL BUSINESS INFORMATION

WELL LOCATION PLAT
EXXONMOBIL LOW CARBON SOLUTIONS
BEAD FARM COMPANY #4
H.T. & B. R.R. CO. SURVEY, A-150
JEFFERSON COUNTY, TEXAS

1000' 500' 0 1000'

ELS SURVEYING & MAPPING INC.
TBPELS Firm No. 10032700
21072 FM 2493 / Bullard, Texas 75757 / 903-581-7759



SHL	TRACT CALLS	SURVEY CALLS	ELEV.
BEAD FARM COMPANY #4	522' Sc. FSL 1434' Sc. FEL	522' Sc. FSL 1434' Sc. FEL	24.0'

STATE OF TEXAS
REGISTERED
JIM G. GLASS
5262
PROFESSIONAL
LAND SURVEYOR

Location is approximately
12.3 miles SW of Beaumont, Tx.
"CHINA" Quadrangle

Driving Directions:
From the Intersection of I10 and Smith Road near Cheek, TX, go Northwest on Smith Road, .8 miles turn left (West) Kidd Road. Go 1.6 miles turn right (North) on Boyt Road. Go 1.1 miles stay straight (West) on Lawhon Rd. Go 2.8 miles turn right (North) on Green Pond Gully Road Go 1.5 miles. Turn Left (Northwest). Drive on location.

DATE SURVEYED: 5/20/2024

Location is staked from tract lines as evidenced by occupation, information obtained from the Tx. R.R.C and provided deed records. Distances shown are not intended to be definitive in establishing actual title boundaries. The deed data shown hereon was furnished by others. This is not a title survey. Vesting documents may not have been provided. Bearings and distances are based on the Texas State Plane Coordinate System N.A.D. 83 (2011) (South Central Zone) derived from GPS Observations.

LEGEND
= TRACT LINE
= SURVEY LINE
= PROPOSED WELL

FOR THE EXCLUSIVE USE OF
EXXONMOBIL LOW CARBON SOLUTIONS

STATE OF TEXAS – – – COUNTY OF SMITH
I, Jim G. Glass, Registered Professional Land Surveyor, do hereby certify the above plat to be true and correct to the best of my knowledge.
Date: May 30, 2024 Bullard, Texas
E.L.S. Surveying & Mapping, Inc.

Registered Professional Land Surveyor No. 5262

Drafter: BWT/ECJ FB 2747/36-37 Job No. 430923 Map No. J-0923-LOC-MON2

CONFIDENTIAL BUSINESS INFORMATION

GROUNDWATER PROTECTION DETERMINATION

Form GW-2

Groundwater Advisory Unit

Date Issued:	27 June 2024	**GAU Number:**	382934

Attention:	EXXONMOBIL LOW C SOL ON ATTN EDWARD E GRAHAM SPRING, TX 77389	**API Number:**	
		County:	JEFFERSON
		Lease Name:	Bead Farm Company
		Lease Number:	
Operator No.:	101256	**Well Number:**	
		Total Vertical	10000
		Latitude:	30.021130
		Longitude:	-94.293605
		Datum:	NAD27

Purpose: Test Well

Location: Survey-HT&B RR CO; Abstract-150; Section-7

To protect usable-quality groundwater at this location, the Groundwater Advisory Unit of the Railroad Commission of Texas recommends:

Usable-quality water occurs from the land surface to a depth of 1,100 feet. Moreover, the interval from the land surface to a depth of 700 feet contains water of superior quality which must be isolated from water in underlying beds.

This recommendation is applicable to all wells within a radius of 2,000 feet of this location.

Note: Unless stated otherwise, this recommendation is intended to apply to all wells drilled within 200 feet of the subject well. Unless stated otherwise, this recommendation is for normal drilling, production, and plugging operations only.

This determination is based on information provided when the application was submitted on 06/27/2024. If the location information has changed, you must contact the Groundwater Advisory Unit, and submit a new application if necessary. If you have questions, please contact us at 512-463-2741 or gau@rrc.texas.gov.

Groundwater Advisory Unit, Oil and Gas Division

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

Form W-2

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

Status: Approved
Date: 01/30/2025
Tracking No.: 326182

OIL WELL POTENTIAL TEST, COMPLETION OR RECOMPLETION REPORT,

OPERATOR INFORMATION

Operator EXXONMOBIL LOW C SOL ON STOR LLC **Operator** 101256
Operator ATTN EDWARD E GRAHAM 22777 SPRINGWOODS VILLAGE PKWY SPRING, TX 77389-0000

WELL INFORMATION

API 42-245-32914 **County:** JEFFERSON
Well No.: 4 **RRC District** 03
Lease BEAD FARM COMPANY **Field** WILDCAT
RRC Lease 28194 **Field No.:** 00006001
Location Section: 7, Block: , Survey: HT&B RR CO, Abstract: 150

Latitude 30 **Longitud** -94
This well is 3 **miles in a** SE
direction from CHINA, TX,
which is the nearest town in the

FILING INFORMATION

Purpose of Well Record Only
Type of New Well
Well Type: Shut-In Producer **Completion or Recompletion** 10/07/2024

Type of Permit	Date	Permit No.
Permit to Drill, Plug Back, or	07/11/2024	901180
Rule 37 Exception		
Fluid Injection		
O&G Waste Disposal		
Other:		

COMPLETION INFORMATION

Spud 09/01/2024 **Date of first production after rig** 10/07/2024
Date plug back, deepening, drilling operation 09/01/2024 **Date plug back, deepening, recompletion, drilling operation** 10/07/2024
Number of producing wells on this lease this field (reservoir) including this 0 **Distance to nearest well in lease & reservoir** 0.0
Total number of acres in 454.00 **Elevation** 24 GL
Total depth TVD 8383 **Total depth MD**
Plug back depth TVD 8283 **Plug back depth MD**
Was directional survey made other inclination (Form W- No **Rotation time within surface casing** 25.8
Is Cementing Affidavit (Form W-15) Yes
Recompletion or No **Multiple** No
Type(s) of electric or other log(s) Gamma Ray (MWD)
Electric Log Other Description:
Location of well, relative to nearest lease of lease on which this well is 522.0 **Feet from the** South **Line and** 1434.0 **Feet from the** East **Line of the** BEAD FARM COMPANY **Lease.** **Off Lease :** No

FORMER FIELD (WITH RESERVOIR) & GAS ID OR OIL LEASE NO.

Field & Reservoir	Gas ID or Oil Lease	Well No.	Prior Service Type

PACKET: N/A

W2: N/A

FOR NEW DRILL OR RE-ENTRY, SURFACE CASING DEPTH DETERMINED BY:

GAU Groundwater Protection Determination		**Depth**	1100.0	**Date**	06/27/2024
SWR 13 Exception		**Depth**	2350.0		

INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION

Date of		**Production**	
Number of hours	24	**Choke**	
Was swab used during this	No	**Oil produced prior to**	

PRODUCTION DURING TEST PERIOD:

Oil		**Gas**	
Gas - Oil	0	**Flowing Tubing**	
Water			

CALCULATED 24-HOUR RATE

Oil		**Gas**	
Oil Gravity - API - 60.:		**Casing**	
Water			

CASING RECORD

Ro	Type of Casing	Casing Size (in.)	Hole Size	Setting Depth	Multi - Stage Tool	Multi - Stage Shoe	Cement Class	Cement Amoun	Slurry Volume (cu.	Top of Cement (ft.)	TOC Determined By
1	Surface	9 5/8	12 1/4	2184			H	548	1108.0	0	Circulated to Surface
2	Conventional Production	5 1/2	8 1/2	8367			H	1360	2573.5	0	Circulated to Surface

LINER RECORD

Ro	Liner Size	Hole Size	Liner Top	Liner Bottom	Cement Class	Cement Amoun	Slurry Volume (cu.	Top of Cement (ft.)	TOC Determined

N/A

TUBING RECORD

Ro	Size (in.)	Depth Size (ft.)	Packer Depth (ft.)/Type
			/

N/A

PRODUCING/INJECTION/DISPOSAL INTERVAL

Ro	Open hole?	From (ft.)	To (ft.)
1	No	L 2491	2501.0

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC.

Was hydraulic fracturing treatment No

Is well equipped with a downhole sleeve? No

If yes, actuation pressure

Production casing test pressure (PSIG)

Actual maximum pressure (PSIG) during hydraulic fracturing

fracturin

Has the hydraulic fracturing fluid disclosure been

No

Ro	Type of Operation	Amount and Kind of Material Used	Depth Interval (ft.)

N/A

FORMATION RECORD

Formations	Encountere	Depth TVD	Depth MD	Is formation	Remarks
LAFAYETTE - DISPOSAL	No			No	
CAPROCK - DISPOSAL	No			No	
SPINDLETOP SALT DOME - DISPOSAL	No			No	
FANNETT SALT DOME - DISPOSAL	No			No	
BIG HILL SALT DOME - DISPOSAL	No			No	
PLEISTOCENE-LISSIE - DISPOSAL	No			No	
MIOCENE - DISPOSAL	Yes	3436.0	3437.0	Yes	LOGGED
FRIO - DISPOSAL	Yes	6331.0	6332.0	Yes	LOGGED
MARINULINA - DISPOSAL	No			No	
HETEROSTEGINA - DISPOSAL	Yes	6030.0	6091.0	Yes	LOGGED

Do the producing interval of this well produce H2S with a concentration in excess of 100 ppm No

Is the completion being downhole commingled No

REMARKS

THE WELL WAS SHUT-IN. THIS WELL HAS NOT PRODUCED.

RRC REMARKS

PUBLIC COMMENTS:

CASING RECORD :

CEMENT PUMPING WAS NOT REQUIRED TO SET THE CONDUCTOR CASING, AS THE CONDUCTOR WAS SUCCESSFULLY SET WITHOUT THE USE OF MUD. THE WELL WAS COMPLETED WITHOUT PUMPING OR MUD CIRCULATION. CLASS A 4000 PSI CEMENT, COMBINED WITH 5/8-INCH PEA GRAVEL AND MANUFACTURED SAND, WAS POURED DOWN THE BACKSIDE TO SECURE THE CONDUCTOR.

TUBING RECORD:

PURPOSE OF WELL TO MONITOR PRESSURE AND FLUID TRENDS. U-TUBE SAMPLER, FIBER AND TEC LINE MOUNTED ON BACKSIDE OF CASING.

PRODUCING/INJECTION/DISPOSAL INTERVAL :

U-TUBE FLUID SAMPLER WITH CASING MOUNTED GUNS ON THE BACKSIDE OF THE CASING. FLUID SAMPLING INTERVAL IS FROM 2,491 FEET MD TO 2,501 FEET MD.

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC. :

POTENTIAL TEST DATA:

OPERATOR'S CERTIFICATION

Printed	Josh Calkin	**Title:**	
Telephone	(281) 702-5537	**Date**	01/09/2025

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name: ExxonMobil Low Carbon Solutions	**Operator P-5 No.:** 101256
Cementer Name: Halliburton	**Cementer P-5 No.:** 347151

WELL INFORMATION

District No.: 3	**County:** Jefferson	
Well No.: Bead Farm Company #4	**API No.:** 42-245-32914	**Drilling Permit No.:** 901180
Lease Name: Bead Farm Company #4	**Lease No.:**	
Field Name: Wildcat	**Field No.:**	

I. CASING CEMENTING DATA

Type of casing: ☐ Conductor ☒ Surface ☐ Intermediate ☐ Liner ☐ Production

Drilled hole size (in.): 12-1/4"	**Depth of drilled hole (ft.):** 2,199'	**Est. % wash-out or hole enlargement:** 10%
Size of casing in O.D. (in.): 9-5/8"	**Casing weight (lbs/ft) and grade:**	**No. of centralizers used:**
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☒ NO **If no for surface casing, explain in Remarks.**	**Setting depth shoe (ft.):** 2,184'	**Top of liner (ft.):** / **Setting depth liner (ft.):**
Hrs. waiting on cement before drill-out:	**Calculated top of cement (ft.):**	**Cementing date:** September 2, 2024

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	372.02	A	See Remarks	883.74	~~404~~ 1,780
2	175.85	~~X~~ H	See Remarks	224.30	1,~~780~~ 404
3					
Total	547.87			1,108.04	2,184

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	**Depth of drilled hole (ft.):**	**Est. % wash-out or hole enlargement:**
Size of casing in O.D. (in.):	**Casing weight (lbs/ft) and grade:**	**No. of centralizers used:**
Tapered string drilled hole size (in.) Upper: Lower:	**Tapered string depth of drilled hole (ft.)** Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	**Tapered string casing weight(lbs/ft) and grade** Upper: Lower:	**Tapered string no. of centralizers used** Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		**Setting depth shoe (ft.):**
Hrs. waiting on cement before drill-out:	**Calculated top of cement (ft.):**	**Cementing date:**

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	**Depth of drilled hole (ft.):**	**Est. % wash-out or hole enlargement:**
Size of casing in O.D. (in.):	**Casing weight (lbs/ft) and grade:**	**No. of centralizers used:**
Tapered string drilled hole size (in.) Upper: Lower:	**Tapered string depth of drilled hole (ft.)** Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	**Tapered string casing weight(lbs/ft) and grade** Upper: Lower:	**Tapered string no. of centralizers used** Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		**Setting depth tool (ft.):**
Hrs. waiting on cement before drill-out:	**Calculated top of cement (ft.):**	**Cementing date:**

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS

Primary surface cement job confirmed TOC @ 120' (via temp log and CBL conducted within 24 hrs). Top-off job perfomed with cement returns to surface. (DP 901180)

EXXONMOBIL LOW CARBON-EBUS, Bead Farm Company #4, Surface: SLURRY 1: ExtendaCem , SLURRY 2: HALCem

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

Name and title of cementer's representative	Cementing Company	Signature
Cale Folsom SERVICE Leader	Halliburton	

Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.
4920 Industrial Dr	Bossier City LA 71111	701-421-3299	9/2/24

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

Typed or printed name of operator's representative	Title	Signature
James Harvey	Operations Supervisor	James Harvey

Address	City,	State,	Zip Code	Tel: Area Code	Number	Date: mo. day yr.
22777 Springwoods Village Parkway	Spring	TX	77389	9189164340		9/2/2024

Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

A. **What to file:** An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on one form.

The Form W-15 should be filed with the Form W-3, Plugging Record, unless the Form W-3 is signed by the cementing company representative. When reporting dry holes, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.

B. **How to file:** An oil and gas completion report and Form W-15 may be filed online using the Commission's Online System (https://webapps.rrc.texas.gov/security/login.do) or a paper copy of the form may be mailed to the Commission in Austin (P.O. Box 12967, Austin, Texas 78711-2967).

C. **Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.

To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 (http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.

D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing **and** Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name: Exxon Mobil low Carbon Solutions	Operator P-5 No.:
Cementer Name: Halliburton	Cementer P-5 No.: 347151

WELL INFORMATION

District No.: 03	County: Jefferson
Well No.: B 4	API No.: 42-245-32914 Drilling Permit No.: 901180
Lease Name: Bead Farm Company	Lease No.:
Field Name: Wildcat	Field No.:

I. CASING CEMENTING DATA

Type of casing: ☐ Conductor ☐ Surface ☐ Intermediate ☐ Liner ☑ Production

Drilled hole size (in.): 8 1/2	Depth of drilled hole (ft.): 8383	Est. % wash-out or hole enlargement: 10%
Size of casing in O.D. (in.): 5 1/2	Casing weight (lbs/ft) and grade: ~~23~~ 20, 13CR	No. of centralizers used: 188
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☑ YES ☐ NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 8367	Top of liner (ft.):
		Setting depth liner (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date: 9/8/2024

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	505	H	SEE RAMARKS	921.62	1323
2	855	H	SEE REMARKS	1651.86	7047
3					
Total	1360			2573.48	8370

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth shoe (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth tool (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS

EXXONMOBIL CORPORATION-EBUS,BEAD FARM CO,4,PRODUCTION:
SLURRY 1:CorossaCem , SLURRY 2:CorossaLOCK

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

ZOUHIR ROUBACHE	Halliburton		
Name and title of cementer's representative	Cementing Company	Signature	
4720 Industrial	Bossier City, LA 71112	903-986-5096	9/8/2024
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

James Harvey	Operations Supervisor		
Typed or printed name of operator's representative	Title	Signature	
22777 Springwood Village	Spring, TX 77389	5129498272	9/10/24
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

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D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing **and** Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON | Sperry Drilling

DGR / DIR

Powered by INSITE™

1 : 500

MD Detail Log

Country : USA
Field : WILDCAT
Location : Lat: 30° 1' 16.85" North Long: 94° 17' 37.65" West
Well : BEAD FARM COMPANY 4
Company : EXXONMOBIL LOW C SOL ON STOR LL
Rig : NABORS X33

Company	: EXXONMOBIL LOW C SOL ON STOR LL
Rig	: NABORS X33
Well	: BEAD FARM COMPANY 4
Field	: WILDCAT
Country	: USA
API Number	: 4224532914

LOCATION

Latitude : 30° 1' 16.85" North
Longitude : 94° 17' 37.65" West

UTM X = 3,457,457.710 usft
UTM Y = 13,948,881.870 usft

Other Services

Permanent Datum : Ground Level
Elevation : 27.90 ft
Log Measured From : Drill Floor
32.52 ft Above Permanent Datum
Drilling Measured From : Drill Floor

MD LOG

Elev. KB
DF 60.42 ft
GL 27.90 ft
WD

Depth Logged : 152.50 ft To 8,383.00 ft
Date Logged : 01-Sep-24 To 05-Sep-24
Total Depth MD : 8,383.00 ft TVD : 8,381.10 ft
Spud Date : 01-Sep-24

Unit No. : N/A
Job No. : LF-XX-0909035812
Plot Type : Final
Plot Date : 20-Sep-24

Run No.	Borehole Record (MD)			Size	Casing Record (MD)		
	Size	From	To		Weight	From	To
100	12.250 in	152.50 ft	2,199.00 ft	20.000 in	78.60 lbpf	SURFACE	152.50 ft
200	8.500 in	2,199.00 ft	8,383.00 ft	9.625 in	40.00 lbpf	SURFACE	2,183.00 ft

CONFIDENTIAL BUSINESS INFORMATION

WELL INFORMATION

MWD Run Number	100	200			
Date run completed	01-Sep-24	05-Sep-24			
Rig Bit Number	100	200			
Bit Size (in)	12.250	8.500			
Tool Nominal OD (in)	8.150	6.750			
Log Start Depth (MD, ft)	152.50	2,199.00			
Log End Depth (MD, ft)	2,199.00	8,383.00			
Drill or Wipe	Drill	Drill			
Drill/Wipe Start Date and Time	01-Sep-24 02:40	04-Sep-24 01:10			
Drill/Wipe End Date and Time	01-Sep-24 13:26	05-Sep-24 05:17			
Min Inc (deg) @ Depth (MD, ft)	0.18 @ 1,432.00	0.62 @ 2,928.00			
Max Inc (deg) @ Depth (MD, ft)	1.28 @ 1,717.00	2.38 @ 7,271.00			
Bit TFA(in2) / Bit Type	1.23 / HD65s	1.05 / HD65s			
Flow Rate (gpm)	700.00	600.00			
Max AV (fpm) / CV (fpm) @ MWD	80.0 / 46.0	171.0 / 350.0			
Fluid Type	Diesel Mud Base	Diesel Mud Base			
Density (ppg) / Viscosity (spqt)	9.30 / 32.00	10.25 / 67.00			
Filtrate CL (ppm)	1,300.00	57,000.00			
pH / API Filtrate (mptm)	8.10 / 8	N/A / 2			
PV (cP) / YP (lhf2)	4 / 4.00	22 / 29.00			
% Solids / % Sand	5.9 / 0	10.7 / 0			
% Oil / Oil:Water Ratio	0 / 0:100	56 / 65:35			
Rm @ Measured Temp (degF)	0.200 @ 87.00	N/A @ N/A			
Rmf @ Measured Temp (degF)	0.200 @ 87.00	N/A @ N/A			
Rmc @ Measured Temp (degF)	0.200 @ 87.00	N/A @ N/A			
Max Tool Temp (degF) / Source	113.18 / HCIM	173.18 / HCIM			
Rm @ Max Tool Temp (degF)	N/A @ 113.18	N/A @ 173.18			
Lead MWD Engineer	Daniel Nalin	Daniel Nalin			
Customer Representative	N/A	N/A			

SENSOR INFORMATION

Downhole Processor Information

Tool Type	HCIM	HCIM			
Software Version	98.43	98.43			
Sub Serial Number	11432374	13172015			
Insert Serial Number	11753209	250429			
Date and Time Initialized	31-Aug-24 18:21	03-Sep-24 17:42			
Date and Time Read	01-Sep-24 19:40	05-Sep-24 18:56			
ECMB SW Version	N/A	N/A			

Directional Sensor Information

Tool Type	PCDC	PCDC			
Distance From Bit (ft)	19.63	58.07			
Software Version	6.43	6.43			
Sub Serial Number	11233637	11112526			
Sonde Serial Number	11902241	11902011			
Sensor ID Number	N/A	N/A			
Toolface Offset (deg)	0.00	310.00			

Gamma Ray Sensor Information

Tool Type	DGR	DGR			
Distance From Bit (ft)	9.58	46.35			
Recorded Sample Period (sec)	4	4			
Software Version	N/A	N/A			
Sub Serial Number	11654485	12444096			
Insert/Sonde Serial Number	11671533	263646			

REMARKS

All depths are referenced to the driller's pipe tally.

DGXT - Gamma Ray formation exposure time

Default 1:500 Log Smoothing:
Interval Resolution: 0.5ft
Window Interval:(+/-) 0.6ft
Gap Fill: 3.0ft

Archive Name: BEAD_FARM_COMPANY_4_500MD_DETAIL_152_8383

Plot Width: 8.25 in

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
Oil and Gas Division

ELECTRIC LOG STATUS REPORT

FORM L-1

Tracking No.: 326182

This facsimile L-1 was generated electronically from data submitted to the RRC.

Instructions

When to File Form L-1:
- with Forms G-1, W-2, and GT-1 for new and deepened gas, oil, and geothermal wells
- with Form W-3 for plugged dry holes
- when sending in a log which was held under a request for confidentiality and the period for confidentiality has not yet expired.

When is Form L-1 NOT required:
- with Forms W-2, G-1, and GT-1 filed for injection wells, disposal wells, water supply wells, service wells, re-test wells, re-classifications, and plugbacks of oil, gas or geothermal wells
- with Form W-3 for plugging of other than a dry hole

Where to File Form L-1:
- with the appropriate Commission district office

Filling out Form L-1:
- Section I and the signature section must be filled out for all wells
- complete only the appropriate part of Section II

Type of log required:
- any wireline survey run for the purpose of obtaining lithology, porosity, or resistivity information
- no more than one such log is required but it must be of the subject well
- if such log is NOT run on the subject well, do NOT substitute any other type of log; just select Section II, Part A below

SECTION I. IDENTIFICATION

Operator Name: EXXONMOBIL LOW C SOL ON STOR LLC	District No. 03	Completion Date: 10/07/2024
Field Name WILDCAT	Drilling Permit No. 901180	
Lease Name BEAD FARM COMPANY	Lease/ID No. 28194	Well No. 4
County JEFFERSON	API No. 42- 245-32914	

SECTION II. LOG STATUS (Complete either A or B)

☐ A. BASIC ELECTRIC LOG NOT RUN

☒ B. BASIC ELECTRIC LOG RUN. (Select one)

☒ 1. Confidentiality is requested and a copy of the header for each log that has been run on the well is attached.

☐ 2. Confidentiality already granted on basic electric log covering this interval (applicable to deepened wells only).

☐ 3. Basic electric log covering this interval already on file with Commission (applicable to deepened wells only).

☐ 4. Log attached to (select one):

☐ (a) Form L-1 (this form). If the company/lease name on log is different from that shown in Section I, please enter name on log here: _____

Check here if attached log is being submitted after being held confidential. ☐

☐ (b) Form P-7, Application for Discovery Allowable and New Field Designation.

☐ (c) Form W-4, Application for Multiple Completion:

Lease or ID No(s). _____

Well No(s). _____

Josh Calkin
Signature

Title

EXXONMOBIL LOW C SOL ON STOR LLC
Name (print)

(281) 702-5537
Phone

12/18/2024
Date

-FOR RAILROAD COMMISSION USE ONLY-

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON

4607 HWY 90 EAST • BROUSSARD, LA 70518

PHONE 337 837 3061 • FAX 337 837 4400

Jefferson County,
State of Texas

I, **Kristen Killen,** certify that: I am employed by Halliburton Energy Service and that I did on the day(s) of **September 1, 2024 to September 5, 2024** conduct or supervise the taking of Directional Surveys as follow:

- **306' to a depth of 8320' MWD surveys performed by Sperry Drilling MWD**
- **Final survey is projected to a total depth of 8383'**

I certify that the data is true, correct, complete and within the limitations of the tool as set forth by Halliburton Energy Services. I further certify that I am authorized and qualified to make this report, that this survey was conducted at the request of **EXXONMOBIL LOW C SOL ON STOR LLC** for the **BEAD FARM COMPANY 4** in **Jefferson County, TX,** and that I have reviewed this report and find that it conforms to the principles and procedures set forth by Halliburton Energy Service for quality well surveying.

Kristen Killen, Log Analyst

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON
4607 HWY 90 EAST • BROUSSARD, LA 70518
PHONE 337 837 3061 • FAX 337 837 4400

September 20, 2024

Railroad Commission of Texas
Oil and Gas Division
P.O. Box 12967
Capital Station
Austin, TX 78711

Re: EXXONMOBIL LOW C SOL ON STOR LLC
R.R.C. Operator No. 101256
BEAD FARM COMPANY 4
Permit No. 901180
Jefferson County, TX
API # 42-245-32914

Attention: Ms. Pam Johns

Enclosed, please find one copy of the survey performed on the above referenced well by Halliburton Energy Services, Inc. Operator #347-151.

Other information required by your office is as follows:

Name & Title of Surveyor	-	Kristen Killen, Log Analyst
Drainhole Number	-	Original
Surveyed Depths	-	306' – 8320' MWD Surveys performed by Sperry Drilling
Dates Performed	-	September 1, 2024 to September 5, 2024
Type of Survey	-	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the listed e-mail address.

Respectfully,

Kristen Killen
Log Analyst
Kristen.Killen@Halliburton.com
Halliburton / Sperry Drilling

Enclosures
RE: LA-MM 909035812

CONFIDENTIAL BUSINESS INFORMATION

ExxonMobil

Jefferson County, Tx_NAD83
Rose Prospect CCS
Bead Farm Company 4
4224532914
004 ST00BP00 Monitor

Design: 004 ST00BP00

Sperry Drilling Services

Geodetic Report

16 September, 2024

Well Coordinates: 4,251,627.70 N, 1,053,835.22 E (30° 01' 16.84" N, 094° 17' 37.65" W)
Ground Level: 27.90 ft

Local Coordinate Origin:	Centered on Well Bead Farm Company 4
Viewing Datum:	(32.52') Nabors X-33 @ 60.4ft (Spud)
TVDs to System:	N
North Reference:	Grid
Unit System:	API

Version: 5000.17 Build: 04

HALLIBURTON

Design Report for Bead Farm Company 4 - 004 ST00BP00

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Geographic Coordinates Latitude (ft)	Geographic Coordinates Longitude (ft)	UTM Coordinates Northing (m)	UTM Coordinates Easting (m)
0.0	0.00	0.00	0.0	0.0	0.0	30° 1' 16.845 N	94° 17' 37.650 W	4,251,627.70	1,053,835.22
306.0	0.32	198.12	306.0	-0.8	-0.3	30° 1' 16.837 N	94° 17' 37.654 W	4,251,627.45	1,053,835.14
414.0	0.47	222.63	414.0	-1.4	-0.7	30° 1' 16.831 N	94° 17' 37.658 W	4,251,627.26	1,053,835.02
502.0	0.50	238.67	502.0	-1.9	-1.2	30° 1' 16.827 N	94° 17' 37.665 W	4,251,627.12	1,053,834.84
610.0	0.56	223.44	610.0	-2.5	-2.0	30° 1' 16.821 N	94° 17' 37.674 W	4,251,626.93	1,053,834.61
684.0	0.73	217.70	684.0	-3.2	-2.5	30° 1' 16.815 N	94° 17' 37.681 W	4,251,626.74	1,053,834.45
774.0	0.71	220.18	774.0	-4.0	-3.2	30° 1' 16.806 N	94° 17' 37.689 W	4,251,626.47	1,053,834.23
862.0	0.57	228.82	862.0	-4.7	-3.9	30° 1' 16.800 N	94° 17' 37.697 W	4,251,626.25	1,053,834.02
956.0	0.64	221.03	956.0	-5.4	-4.6	30° 1' 16.793 N	94° 17' 37.705 W	4,251,626.04	1,053,833.81
1,053.0	0.68	235.33	1,053.0	-6.2	-5.5	30° 1' 16.786 N	94° 17' 37.715 W	4,251,625.81	1,053,833.56
1,149.0	0.43	209.78	1,149.0	-6.8	-6.1	30° 1' 16.780 N	94° 17' 37.723 W	4,251,625.62	1,053,833.36
1,243.0	0.31	224.36	1,243.0	-7.3	-6.5	30° 1' 16.775 N	94° 17' 37.727 W	4,251,625.47	1,053,833.25
1,335.0	0.37	83.65	1,335.0	-7.4	-6.3	30° 1' 16.774 N	94° 17' 37.726 W	4,251,625.43	1,053,833.29
1,432.0	0.18	65.07	1,432.0	-7.3	-5.9	30° 1' 16.775 N	94° 17' 37.720 W	4,251,625.46	1,053,833.43
1,527.0	0.25	159.60	1,527.0	-7.5	-5.7	30° 1' 16.773 N	94° 17' 37.718 W	4,251,625.42	1,053,833.49
1,620.0	0.57	127.86	1,620.0	-8.0	-5.2	30° 1' 16.768 N	94° 17' 37.713 W	4,251,625.27	1,053,833.62
1,717.0	1.28	135.35	1,716.9	-9.0	-4.1	30° 1' 16.757 N	94° 17' 37.701 W	4,251,624.95	1,053,833.97
1,815.0	1.23	141.72	1,814.9	-10.6	-2.7	30° 1' 16.741 N	94° 17' 37.686 W	4,251,624.46	1,053,834.40
1,907.0	1.11	133.32	1,906.9	-12.0	-1.4	30° 1' 16.727 N	94° 17' 37.672 W	4,251,624.04	1,053,834.79
1,998.0	0.78	120.21	1,997.9	-12.9	-0.2	30° 1' 16.717 N	94° 17' 37.659 W	4,251,623.76	1,053,835.15
2,092.0	0.75	133.29	2,091.9	-13.7	0.8	30° 1' 16.709 N	94° 17' 37.648 W	4,251,623.53	1,053,835.45
2,178.0	0.91	127.05	2,177.9	-14.5	1.7	30° 1' 16.701 N	94° 17' 37.637 W	4,251,623.29	1,053,835.74
2,264.0	0.88	125.11	2,263.9	-15.3	2.8	30° 1' 16.693 N	94° 17' 37.625 W	4,251,623.05	1,053,836.07
2,361.0	0.86	135.03	2,360.8	-16.2	3.9	30° 1' 16.683 N	94° 17' 37.613 W	4,251,622.76	1,053,836.41
2,451.0	0.96	152.98	2,450.8	-17.4	4.7	30° 1' 16.671 N	94° 17' 37.604 W	4,251,622.41	1,053,836.66
2,545.0	1.05	155.00	2,544.8	-18.8	5.5	30° 1' 16.656 N	94° 17' 37.597 W	4,251,621.96	1,053,836.88
2,642.0	0.89	152.80	2,641.8	-20.3	6.2	30° 1' 16.642 N	94° 17' 37.589 W	4,251,621.51	1,053,837.10
2,733.0	0.81	161.95	2,732.8	-21.6	6.7	30° 1' 16.629 N	94° 17' 37.584 W	4,251,621.13	1,053,837.26
2,830.0	0.75	164.25	2,829.8	-22.8	7.1	30° 1' 16.616 N	94° 17' 37.580 W	4,251,620.74	1,053,837.38
2,928.0	0.62	164.53	2,927.8	-23.9	7.4	30° 1' 16.605 N	94° 17' 37.577 W	4,251,620.40	1,053,837.48
3,019.0	0.63	154.06	3,018.8	-24.9	7.8	30° 1' 16.596 N	94° 17' 37.573 W	4,251,620.12	1,053,837.58
3,115.0	0.65	156.66	3,114.8	-25.8	8.2	30° 1' 16.586 N	94° 17' 37.569 W	4,251,619.82	1,053,837.72
3,207.0	0.75	162.03	3,206.8	-26.9	8.6	30° 1' 16.576 N	94° 17' 37.565 W	4,251,619.50	1,053,837.84
3,302.0	0.82	170.76	3,301.8	-28.2	8.9	30° 1' 16.563 N	94° 17' 37.562 W	4,251,619.12	1,053,837.93
3,396.0	0.81	168.40	3,395.7	-29.5	9.1	30° 1' 16.550 N	94° 17' 37.560 W	4,251,618.71	1,053,838.00
3,415.8	0.81	169.63	3,415.6	-29.7	9.2	30° 1' 16.547 N	94° 17' 37.559 W	4,251,618.63	1,053,838.02
3,490.0	0.83	174.11	3,489.7	-30.8	9.3	30° 1' 16.537 N	94° 17' 37.558 W	4,251,618.31	1,053,838.07
3,585.0	0.76	182.72	3,584.7	-32.1	9.4	30° 1' 16.524 N	94° 17' 37.558 W	4,251,617.91	1,053,838.08
3,679.0	0.75	176.68	3,678.7	-33.3	9.4	30° 1' 16.511 N	94° 17' 37.559 W	4,251,617.53	1,053,838.08
3,774.0	0.69	165.36	3,773.7	-34.5	9.6	30° 1' 16.500 N	94° 17' 37.557 W	4,251,617.17	1,053,838.14
3,867.0	0.63	187.14	3,866.7	-35.6	9.7	30° 1' 16.489 N	94° 17' 37.557 W	4,251,616.85	1,053,838.16
3,961.0	0.69	183.27	3,960.7	-36.7	9.6	30° 1' 16.479 N	94° 17' 37.558 W	4,251,616.53	1,053,838.13

Design Report for Bead Farm Company 4 - 004 ST00BP00

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Geographic Coordinates Latitude	Geographic Coordinates Longitude	UTM Coordinates Northing (m)	UTM Coordinates Easting (m)
4,056.0	1.00	37.32	4,055.7	-36.6	10.0	30° 1' 16.479 N	94° 17' 37.553 W	4,251,616.55	1,053,838.27
4,150.0	1.12	45.72	4,149.7	-35.3	11.2	30° 1' 16.492 N	94° 17' 37.539 W	4,251,616.95	1,053,838.63
4,245.0	0.86	49.51	4,244.7	-34.2	12.4	30° 1' 16.502 N	94° 17' 37.525 W	4,251,617.29	1,053,838.99
4,434.0	0.63	55.87	4,433.7	-32.7	14.3	30° 1' 16.516 N	94° 17' 37.502 W	4,251,617.74	1,053,839.58
4,523.0	0.81	47.37	4,522.6	-32.0	15.2	30° 1' 16.523 N	94° 17' 37.492 W	4,251,617.96	1,053,839.85
4,600.0	0.93	49.95	4,599.6	-31.2	16.1	30° 1' 16.530 N	94° 17' 37.482 W	4,251,618.19	1,053,840.12
4,717.0	1.10	44.11	4,716.6	-29.8	17.6	30° 1' 16.544 N	94° 17' 37.464 W	4,251,618.62	1,053,840.58
4,813.0	1.20	50.22	4,812.6	-28.5	19.0	30° 1' 16.556 N	94° 17' 37.447 W	4,251,619.02	1,053,841.01
4,907.0	1.14	56.10	4,906.6	-27.3	20.5	30° 1' 16.567 N	94° 17' 37.429 W	4,251,619.37	1,053,841.47
5,002.0	1.30	54.06	5,001.6	-26.1	22.2	30° 1' 16.577 N	94° 17' 37.410 W	4,251,619.73	1,053,841.98
5,098.0	1.30	48.08	5,097.5	-24.8	23.9	30° 1' 16.590 N	94° 17' 37.390 W	4,251,620.14	1,053,842.50
5,192.0	1.27	65.27	5,191.5	-23.6	25.6	30° 1' 16.601 N	94° 17' 37.370 W	4,251,620.49	1,053,843.03
5,287.0	1.44	67.44	5,286.5	-22.7	27.7	30° 1' 16.609 N	94° 17' 37.346 W	4,251,620.77	1,053,843.65
5,380.0	1.58	61.93	5,379.5	-21.7	29.9	30° 1' 16.619 N	94° 17' 37.321 W	4,251,621.09	1,053,844.33
5,475.0	1.41	332.54	5,474.4	-20.0	30.5	30° 1' 16.635 N	94° 17' 37.313 W	4,251,621.59	1,053,844.51
5,570.0	1.54	324.88	5,569.4	-17.9	29.2	30° 1' 16.656 N	94° 17' 37.326 W	4,251,622.23	1,053,844.13
5,664.0	1.65	324.88	5,663.4	-15.8	27.7	30° 1' 16.678 N	94° 17' 37.342 W	4,251,622.88	1,053,843.67
5,758.0	1.72	324.00	5,757.3	-13.6	26.1	30° 1' 16.700 N	94° 17' 37.360 W	4,251,623.56	1,053,843.18
5,852.0	1.59	327.25	5,851.3	-11.3	24.6	30° 1' 16.723 N	94° 17' 37.376 W	4,251,624.25	1,053,842.71
5,947.0	1.76	326.45	5,946.2	-9.0	23.1	30° 1' 16.747 N	94° 17' 37.392 W	4,251,624.95	1,053,842.25
6,042.0	1.83	325.28	6,041.2	-6.5	21.4	30° 1' 16.772 N	94° 17' 37.410 W	4,251,625.70	1,053,841.74
6,136.0	1.55	320.67	6,135.2	-4.3	19.7	30° 1' 16.794 N	94° 17' 37.428 W	4,251,626.38	1,053,841.23
6,230.0	1.74	328.51	6,229.1	-2.1	18.2	30° 1' 16.817 N	94° 17' 37.445 W	4,251,627.05	1,053,840.76
6,325.0	1.67	328.65	6,324.1	0.3	16.7	30° 1' 16.841 N	94° 17' 37.460 W	4,251,627.79	1,053,840.31
6,419.0	1.61	334.63	6,418.0	2.7	15.4	30° 1' 16.865 N	94° 17' 37.474 W	4,251,628.51	1,053,839.92
6,514.0	1.72	331.62	6,513.0	5.1	14.2	30° 1' 16.890 N	94° 17' 37.487 W	4,251,629.26	1,053,839.54
6,609.0	1.67	330.10	6,608.0	7.6	12.8	30° 1' 16.915 N	94° 17' 37.501 W	4,251,630.00	1,053,839.12
6,703.0	1.84	340.46	6,701.9	10.2	11.6	30° 1' 16.941 N	94° 17' 37.514 W	4,251,630.80	1,053,838.76
6,797.0	1.98	336.67	6,795.9	13.1	10.5	30° 1' 16.970 N	94° 17' 37.525 W	4,251,631.69	1,053,838.41
6,893.0	2.28	321.94	6,891.8	16.1	8.6	30° 1' 17.001 N	94° 17' 37.545 W	4,251,632.61	1,053,837.85
6,987.0	2.20	322.22	6,985.7	19.0	6.4	30° 1' 17.031 N	94° 17' 37.569 W	4,251,633.49	1,053,837.16
7,081.0	2.13	327.85	7,079.7	21.9	4.3	30° 1' 17.060 N	94° 17' 37.591 W	4,251,634.38	1,053,836.54
7,176.0	2.19	330.29	7,174.6	25.0	2.5	30° 1' 17.091 N	94° 17' 37.610 W	4,251,635.32	1,053,835.98
7,271.0	2.38	329.87	7,269.5	28.3	0.6	30° 1' 17.124 N	94° 17' 37.630 W	4,251,636.32	1,053,835.41
7,365.0	2.32	329.24	7,363.4	31.6	-1.3	30° 1' 17.158 N	94° 17' 37.651 W	4,251,637.33	1,053,834.81
7,459.0	2.04	328.07	7,457.4	34.7	-3.2	30° 1' 17.189 N	94° 17' 37.671 W	4,251,638.26	1,053,834.24
7,554.0	1.11	302.87	7,552.3	36.6	-4.9	30° 1' 17.209 N	94° 17' 37.689 W	4,251,638.85	1,053,833.74
7,648.0	1.06	286.01	7,646.3	37.3	-6.5	30° 1' 17.217 N	94° 17' 37.707 W	4,251,639.07	1,053,833.25
7,743.0	1.05	266.73	7,741.3	37.5	-8.2	30° 1' 17.219 N	94° 17' 37.726 W	4,251,639.13	1,053,832.73
7,838.0	0.93	267.08	7,836.3	37.4	-9.8	30° 1' 17.219 N	94° 17' 37.745 W	4,251,639.11	1,053,832.23
7,933.0	1.31	273.72	7,931.3	37.5	-11.7	30° 1' 17.220 N	94° 17' 37.766 W	4,251,639.11	1,053,831.66
8,028.0	1.54	274.02	8,026.2	37.6	-14.0	30° 1' 17.223 N	94° 17' 37.792 W	4,251,639.16	1,053,830.94

Design Report for Bead Farm Company 4 - 004 ST00BP00

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Geographic Coordinates Latitude	Geographic Coordinates Longitude	UTM Coordinates Northing (m)	UTM Coordinates Easting (m)
8,122.0	1.54	272.79	8,120.2	37.8	-16.5	30° 1' 17.225 N	94° 17' 37.821 W	4,251,639.21	1,053,830.17
8,216.0	1.42	278.74	8,214.2	38.0	-19.0	30° 1' 17.228 N	94° 17' 37.848 W	4,251,639.28	1,053,829.44
8,320.0	1.48	303.75	8,318.1	38.9	-21.3	30° 1' 17.239 N	94° 17' 37.875 W	4,251,639.57	1,053,828.71
8,383.0	1.48	303.75	8,381.1	39.9	-22.7	30° 1' 17.248 N	94° 17' 37.890 W	4,251,639.84	1,053,828.30

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
8,383.0	8,381.1	39.9	-22.7	Proj. to Bit

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (ft)	Origin +E/-W (ft)	Start TVD (ft)
User	No Target (Freehand)	0.00	Slot	0.0	0.0	0.0

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
306.0	2,178.0	01 HAL MWD (MagVarMS) 12 1/4" Hole 306' - 2178'	3_MWD+HRGM+MS
2,264.0	8,320.0	02 HAL MWD (MagVarMS) 8 1/2" Hole 2264' - 8320'	3_MWD+HRGM+MS

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
152.5	152.5	20" Conductor Casing	20.000	20.000
2,184.0	2,183.9	9-5/8" Surface Casing	9.625	12.250
8,367.5	8,365.6	5-1/2" Production Casing	5.500	8.500

CONFIDENTIAL BUSINESS INFORMATION

Design Report for Bead Farm Company 4 - 004 ST00BP00

Targets for 004 ST00BP00 Monitor

Shape	Target Name	TVD (ft)	Northing (m)	Easting (m)	+N/-S ft	+E/-W ft	Created	Updated
Polygon	Rose2 T. Fleming SD Rect. 400'	3,562.0	4,248,251.97	1,053,561.35	-11,075.2	-898.5	5/13/2024	7/5/2024
Polygon	Rose1 T. Fleming SD Rect. 400'	3,508.3	4,249,261.67	1,054,768.97	-7,762.6	3,063.5	5/13/2024	6/17/2024
Polygon	Rose BF4 T. Fleming SD Rect. 150'	3,416.0	4,251,627.70	1,053,835.22	0.0	0.0	7/30/2024	8/29/2024

North Reference Sheet for Rose Prospect CCS - Bead Farm Company 4 - 004 ST00BP00 Monitor

All data is in Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to (32.52') Nabors X-33 @ 60.4ft (Spud). Northing and Easting are relative to Bead Farm Company 4

Coordinate System is US State Plane 1983, Texas South Central Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is 99° 0' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:30° 17' 0.000 N°

False Easting: 600,000.00m, False Northing: 4,000,000.00m, Scale Reduction: 0.99993482

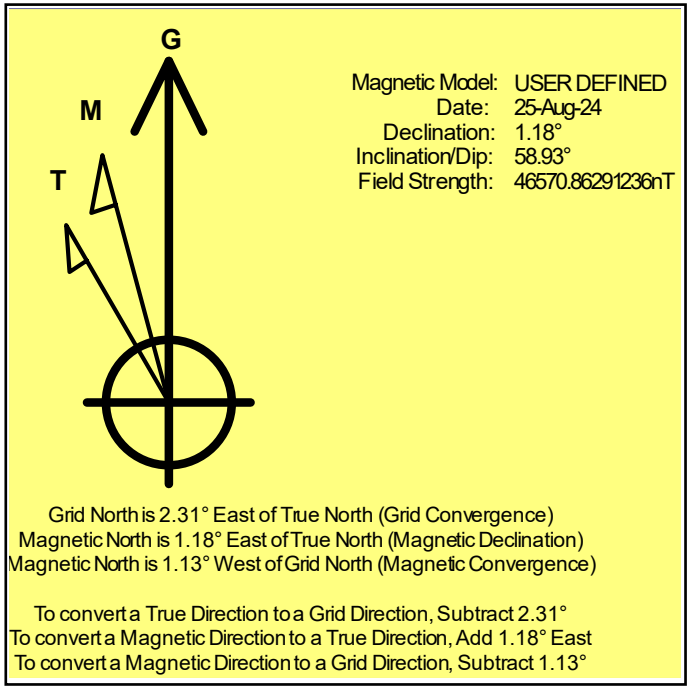
Grid Coordinates of Well: 4,251,627.70 m N, 1,053,835.22 m E

Geographical Coordinates of Well: 30° 01' 16.84" N, 094° 17' 37.65" W

Grid Convergence at Surface is: 2.31°

Based upon Minimum Curvature type calculations, at a Measured Depth of 8,383.02ft

the Bottom Hole Displacement is 45.86ft in the Direction of 330.33° (Grid).
Magnetic Convergence at surface is: 1.13° (25 August 2024, , User Defined)



CONFIDENTIAL BUSINESS INFORMATION

Railroad Commission of Texas

PERMIT TO DRILL, RE-COMPLETE, OR RE-ENTER ON REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

CONDITIONS AND INSTRUCTIONS

Permit Invalidation. It is the operator's responsibility to make sure that the permitted location complies with Commission density and spacing rules in effect on the spud date. The permit becomes invalid automatically if, because of a field rule change or the drilling of another well, the stated location is not in compliance with Commission field rules on the spud date. If this occurs, application for an exception to Statewide Rules 37 and 38 must be made and a special permit granted prior to spudding. Failure to do so may result in an allowable not being assigned and/or enforcement procedures being initiated.

Notice Requirements. Per H.B 630, signed May 8, 2007, the operator is required to provide notice to the surface owner no later than the 15th business day after the Commission issues a permit to drill. Please refer to subchapter Q Sec. 91.751-91.755 of the Texas Natural Resources Code for applicability.

Permit expiration. This permit expires two (2) years from the date of issuance shown on the original permit. The permit period will not be extended.

Drilling Permit Number. The drilling permit number shown on the permit MUST be given as a reference with any notification to the district (see below), correspondence, or application concerning this permit.

Rule 37 Exception Permits. This Statewide Rule 37 exception permit is granted under either provision Rule 37 (h)(2)(A) or 37(h)(2)(B). Be advised that a permit granted under Rule 37(h)(2)(A), notice of application, is subject to the General Rules of Practice and Procedures and if a protest is received under Section 1.3, "Filing of Documents," and/or Section 1.4, "Computation of Time," the permit may be deemed invalid.

Before Drilling

Fresh Water Sand Protection. The operator must set and cement sufficient surface casing to protect all usable-quality water, as defined by the Railroad Commission of Texas (RRC) Groundwater Advisory Unit (GWAU). Before drilling a well, the operator must obtain a letter from the Railroad Commission of Texas stating the depth to which water needs protection, Write: Railroad Commission of Texas, Groundwater Advisory Unit (GWAU), P.O. Box 12967, Austin, TX 78711-3087. File a copy of the letter with the appropriate district office.

Accessing the Well Site. If an OPERATOR, well equipment TRANSPORTER or WELL service provider must access the well site from a roadway on the state highway system (Interstate, U.S. Highway, State Highway, Farm-to-Market Road, Ranch-to-Market Road, etc.), an access permit is required from TxDOT. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

Water Transport to Well Site. If an operator intends to transport water to the well site through a temporary pipeline laid above ground on the state's right-of-way, an additional TxDOT permit is required. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

***NOTIFICATION**

The operator is **REQUIRED** to notify the district office when setting surface casing, intermediate casing, and production casing, or when plugging a dry hole. The district office **MUST** also be notified if the operator intends to re-enter a plugged well or re-complete a well into a different regulatory field. Time requirements are given below. The drilling permit number **MUST** be given with such notifications.

During Drilling

Permit at Drilling Site. A copy of the Form W-1 Drilling Permit Application, the location plat, a copy of Statewide Rule 13 alternate surface casing setting depth approval from the district office, if applicable, and this drilling permit must be kept at the permitted well site throughout drilling operations.

***Notification of Setting Casing.** The operator MUST call in notification to the appropriate district office (phone number shown the on permit) a minimum of eight (8) hours prior to the setting of surface casing, intermediate casing, AND production casing. The individual giving notification MUST be able to advise the district office of the drilling permit number.

***Notification of Re-completion/Re-entry.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of eight (8) hours prior to the initiation of drilling or re-completion operations. The individual giving notification MUST be able to advise the district office of the drilling permit number.

Completion and Plugging Reports

Hydraulic Fracture Stimulation using Diesel Fuel: Most operators in Texas do not use diesel fuel in hydraulic fracturing fluids. Section 322 of the Energy Policy Act of 2005 amended the Underground Injection Control (UIC) portion of the federal Safe Drinking Water Act (42 USC 300h(d)) to define "underground Injection" to *EXCLUDE* " ...the underground injection of fluids or propping agents (*other than diesel fuels*) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities." (italic and underlining added.) Therefore, hydraulic fracturing may be subject to regulation under the federal UIC regulations if diesel fuel is injected or used as a propping agent. EPA defined "diesel fuel" using the following five (5) Chemical Abstract Service numbers: 68334-30-5 Primary Name: Fuels, diesel; 68476-34-6 Primary Name: Fuels, diesel, No. 2; 68476-30-2 Primary Name: Fuel oil No. 2; 68476-31-3 Primary Name: Fuel oil, No. 4; and 8008-20-6 Primary Name: Kerosene. As a result, an injection well permit would be required before performing hydraulic fracture stimulation using diesel fuel as defined by EPA on any well in Texas. Hydraulic fracture stimulation using diesel fuel as defined by EPA on a well in Texas without an injection well permit could result in enforcement action.

Producing Well. Statewide Rule 16 states that the operator of a well shall file with the Commission the appropriate completion report within ninety (90) days after completion of the well or within one hundred and fifty (150) days after the date on which the drilling operation is completed, whichever is earlier. Completion of the well in a field authorized by this permit voids the permit for all other fields included in the permit unless the operator indicates on the initial completion report that the well is to be a dual or multiple completion and promptly submits an application for multiple completion. All zones are required to be completed before the expiration date on the existing permit. Statewide Rule 40(d) requires that upon successful completion of a well in the same reservoir as any other well previously assigned the same acreage, proration plats and P-15s or P-16s (if required) or a lease plat and P-16 must be submitted with no double assignment of acreage unless authorized by rule.

Dry or Noncommercial Hole. Statewide Rule 14(b)(2) prohibits suspension of operations on each dry or non-commercial well without plugging unless the hole is cased and the casing is cemented in compliance with Commission rules. If properly cased, Statewide Rule 14(b)(2) requires that plugging operations must begin within a period of one (1) year after drilling or operations have ceased. Plugging operations must proceed with due diligence until completed. An extension to the one-year plugging requirement may be granted under the provisions stated in Statewide Rule 14(b)(2).

Intention to Plug. The operator must file a Form W-3A (Notice of Intention to Plug and Abandon) with the district office at least five (5) days prior to beginning plugging operations. If, however, a drilling rig is already at work on location and ready to begin plugging operations, the district director or the director's delegate may waive this requirement upon request, and verbally approve the proposed plugging procedures.

***Notification of Plugging a Dry Hole.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of four (4) hours prior to beginning plugging operations. The individual giving the notification MUST be able to advise the district office of the drilling permit number and all water protection depths for that location as stated in the Groundwater Advisory Unit letter.

DIRECT INQUIRIES TO: DRILLING PERMIT SECTION, OIL AND GAS DIVISION

PHONE
(512) 463-6751

MAIL:
PO Box 12967
Austin, Texas, 78711-2967

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER	DATE PERMIT ISSUED OR AMENDED	DISTRICT
901180	Jul 11, 2024	* 03
API NUMBER	FORM W-1 RECEIVED	COUNTY
42-245-32914	Jul 10, 2024	JEFFERSON
TYPE OF OPERATION	WELLBORE PROFILE(S)	ACRES
NEW DRILL	Vertical	454

OPERATOR 101256

EXXONMOBIL LOW C SOL ON STOR LLC

ATTN EDWARD E GRAHAM
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389

NOTICE
This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored.
District Office Telephone No:
(713) 869-5001

LEASE NAME	WELL NUMBER
BEAD FARM COMPANY	4
LOCATION	TOTAL DEPTH
3 miles SE direction from CHINA, TX	10000

Section, Block and/or Survey

SECTION 7 BLOCK ABSTRACT 150

SURVEY HT&B RR CO

DISTANCE TO SURVEY LINES	DISTANCE TO NEAREST LEASE LINE
522 ft. SOUTH 1434 ft. EAST	ft.
DISTANCE TO LEASE LINES	DISTANCE TO NEAREST WELL ON LEASE
522 ft. SOUTH 1434 ft. EAST	See FIELD(s) Below

FIELD(s) and LIMITATIONS:

* SEE FIELD DISTRICT FOR REPORTING PURPOSES *

FIELD NAME / LEASE NAME	ACRES / NEAREST LEASE	DEPTH	WELL # / NEAREST WE	DIST
WILDCAT	454.00	10,000	4	03
BEAD FARM COMPANY			0	

RESTRICTIONS: For exploratory test only

THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS

This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.

This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

SWR #13 Formation Data

JEFFERSON (245) County

Formation	Remarks	Geological Order	Effective Date
LAFAYETTE	disposal	1	12/17/2013
CAPROCK	disposal	2	12/17/2013
SPINDLETOP SALT DOME	disposal	3	12/17/2013
FANNETT SALT DOME	disposal	4	12/17/2013
BIG HILL SALT DOME	disposal	5	12/17/2013
PLEISTOCENE-LISSIE	disposal	6	12/17/2013
MIOCENE	disposal	7	12/17/2013
FRIO	disposal	8	12/17/2013
MARINULINA	disposal	9	12/17/2013
HETEROSTEGINA	disposal	10	12/17/2013

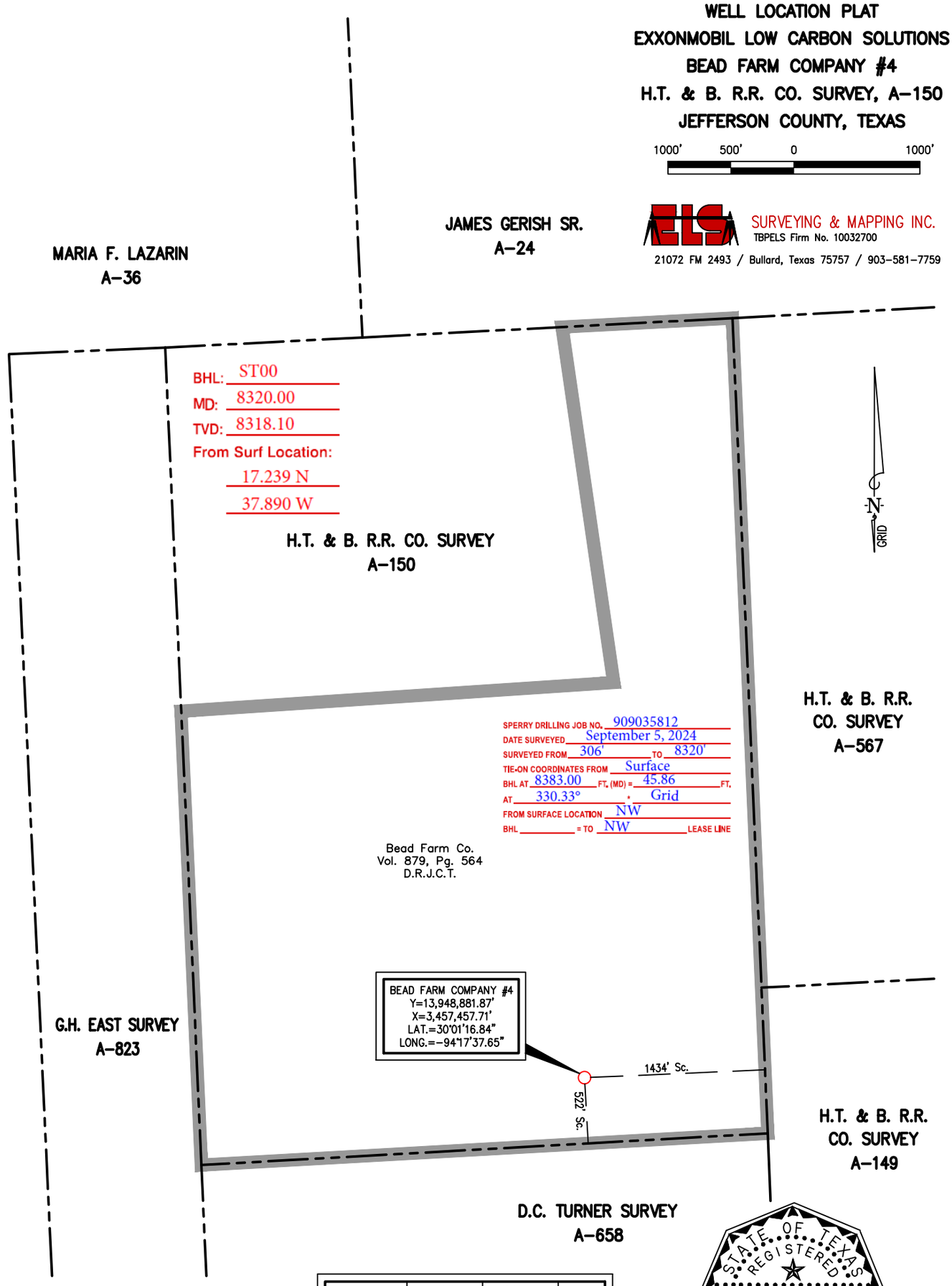
The above list may not be all inclusive, and may also include formations that do not intersect all wellbores. The listing order of the Formation information reflects the general stratigraphic order and relative geologic age. This is a dynamic list subject to updates and revisions. It is the operator's responsibility to make sure that at the time of spudding the well the most current list is being referenced. Refer to the RRC website at the following address for the most recent information.
http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info

CONFIDENTIAL BUSINESS INFORMATION

WELL LOCATION PLAT
EXXONMOBIL LOW CARBON SOLUTIONS
BEAD FARM COMPANY #4
H.T. & B. R.R. CO. SURVEY, A-150
JEFFERSON COUNTY, TEXAS

1000' 500' 0 1000'

ELS SURVEYING & MAPPING INC.
TBPELS Firm No. 10032700
21072 FM 2493 / Bullard, Texas 75757 / 903-581-7759



SHL	TRACT CALLS	SURVEY CALLS	ELEV.
BEAD FARM COMPANY #4	522' Sc. FSL 1434' Sc. FEL	522' Sc. FSL 1434' Sc. FEL	24.0'

STATE OF TEXAS REGISTERED
JIM G. GLASS
5262
PROFESSIONAL LAND SURVEYOR

Location is approximately
12.3 miles SW of Beaumont, Tx.
"CHINA" Quadrangle

Driving Directions:
From the Intersection of I10 and Smith Road near Cheek, TX, go Northwest on Smith Road, .8 miles turn left (West) Kidd Road. Go 1.6 miles turn right (North) on Boyt Road. Go 1.1 miles stay straight (West) on Lawhon Rd. Go 2.8 miles turn right (North) on Green Pond Gully Road Go 1.5 miles. Turn Left (Northwest). Drive on location.

DATE SURVEYED: 5/20/2024

Location is staked from tract lines as evidenced by occupation, information obtained from the Tx. R.R.C and provided deed records. Distances shown are not intended to be definitive in establishing actual title boundaries. The deed data shown hereon was furnished by others. This is not a title survey. Vesting documents may not have been provided. Bearings and distances are based on the Texas State Plane Coordinate System N.A.D. 83 (2011) (South Central Zone) derived from GPS Observations.

LEGEND
= TRACT LINE
= SURVEY LINE
= PROPOSED WELL

FOR THE EXCLUSIVE USE OF
EXXONMOBIL LOW CARBON SOLUTIONS

STATE OF TEXAS – – – COUNTY OF SMITH
I, Jim G. Glass, Registered Professional Land Surveyor, do hereby certify the above plat to be true and correct to the best of my knowledge.
Date: May 30, 2024 Bullard, Texas
E.L.S. Surveying & Mapping, Inc.

Registered Professional Land Surveyor No. 5262

Drafter: BWT/ECJ FB 2747/36-37 Job No. 430923 Map No. J-0923-LOC-MON2

CONFIDENTIAL BUSINESS INFORMATION

CHRISTI CRADDICK, CHAIRMAN
WAYNE CHRISTIAN, COMMISSIONER
JIM WRIGHT, COMMISSIONER



DANNY SORRELLS
DIRECTOR, OIL AND GAS DIVISION
PETER FISHER, P.G.
DISTRICT DIRECTOR

RAILROAD COMMISSION OF TEXAS

OIL AND GAS DIVISION

OPERATOR Name:	EXXONMOBIL LOW C SOL ON	**RE:**	**Lease:**	BEAD FARM COMPANY
Address1:	ATTN EDWARD E GRAHAM			
Address2:	22777 SPRINGWOODS VILLAGE PKWY	**Well No:**	4	
City:	SPRING	**Sec:**	7	**Block:**
State:	TX	**County:**	JEFFERSON	
		Survey Name:	HT&B RR CO	

SWR13EX Application Number: 132309 **Drilling Permit No:** 901180

SWR 13 CASING EXCEPTION APPLICATION/ALTERNATIVE REQUEST APPROVED

The Proposed Casing and Cementing Program submitted for **LEASE** BEAD FARM COMPANY ;
WELL 4 has been approved by the Railroad Commission of Texas District Office.

a. A copy of this approved letter must be kept on location during all phases of drilling and/or plugging operations. Once approved, changes CANNOT be made to the Proposed Casing Program on the original application without additional approval from the Railroad Commission of Texas District Office.

b. Any substantive modifications to the cement program require prior approval from the Railroad Commission of Texas District Office, and may require re-submission of the SWR 13 (Statewide Rule 13) Alternate Surface Casing Application. Contact the Railroad Commission of Texas District Office for more information.

c. The tail slurry must be sufficient to fill the Zone of Critical Cement as described in Statewide Rule 13(b)(1)(H)(i). In addition, all cement slurries must be mixed on location as described in Application for Alternate Surface Casing Program.

d. The casing and cement program shall adhere to the following specifications:

Set 2350 feet of surface casing and circulate cement from the shoe to the ground surface.

IF CEMENT IS NOT CIRCULATED TO THE GROUND SURFACE AS REQUIRED BY THIS EXCEPTION, YOU MUST CONTACT THE RAILROAD COMMISSION OF TEXAS DISTRICT OFFICE IMMEDIATELY AND FOLLOW THE PROCEDURES SET OUT IN RULE 13(b)(1)(H)(iii) OR AS REQUIRED BY THE RAILROAD COMMISSION OF TEXAS DISTRICT OFFICE.

You must comply with all other provisions of SWR 13 (Statewide Rule 13) and a representative of the cementing company who performs the cementing job for the protection of usable quality water strata must sign the Form W-15 attesting to the information regarding cementing operations performed; including circulation of cement. (Note: If surface casing is set below the approved depth, this can result in denial of future Statewide Rule 13(b)(1)(H)(i) requests.) A condition of the approved drilling permit requires notification to the Railroad Commission of Texas District Office eight (8) hours prior to the time casing is to be set/cemented in the well. If your exception request was submitted after the subject well has been drilled and completed, the operator may be referred for enforcement action.

This authorization shall expire within five (5) years from the date the Groundwater Protection Determination was issued, or at the expiration of the drilling permit (if the well is not spudded prior to expiration) for the referenced well, whichever occurs first. Furthermore, this authorization supersedes any prior authorizations issued for the referenced well.

This exception is based on information provided when the application was submitted 07/18/2024 .
If any information has changed, you must contact the appropriate Railroad Commission of Texas District Office, and submit a new application if applicable. If you have questions, please contact the appropriate Oil and Gas District office.

RRC APPROVAL BY: AUDREY KUKLENZ DATE: 07/22/2024

PETER FISHER, P.G.

DISTRICT DIRECTOR

CONFIDENTIAL BUSINESS INFORMATION

22777 Springwoods Parkway
Spring, Texas 77389

To whom it may concern,

This notice is to inform that the Bead Farm Company #4 well (API# 42-245-32914), located in Jefferson County, Texas, will be converted into a monitoring well. The well has been equipped with the with the following instrumentation:

- Electric line (TEC) from surface to a well depth of 7,787 feet MD with pressure and temperature sensors installed intermittently from 3,347 feet MD to 7,787 feet MD.
- Fiber optic pressure and temperature gauge sensor at 2,475 feet MD.
- U-tube fluid sampler with casing mounted guns. The perforation interval for fluid sampling is from 2,491 feet MD to 2,501 feet MD.
- Fiber optic cable from the surface to a well depth of 8,234 feet MD.

All the above equipment was installed on the exterior of the production casing and cemented in place. There are no perforations through the casing.

Regards,

DocuSigned by:
Jonathan Rodriguez
D38AA01693BB4EE...

Jonathan Rodriguez
Completion Advisor
ExxonMobil

CONFIDENTIAL BUSINESS INFORMATION

docusign

Certificate Of Completion

Envelope Id: 28E2F290-FB72-40D0-AA8F-30274455EBC0
Status: Completed
Subject: Complete with Docusign: W2 Monitor Well Statement V2.pdf
Source Envelope:
Document Pages: 1
Signatures: 1
Envelope Originator:
Certificate Pages: 2
Initials: 0
WILLIAM Carr
AutoNav: Enabled
Address Redacted
EnvelopeId Stamping: Disabled
william.j.carr@exxonmobil.com
Time Zone: (UTC-06:00) Central Time (US & Canada)
IP Address: 136.228.238.182

Record Tracking

Status: Original
12/23/2024 2:53:49 PM
Holder: WILLIAM Carr
william.j.carr@exxonmobil.com
Location: DocuSign
Security Appliance Status: Connected
Pool: Main SecApp 1

Signer Events	Signature	Timestamp
Jonathan Rodriguez jonathan.a.rodriguez@exxonmobil.com ExxonMobil General Security Level: Email, Account Authentication (None)	DocuSigned by:  D38AA01693BB4EE... Signature Adoption: Pre-selected Style Using IP Address: 136.228.238.73	Sent: 12/23/2024 2:54:34 PM Viewed: 12/23/2024 2:55:37 PM Signed: 12/23/2024 2:55:47 PM

Electronic Record and Signature Disclosure:
Accepted: 7/12/2022 6:18:31 AM
ID: 24c3aed4-aea4-42d2-a30a-2d53609eb06c
Company Name: Exxon Mobil Corporation

In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp

Agent Delivery Events	Status	Timestamp

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp

Witness Events	Signature	Timestamp

Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	12/23/2024 2:54:34 PM
Certified Delivered	Security Checked	12/23/2024 2:55:37 PM
Signing Complete	Security Checked	12/23/2024 2:55:47 PM
Completed	Security Checked	12/23/2024 2:55:47 PM

Payment Events	Status	Timestamps

Electronic Record and Signature Disclosure

CONFIDENTIAL BUSINESS INFORMATION

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Acknowledging your access and consent to receive materials electronically By checking the 'I agree' box, I confirm that:

- I can access and read this Electronic CONSENT TO ELECTRONIC RECEIPT OF ELECTRONIC RECORD AND SIGNATURE DISCLOSURES document; and
- I can print on paper the disclosure or save or send the disclosure to a place where I can print it, for future reference.
- I am authorized to do the specific type of work (approve, endorse, etc.) in the country where I am physically located when using DocuSign

Getting paper copies You will have the ability to download and print documents we send to you through the DocuSign system during and immediately after signing the document.
How to contact Exxon Mobil Corporation: For email address changes or if you have questions about a document you receive please contact the sending ExxonMobil Business organization.
[1] ExxonMobil and/or ExxonMobil Affiliates mean (a) Exxon Mobil Corporation or any parent of Exxon Mobil Corporation, (b) any company or partnership in which Exxon Mobil Corporation or any parent of Exxon Mobil Corporation now or hereafter, directly or indirectly (1) owns or (2) controls, more than fifty per cent (50%) of the ownership interest having the right to vote or appoint its directors or functional equivalents ("Affiliated Company") and (c) any joint venture in which Exxon Mobil Corporations, any parent of Exxon Mobil Corporation or an Affiliated Company has day to day operational control. Note, nothing contained herein is intended to override the corporate separateness of affiliated companies. Working relationships discussed in this material do not necessarily represent a reporting connection, but may reflect a functional guidance, stewardship, or service relationship. Where shareholder consideration of a local entity matter is contemplated by this material, responsibility for action remains with the local entity. All actions contemplated herein are subject to observance of corporate separateness principles and other requirements of applicable laws and contractual arrangements.

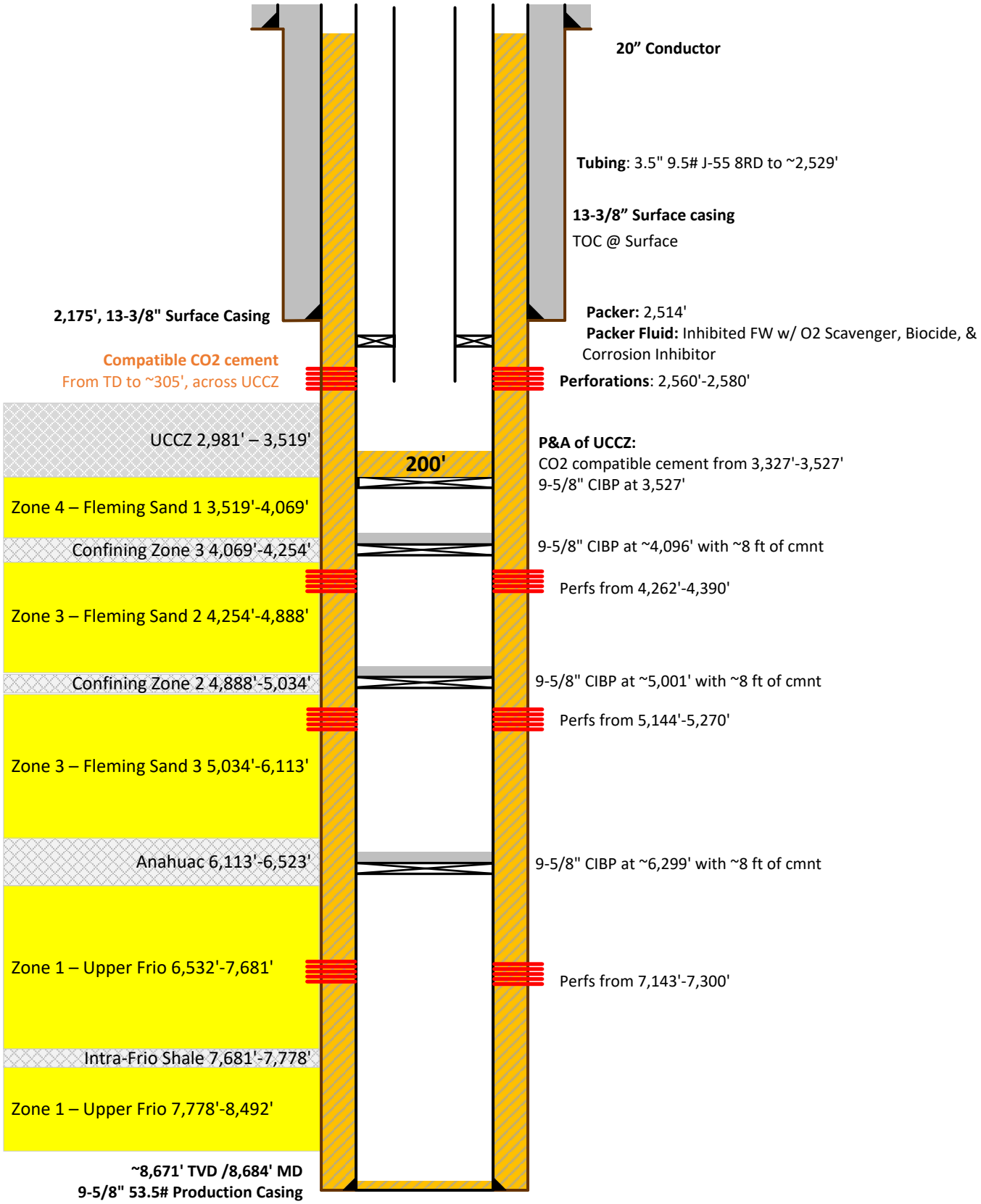
CONFIDENTIAL BUSINESS INFORMATION

4224532908 Bead Farm Co. #1 (Above-Zone Monitoring Well No. 01)

CONFIDENTIAL BUSINESS INFORMATION

Rose CCS Project Bead Farm 1

Recompletion Schematic



CONFIDENTIAL BUSINESS INFORMATION

API No. 42-245-32908
Drilling Permit # 891726
SWR Exception

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

APPLICATION FOR PERMIT TO DRILL, RECOMPLETE, OR RE-ENTER

This facsimile W-1 was generated electronically from data submitted to the RRC.
A certification of the automated data is available in the RRC's Austin office.

FORM W-1 07/2004

Permit Status: Approved

1. RRC Operator No.: 101256

2. Operator's Name (as shown on form P-5, Organization Report): EXXONMOBIL LOW C SOL ON STOR LLC

3. Operator Address (include street, city, state, zip):
ATTN EDWARD E GRAHAM
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389-0000

4. Lease Name: BEAD FARM CO.

5. Well No.: 1

GENERAL INFORMATION

6. Purpose of filing (mark ALL appropriate boxes): [X] New Drill [ ] Recompletion [ ] Reclass [ ] Field Transfer [ ] Re-Enter [ ] Amended [ ] Amended as Drilled (BHL) (Also File Form W-1D)

7. Wellbore Profile (mark ALL appropriate boxes): [X] Vertical [ ] Horizontal (Also File Form W-1H) [ ] Directional (Also File Form W-1D) [ ] Sidetrack

8. Total Depth: 8700

9. Do you have the right to develop the minerals under any right-of-way ? [X] Yes [ ] No

10. Is this well subject to Statewide Rule 36 (hydrogen sulfide area)? [ ] Yes [X] No

SURFACE LOCATION AND ACREAGE INFORMATION

11. RRC District No.: 03

12. County: JEFFERSON

13. Surface Location [X] Land [ ] Bay/Estuary [ ] Inland Waterway [ ] Offshore

14. This well is to be located 18 miles in a E direction from Cleveland which is the nearest town in the county of the well site.

15. Section: 41

16. Block:

17. Survey: T&NO RR CO

18. Abstract No.: A-266

19. Distance to nearest lease line: ft.

20. Number of contiguous acres in lease, pooled unit, or unitized tract: 642.2

21. Lease Perpendiculars: 1475 ft from the N line and 1817 ft from the W line.

22. Survey Perpendiculars: 1475 ft from the N line and 1817 ft from the W line.

23. Is this a pooled unit? [ ] Yes [X] No

24. Unitization Docket No:

25. Are you applying for Substandard Acreage Field? [ ] Yes (attach Form W-1A) [X] No

FIELD INFORMATION List all fields of anticipated completion including Wildcat. List one zone per line.

26. RRC District No.	27. Field No.	28. Field Name (exactly as shown in RRC records)	29. Well Type	30. Completion Depth	31. Distance to Nearest Well in this Reservoir	32. Number of Wells on this lease in this Reservoir
03	00006001	WILDCAT	Exploratory Test Well	8495	0.00	1

BOTTOMHOLE LOCATION INFORMATION is required for DIRECTIONAL, HORIZONTAL, AND AMENDED AS DRILLED PERMIT APPLICATIONS

Remarks
See W1 Comments attached

Certificate:
I certify that information stated in this application is true and complete, to the best of my knowledge.

Leslie Sincler — Name of filer
Jun 28, 2023 — Date submitted

(832)654-3475 — Phone
leslie@exxonmobil.com — E-mail Address (OPTIONAL)

RRC Use Only Data Validation Time Stamp: Mar 27, 2025 2:09 PM(Current Version)

CONFIDENTIAL BUSINESS INFORMATION

Permit Status: Approved

The RRC has not approved this application. Duplication or distribution of information is at the user's own risk.

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

APPLICATION FOR PERMIT TO DRILL, RECOMPLETE, OR RE-ENTER

This facsimile W-1 was generated electronically from data submitted to the RRC.
A certification of the automated data is available in the RRC's Austin office.

W-1 Comments

Permit # 891726

Approved Date: Aug 18, 2023

[FILER Jun 28, 2023 2:17 PM]: Proposed well is an exploratory test well. Well completions tests are planned to include up to an estimated 21,000 bbls of salt and water solution. Tests will be completed at three intervals over the course of up to an estimated three weeks.; [RRC STAFF Jun 29, 2023 5:43 PM]: W-1 coordinates changed to match plat.; [RRC STAFF Jun 30, 2023 4:13 PM]: There have been problems identified with this permit (see problem letter attachment). Notification sent.; [RRC STAFF Jun 30, 2023 4:14 PM]: W-1 is being held until it is determined if Financial Assurance is needed for carbon capture.; [RRC STAFF Jul 6, 2023 10:40 AM]: There have been problems identified with this permit (see problem letter attachment). Notification sent.; [RRC STAFF Aug 17, 2023 2:09 PM]: Financial Assurance has been submitted and is currently being processed. The status is currently Pending, when it updates to Approved, the W-1 can be approved.; [RRC STAFF Aug 18, 2023 6:26 PM]: Financial Assurance has been updated to approved.; [RRC STAFF Aug 18, 2023 6:26 PM]: Problems identified with this permit are resolved.

CONFIDENTIAL BUSINESS INFORMATION

Railroad Commission of Texas

PERMIT TO DRILL, RE-COMPLETE, OR RE-ENTER ON REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

CONDITIONS AND INSTRUCTIONS

Permit Invalidation. It is the operator's responsibility to make sure that the permitted location complies with Commission density and spacing rules in effect on the spud date. The permit becomes invalid automatically if, because of a field rule change or the drilling of another well, the stated location is not in compliance with Commission field rules on the spud date. If this occurs, application for an exception to Statewide Rules 37 and 38 must be made and a special permit granted prior to spudding. Failure to do so may result in an allowable not being assigned and/or enforcement procedures being initiated.

Notice Requirements. Per H.B 630, signed May 8, 2007, the operator is required to provide notice to the surface owner no later than the 15th business day after the Commission issues a permit to drill. Please refer to subchapter Q Sec. 91.751-91.755 of the Texas Natural Resources Code for applicability.

Permit expiration. This permit expires two (2) years from the date of issuance shown on the original permit. The permit period will not be extended.

Drilling Permit Number. The drilling permit number shown on the permit MUST be given as a reference with any notification to the district (see below), correspondence, or application concerning this permit.

Rule 37 Exception Permits. This Statewide Rule 37 exception permit is granted under either provision Rule 37 (h)(2)(A) or 37(h)(2)(B). Be advised that a permit granted under Rule 37(h)(2)(A), notice of application, is subject to the General Rules of Practice and Procedures and if a protest is received under Section 1.3, "Filing of Documents," and/or Section 1.4, "Computation of Time," the permit may be deemed invalid.

Before Drilling

Fresh Water Sand Protection. The operator must set and cement sufficient surface casing to protect all usable-quality water, as defined by the Railroad Commission of Texas (RRC) Groundwater Advisory Unit (GWAU). Before drilling a well, the operator must obtain a letter from the Railroad Commission of Texas stating the depth to which water needs protection, Write: Railroad Commission of Texas, Groundwater Advisory Unit (GWAU), P.O. Box 12967, Austin, TX 78711-3087. File a copy of the letter with the appropriate district office.

Accessing the Well Site. If an OPERATOR, well equipment TRANSPORTER or WELL service provider must access the well site from a roadway on the state highway system (Interstate, U.S. Highway, State Highway, Farm-to-Market Road, Ranch-to-Market Road, etc.), an access permit is required from TxDOT. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

Water Transport to Well Site. If an operator intends to transport water to the well site through a temporary pipeline laid above ground on the state's right-of-way, an additional TxDOT permit is required. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

***NOTIFICATION**

The operator is **REQUIRED** to notify the district office when setting surface casing, intermediate casing, and production casing, or when plugging a dry hole. The district office **MUST** also be notified if the operator intends to re-enter a plugged well or re-complete a well into a different regulatory field. Time requirements are given below. The drilling permit number **MUST** be given with such notifications.

During Drilling

Permit at Drilling Site. A copy of the Form W-1 Drilling Permit Application, the location plat, a copy of Statewide Rule 13 alternate surface casing setting depth approval from the district office, if applicable, and this drilling permit must be kept at the permitted well site throughout drilling operations.

***Notification of Setting Casing.** The operator MUST call in notification to the appropriate district office (phone number shown the on permit) a minimum of eight (8) hours prior to the setting of surface casing, intermediate casing, AND production casing. The individual giving notification MUST be able to advise the district office of the drilling permit number.

***Notification of Re-completion/Re-entry.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of eight (8) hours prior to the initiation of drilling or re-completion operations. The individual giving notification MUST be able to advise the district office of the drilling permit number.

Completion and Plugging Reports

Hydraulic Fracture Stimulation using Diesel Fuel: Most operators in Texas do not use diesel fuel in hydraulic fracturing fluids. Section 322 of the Energy Policy Act of 2005 amended the Underground Injection Control (UIC) portion of the federal Safe Drinking Water Act (42 USC 300h(d)) to define "underground Injection" to *EXCLUDE* " ...the underground injection of fluids or propping agents (*other than diesel fuels*) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities." (italic and underlining added.) Therefore, hydraulic fracturing may be subject to regulation under the federal UIC regulations if diesel fuel is injected or used as a propping agent. EPA defined "diesel fuel" using the following five (5) Chemical Abstract Service numbers: 68334-30-5 Primary Name: Fuels, diesel; 68476-34-6 Primary Name: Fuels, diesel, No. 2; 68476-30-2 Primary Name: Fuel oil No. 2; 68476-31-3 Primary Name: Fuel oil, No. 4; and 8008-20-6 Primary Name: Kerosene. As a result, an injection well permit would be required before performing hydraulic fracture stimulation using diesel fuel as defined by EPA on any well in Texas. Hydraulic fracture stimulation using diesel fuel as defined by EPA on a well in Texas without an injection well permit could result in enforcement action.

Producing Well. Statewide Rule 16 states that the operator of a well shall file with the Commission the appropriate completion report within ninety (90) days after completion of the well or within one hundred and fifty (150) days after the date on which the drilling operation is completed, whichever is earlier. Completion of the well in a field authorized by this permit voids the permit for all other fields included in the permit unless the operator indicates on the initial completion report that the well is to be a dual or multiple completion and promptly submits an application for multiple completion. All zones are required to be completed before the expiration date on the existing permit. Statewide Rule 40(d) requires that upon successful completion of a well in the same reservoir as any other well previously assigned the same acreage, proration plats and P-15s or P-16s (if required) or a lease plat and P-16 must be submitted with no double assignment of acreage unless authorized by rule.

Dry or Noncommercial Hole. Statewide Rule 14(b)(2) prohibits suspension of operations on each dry or non-commercial well without plugging unless the hole is cased and the casing is cemented in compliance with Commission rules. If properly cased, Statewide Rule 14(b)(2) requires that plugging operations must begin within a period of one (1) year after drilling or operations have ceased. Plugging operations must proceed with due diligence until completed. An extension to the one-year plugging requirement may be granted under the provisions stated in Statewide Rule 14(b)(2).

Intention to Plug. The operator must file a Form W-3A (Notice of Intention to Plug and Abandon) with the district office at least five (5) days prior to beginning plugging operations. If, however, a drilling rig is already at work on location and ready to begin plugging operations, the district director or the director's delegate may waive this requirement upon request, and verbally approve the proposed plugging procedures.

***Notification of Plugging a Dry Hole.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of four (4) hours prior to beginning plugging operations. The individual giving the notification MUST be able to advise the district office of the drilling permit number and all water protection depths for that location as stated in the Groundwater Advisory Unit letter.

DIRECT INQUIRIES TO: DRILLING PERMIT SECTION, OIL AND GAS DIVISION

PHONE
(512) 463-6751

MAIL:
PO Box 12967
Austin, Texas, 78711-2967

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER	DATE PERMIT ISSUED OR AMENDED	DISTRICT
891726	Aug 18, 2023	* 03
API NUMBER	FORM W-1 RECEIVED	COUNTY
42-245-32908	Jun 28, 2023	JEFFERSON
TYPE OF OPERATION	WELLBORE PROFILE(S)	ACRES
NEW DRILL	Vertical	642.2

OPERATOR 101256

EXXONMOBIL LOW C SOL ON STOR LLC

ATTN EDWARD E GRAHAM
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389-0000

NOTICE
This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored.
District Office Telephone No:
(713) 869-5001

LEASE NAME	WELL NUMBER
BEAD FARM CO.	1
LOCATION	TOTAL DEPTH
18 miles E direction from CLEVELAND	8700

Section, Block and/or Survey

SECTION 41 BLOCK ABSTRACT 266

SURVEY T&NO RR CO

DISTANCE TO SURVEY LINES	DISTANCE TO NEAREST LEASE LINE
1475 ft. N 1817 ft. W	ft.
DISTANCE TO LEASE LINES	DISTANCE TO NEAREST WELL ON LEASE
1475 ft. N 1817 ft. W	See FIELD(s) Below

FIELD(s) and LIMITATIONS:

* SEE FIELD DISTRICT FOR REPORTING PURPOSES *

FIELD NAME / LEASE NAME	ACRES / NEAREST LEASE	DEPTH	WELL # / NEAREST WE	DIST
WILDCAT	642.20	8,495	1	03
BEAD FARM CO.			0	

RESTRICTIONS: For exploratory test only

THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS

This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.

This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

SWR #13 Formation Data

JEFFERSON (245) County

Formation	Remarks	Geological Order	Effective Date
LAFAYETTE	disposal	1	12/17/2013
CAPROCK	disposal	2	12/17/2013
SPINDLETOP SALT DOME	disposal	3	12/17/2013
FANNETT SALT DOME	disposal	4	12/17/2013
BIG HILL SALT DOME	disposal	5	12/17/2013
PLEISTOCENE-LISSIE	disposal	6	12/17/2013
MIOCENE	disposal	7	12/17/2013
FRIO	disposal	8	12/17/2013
MARINULINA	disposal	9	12/17/2013
HETEROSTEGINA	disposal	10	12/17/2013

The above list may not be all inclusive, and may also include formations that do not intersect all wellbores. The listing order of the Formation information reflects the general stratigraphic order and relative geologic age. This is a dynamic list subject to updates and revisions. It is the operator's responsibility to make sure that at the time of spudding the well the most current list is being referenced. Refer to the RRC website at the following address for the most recent information.
http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info

CONFIDENTIAL BUSINESS INFORMATION

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
481 WINSCOTT ROAD, Ste. 200 • BENBROOK, TEXAS 76126
TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
TEXAS FIRM REGISTRATION NO. 10042504
WWW.TOPOGRAPHIC.COM

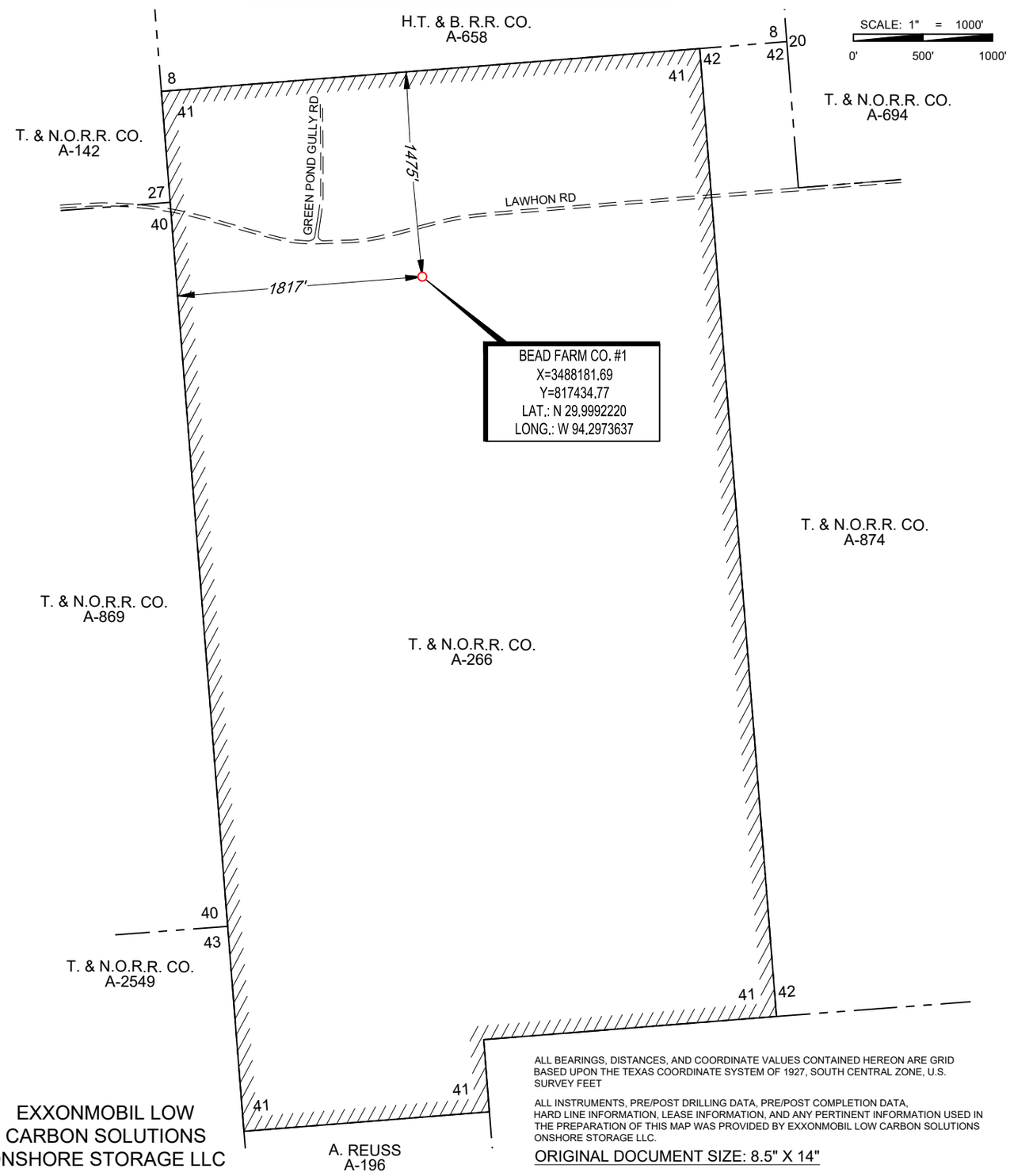
JEFFERSON COUNTY, TEXAS

SECTION 41, T. & N.O.R.R. CO. SURVEY, A-266

LEGEND

- UNIT/LEASE BOUNDARY
- SECTION LINE
- ROAD
- PROPOSED WELL

UNIT/LEASE	SURVEY
S.H.L. 1817' FWL, 1475' FNL	T. & N.O.R.R. CO., A-266



EXXONMOBIL LOW CARBON SOLUTIONS ONSHORE STORAGE LLC

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE TEXAS COORDINATE SYSTEM OF 1927, SOUTH CENTRAL ZONE, U.S. SURVEY FEET

ALL INSTRUMENTS, PRE/POST DRILLING DATA, PRE/POST COMPLETION DATA, HARD LINE INFORMATION, LEASE INFORMATION, AND ANY PERTINENT INFORMATION USED IN THE PREPARATION OF THIS MAP WAS PROVIDED BY EXXONMOBIL LOW CARBON SOLUTIONS ONSHORE STORAGE LLC.

ORIGINAL DOCUMENT SIZE: 8.5" X 14"

LEASE NAME & WELL NO.: BEAD FARM CO. #1 LEASE ACREAGE: CALLED 642.2 DATE OF SURVEY: APRIL 21, 2023

LOCATED: ±12 MILES SOUTHWEST OF BEAUMONT, TX GROUND ELEVATION: 23'

BEST ACCESSIBILITY TO LOCATION: ±0.02 MILES TO A POINT ±225 FEET NORTHWEST FROM LOCATION

DISTANCE & DIRECTION
FROM HWY JCT. OR TOWN: FROM THE INTERSECTION OF LAWHON RD AND GREEN POND GULLY RD, HEAD EAST

ON LAWHON RD 650 FEET, TURNING SOUTH, HEAD 350 FEET TO SURFACE LOCATION

STATE OF TEXAS
REGISTERED
JEFFREY N. LUEDERS
6512
PROFESSIONAL
LAND SURVEYOR

CERTIFICATION:

I, JEFFREY N. LUEDERS, A REGISTERED PROFESSIONAL LAND SURVEYOR, AND AN AUTHORIZED AGENT OF TOPOGRAPHIC LAND SURVEYORS, DO HEREBY CERTIFY THAT THE ABOVE DESCRIBED "PRE-CONSTRUCTION" PROPOSED WELL LOCATION WAS SURVEYED AND STAKED ON THE GROUND AS SHOWN HEREIN.

FILE NAME LO_TX245_BEAD_FARM_CO_1
DRH

DATE CERTIFIED: 05/16/2023 TEXAS REG. NO. 6512

CONFIDENTIAL BUSINESS INFORMATION

GROUNDWATER PROTECTION DETERMINATION

Form GW-2

Groundwater Advisory Unit

Date Issued:	19 June 2023	**GAU Number:**	368887

Attention:	EXXONMOBIL LOW C SOL ON ATTN EDWARD E GRAHAM SPRING, TX 77389	**API Number:**	
		County:	JEFFERSON
		Lease Name:	BEAD FARM CO
		Lease Number:	
Operator No.:	101256	**Well Number:**	1
		Total Vertical	8500
		Latitude:	29.999222
		Longitude:	-94.297364
		Datum:	NAD27

Purpose: New Production Well

Location: Survey-T&NO RR CO; Abstract-266; Section-41

To protect usable-quality groundwater at this location, the Groundwater Advisory Unit of the Railroad Commission of Texas recommends:

Usable-quality water occurs from the land surface to a depth of 1100 feet. Moreover, the interval from the land surface to a depth of 700 feet contains water of superior quality which must be isolated from water in underlying beds.

Also, isolation to prevent migration must be effected at a depth of 600 feet.

This recommendation is applicable for all wells drilled in this Lease.

Please send a shallow GR/SP/RES log of this well when it is available.

Note: Unless stated otherwise, this recommendation is intended to apply to all wells drilled within 200 feet of the subject well. Unless stated otherwise, this recommendation is for normal drilling, production, and plugging operations only.

This determination is based on information provided when the application was submitted on 06/15/2023. If the location information has changed, you must contact the Groundwater Advisory Unit, and submit a new application if necessary. If you have questions, please contact us at 512-463-2741 or gau@rrc.texas.gov.

Groundwater Advisory Unit, Oil and Gas Division

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

Form W-2

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

Status: Approved
Date: 05/10/2024
Tracking No.: 307853

OIL WELL POTENTIAL TEST, COMPLETION OR RECOMPLETION REPORT,

OPERATOR INFORMATION

Operator EXXONMOBIL LOW C SOL ON STOR LLC **Operator** 101256
Operator ATTN EDWARD E GRAHAM 22777 SPRINGWOODS VILLAGE PKWY SPRING, TX 77389-0000

WELL INFORMATION

API 42-245-32908 **County:** JEFFERSON
Well No.: 1 **RRC District** 03
Lease BEAD FARM CO. **Field** WILDCAT
RRC Lease 28125 **Field No.:** 00006001
Location Section: 41, Block: , Survey: T&NO RR CO, Abstract: 266

Latitude 29.999222 **Longitud** -94.297363
This well is 18 **miles in a** E
direction from CLEVELAND,
which is the nearest town in the

FILING INFORMATION

Purpose of Well Record Only
Type of New Well
Well Type: Shut-In Producer **Completion or Recompletion** 12/03/2023

Type of Permit	Date	Permit No.
Permit to Drill, Plug Back, or	08/18/2023	891726
Rule 37 Exception		
Fluid Injection		
O&G Waste Disposal		
Other:		

COMPLETION INFORMATION

Spud 10/15/2023 **Date of first production after rig** 12/03/2023
Date plug back, deepening, drilling operation 10/15/2023 **Date plug back, deepening, recompletion, drilling operation** 12/03/2023
Number of producing wells on this lease this field (reservoir) including this 0 **Distance to nearest well in lease & reservoir** 0.0
Total number of acres in 642.20 **Elevation** 23 GL
Total depth TVD 8664 **Total depth MD**
Plug back depth TVD 4087 **Plug back depth MD**
Was directional survey made other inclination (Form W- No **Rotation time within surface casing** 94.0
Is Cementing Affidavit (Form W-15) Yes
Recompletion or No **Multiple** No
Type(s) of electric or other log(s) Gamma Ray (MWD)
Electric Log Other Description:

Location of well, relative to nearest lease of lease on which this well is 1475.0 **Feet from the** North **Line and** 1817.0 **Feet from the** West **Line of the** BEAD FARM CO. **Lease.** **Off Lease :** No

FORMER FIELD (WITH RESERVOIR) & GAS ID OR OIL LEASE NO.

Field & Reservoir	Gas ID or Oil Lease	Well No.	Prior Service Type

PACKET: N/A

W2: N/A

FOR NEW DRILL OR RE-ENTRY, SURFACE CASING DEPTH DETERMINED BY:

GAU Groundwater Protection Determination		**Depth**	1100.0	**Date**	06/19/2023
SWR 13 Exception		**Depth**	2200.0		

INITIAL POTENTIAL TEST DATA FOR NEW COMPLETION OR RECOMPLETION

Date of		**Production**	
Number of hours	24	**Choke**	
Was swab used during this	No	**Oil produced prior to**	

PRODUCTION DURING TEST PERIOD:

Oil		**Gas**	
Gas - Oil	0	**Flowing Tubing**	
Water			

CALCULATED 24-HOUR RATE

Oil		**Gas**	
Oil Gravity - API - 60.:		**Casing**	
Water			

CASING RECORD

Ro	Type of Casing	Casing Size (in.)	Hole Size	Setting Depth	Multi - Stage Tool	Multi - Stage Shoe	Cement Class	Cement Amoun	Slurry Volume (cu.	Top of Cement (ft.)	TOC Determined By
2	Surface	13 3/8	17 1/2	2175			H	1470	3037.0	0	Circulated to Surface
3	Conductor	20	26	120			A	185	220.0	0	Circulated to Surface
4	Conventional Production	9 5/8	12 1/4	8656			H	1855	2893.0	353	Calculation

LINER RECORD

Ro	Liner Size	Hole Size	Liner Top	Liner Bottom	Cement Class	Cement Amoun	Slurry Volume (cu.	Top of Cement (ft.)	TOC Determined

N/A

TUBING RECORD

Ro	Size (in.)	Depth Size (ft.)	Packer Depth (ft.)/Type
			/

N/A

PRODUCING/INJECTION/DISPOSAL INTERVAL

Ro	Open hole?	From (ft.)	To (ft.)
		L	

N/A

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC.

Was hydraulic fracturing treatment No

Is well equipped with a downhole sleeve? No

If yes, actuation pressure

Production casing test pressure (PSIG)

Actual maximum pressure (PSIG) during hydraulic fracturing

fracturin

Has the hydraulic fracturing fluid disclosure been No

Ro	Type of Operation	Amount and Kind of Material Used	Depth Interval (ft.)

1	Cast Iron Bridge Plug	CAST IRON BRIDGE PLUG PLUS 3.4 CU FT CEMENT CLASS H	6290	6299
2	Cast Iron Bridge Plug	CAST IRON BRIDGE PLUG PLUS 3.4 CU FT CEMENT CLASS H	4992	5001
3	Cast Iron Bridge Plug	CAST IRON BRIDGE PLUG PLUS 3.4 CU FT CEMENT CLASS H	4087	4096

FORMATION RECORD

Formations	Encountere	Depth TVD	Depth MD	Is formation	Remarks
LAFAYETTE - DISPOSAL	No			No	
CAPROCK - DISPOSAL	No			No	
SPINDLETOP SALT DOME - DISPOSAL	No			No	
FANNETT SALT DOME - DISPOSAL	No			No	
BIG HILL SALT DOME - DISPOSAL	No			No	
PLEISTOCENE-LISSIE - DISPOSAL	No			No	
MIOCENE - DISPOSAL	Yes	3522.0	3520.0	Yes	LOGGED
FRIO - DISPOSAL	Yes	6527.0	6523.0	Yes	LOGGED
MARINULINA - DISPOSAL	No			No	
HETEROSTEGINA - DISPOSAL	Yes	6274.0	6270.0	Yes	LOGGED

Do the producing interval of this well produce H2S with a concentration in excess of 100 ppm No

Is the completion being downhole commingled No

REMARKS

THE WELL WAS PERFORATED, TESTED, AND TEMPORARILY ABANDONED. THIS IS A TEST WELL AND HAS NOT PRODUCED.

RRC REMARKS

PUBLIC COMMENTS:

[RRC Staff 2024-02-23 08:49:28.617] EXPLORATORY WELL ONLY

CASING RECORD :

NONE.

TUBING RECORD:

A STRATIGRAPHIC WELL UTILIZED INJECTIVITY TEST VIA CASING.

PRODUCING/INJECTION/DISPOSAL INTERVAL :

ACID, FRACTURE, CEMENT SQUEEZE, CAST IRON BRIDGE PLUG, RETAINER, ETC. :

PERFORATED BETWEEN X AND X - ALL ISOLATED WITH PLUGS AND CEMENT.

POTENTIAL TEST DATA:

OPERATOR'S CERTIFICATION			
Printed	Josh Calkin	**Title:**	
Telephone	(281) 702-5537	**Date**	04/22/2024

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

Form W-15
Rev. 08/2014

CEMENTING REPORT

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name:	Operator P-5 No.:
Cementer Name: Halliburton	Cementer P-5 No.: 347151

WELL INFORMATION

District No.: 3	County: Jefferson
Well No.: 1	API No.: 42 - 245 - 32908 Drilling Permit No.: 891726
Lease Name: Bead Farm Company	Lease No.:
Field Name: Wildcat	Field No.:

I. CASING CEMENTING DATA

Type of casing: ☐ Conductor ☐ Surface ☐ Intermediate ☐ Liner ☒ Production

Drilled hole size (in.): 12-1/4"	Depth of drilled hole (ft.): 8,671 MD	Est. % wash-out or hole enlargement: 3%
Size of casing in O.D. (in.): 9-5/8"	Casing weight (lbs/ft) and grade: 53.5 L-80	No. of centralizers used: 52
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☑ NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 8,658 ft	Top of liner (ft.):
		Setting depth liner (ft.):
Hrs. waiting on cement before drill-out: N/A	Calculated top of cement (ft.): 305	Cementing date: 11/8/2023

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	1855	H	45 SCR100	2893	8366
2					
3					
Total	1855			2893	8,366

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth shoe (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total					

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth tool (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date	11/24/2023	11/27/2023	11/30/2023				
Size of hole or pipe (in.)	9.625"	9.625"	9.625"				
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)	n/a	n/a	n/a				
CIBP setting depth (ft.)	6299	5001	4096				
Amount of cement on top of CIBP (ft.)	8.25	8.25	8.25				
Sacks of cement used							
Slurry volume pumped (cu. ft.)	3.4	3.4	3.4				
Calculated top of plug (ft.)	6290.75	4992.75	4087.75				
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)	17	17	17				
Class/type of cement	H	H	H				
Perforate and squeeze (YES/NO)	No	No	No				

REMARKS

Patrick Hart

EXXON, BEAD FARM CO, #1, PRODUCTION

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

JEROD HACK, SERVICE SUPERVISOR	Halliburton		
Name and title of cementer's representative	Cementing Company	Signature	
4720 Industrial	Bossier City, LA 71112	903-986-5096	11/08/2023
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

Timothy L Greene	Well Operations Supv.		
Typed or printed name of operator's representative	Title	Signature	
4763 Oak Knoll Ln.	Montgomery TX 77316	281-732-1469	11/03/23
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

A. **What to file:** An operator should file an original and one copy of the completed Form W-15 for each cementing company used on a well. The cementing of different casing strings on a well by one cementing company may be reported on one form.

The Form W-15 should be filed with the Form W-3, Plugging Record, unless the Form W-3 is signed by the cementing company representative. When reporting dry holes, operators must complete Form W-15, in addition to Form W-3, to show any casing cemented in the hole.

B. **How to file:** An oil and gas completion report and Form W-15 may be filed online using the Commission's Online System (https://webapps.rrc.state.tx.us/security/login.do) or a paper copy of the form may be mailed to the Commission in Austin (P.O. Box 12967, Austin, Texas 78711-2967).

C. **Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.

To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 (http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.

D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing and Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

G. Slurry data: If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS

1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967

CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name: XOM Low Carbon Solutions	Operator P-5 No.: 101256
Cementer Name: Halliburton	Cementer P-5 No.: 347151

WELL INFORMATION

District No.: 3	County: Jefferson		
Well No.: 1	API No.: 42-245-32908	Drilling Permit No.: 891726	
Lease Name: Bend Farm Company	Lease No.:		
Field Name: Wildcat	Field No.:		

I. CASING CEMENTING DATA

Type of casing: ☐ Conductor ☒ Surface ☐ Intermediate ☐ Liner ☐ Production

Drilled hole size (in.): 17-1/2"	Depth of drilled hole (ft.): 2,185	Est. % wash-out or hole enlargement: [redacted]27%
Size of casing in O.D. (in.): 13-3/8"	Casing weight (lbs/ft) and grade: 54.5	No. of centralizers used: 18
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☑ YES ☐ NO If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 2,175	Top of liner (ft.): / Setting depth liner (ft.):
Hrs. waiting on cement before drill-out: 34	Calculated top of cement (ft.): 0	Cementing date: 10/18/2023

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1	1015	A	SEE REMARKS	2395	1359
2	455	H	SEE REMARKS	642	816
3					
Total	1470			3037	2175

II. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement shoe ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth shoe (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

III. CASING CEMENTING DATA

Type of casing: ☐ Surface ☐ Intermediate ☐ Production ☐ Tapered production ☐ Multi-stage cement/DV tool ☐ Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? ☐ YES ☐ NO		Setting depth tool (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu. ft.)	Height (ft.)
1					
2					
3					
Total	0			0	0

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS
SLURRY 1-ECONOCEM (TM) SLURRY 2-EXTENDACEM (TM)

CEMENTER'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that the cementing of casing and/or the placing of cement plugs in this well as shown in the report was performed by me or under my supervision, and that the cementing data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers cementing data only.

ZACHARY HOWARD-SERVICE SUPERVISOR	Halliburton		
Name and title of cementer's representative	Cementing Company	Signature	
4720 Industrial	Bossier City, LA 71112	903-986-5096	10/18/2023
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data.

James A. Reavis	Drilling Eng.	
Typed or printed name of operator's representative	Title	Signature

22777 Springwood Village Pkwy	TX 77389	701-978-8939	4/3/2024
Address	City, State, Zip Code	Tel: Area Code Number	Date: mo. day yr.

Wellness 3 Room 3A.591

Instructions for Form W-15, Cementing Report

NOTICE: The Form W-15 must be submitted as an attachment to a Form G-1 (Gas Well Back Pressure Test, Completion or Recompletion Report, and Log), Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log), Form W-3 (Plugging Record), or Form W-4 (Application for Multiple Completion), any time cement is pumped in a wellbore.

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C. **Surface casing:** An operator must set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the Groundwater Advisory Unit in Austin. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. Before drilling a well, an operator must obtain a letter from the Groundwater Advisory Unit stating the protection depth. Surface casing should not be set deeper than 200 feet below the specified depth without prior approval from the Commission.

To plug and abandon a well, operators must use only cementers approved by the Commission's Director of Field Operations in accordance with SWR 14 (http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=16&pt=1&ch=3&rl=14). Cementing companies, service companies, or operators can qualify as approved cementers by demonstrating that they are able to mix and pump cement in compliance with Commission rules and regulations.

D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in II. Casing Cementing Data section by selecting the type of casing and Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

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G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
1701 N. Congress
P.O. Box 12967
Austin, Texas 78701-2967
CEMENTING REPORT

Form W-15
Rev. 08/2014

Cementer: Fill in shaded areas.
Operator: Fill in other items.

OPERATOR INFORMATION

Operator Name:	~~Byrd Oilfield Services~~ XOM Low Carb Solutions	Operator P-5 No.:	101256
Cementer Name:	Cudd Pumping Services	Cementer P-5 No.:	191917

WELL INFORMATION

District No.:	3	County:	Jefferson
Well No.:	1	API No.:	42-245-32708 Drilling Permit No.: 791726
Lease Name:	Bead Farm Company	Lease No.:	
Field Name:	Wildcat	Field No.:	

I CASING CEMENTING DATA

Type of casing: [X] Conductor [ ] Surface [ ] Intermediate [ ] Liner [ ] Production

Drilled hole size (in.): 26	Depth of drilled hole (ft.): 120	Est. % wash-out or hole enlargement:	
Size of casing in O.D. (in.): 20	Casing weight (lbs/ft) and grade: 78.6 ppf X-52	No. of centralizers used:	
Was cement circulated to ground surface (or bottom of cellar) outside casing? [X] Yes [ ] No If no for surface casing, explain in Remarks.	Setting depth shoe (ft.): 120	Top of liner (ft.):	Setting depth liner (ft.):
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.): 0	Cementing date: 9/11/2023	

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu.ft.)	Height (ft.)
1	185	A	1% SA001	220.0	145
2					
3					
Total	185			220.0	145

II CASING CEMENTING DATA

Type of casing: [ ] Surface [ ] Intermediate [ ] Production [ ] Tapered production [ ] Multi-stage cement shoe [ ] Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? [ ] Yes [ ] No	Setting depth tool (ft.):	
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu.ft.)	Height (ft.)
1					
2					
3					
Total					

III CASING CEMENTING DATA

Type of casing: [ ] Surface [ ] Intermediate [ ] Production [ ] Tapered production [ ] Multi-stage cement/DV tool [ ] Multiple parallel strings

Drilled hole size (in.):	Depth of drilled hole (ft.):	Est. % wash-out or hole enlargement:
Size of casing in O.D. (in.):	Casing weight (lbs/ft) and grade:	No. of centralizers used:
Tapered string drilled hole size (in.) Upper: Lower:	Tapered string depth of drilled hole (ft.) Upper: Lower:	
Tapered string size of casing in O.D. (in.) Upper: Lower:	Tapered string casing weight(lbs/ft) and grade Upper: Lower:	Tapered string no. of centralizers used Upper: Lower:
Was cement circulated to ground surface (or bottom of cellar) outside casing? [ ] Yes [ ] No	Setting depth tool (ft.):	
Hrs. waiting on cement before drill-out:	Calculated top of cement (ft.):	Cementing date:

SLURRY

Slurry No.	No. of Sacks	Class	Additives	Volume (cu.ft.)	Height (ft.)
1					
2					
3					
Total					

CONFIDENTIAL BUSINESS INFORMATION

CEMENTING TO SQUEEZE, PLUG BACK OR PLUG AND ABANDON							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Cementing Date							
Size of hole or pipe (in.)							
Depth to bottom of tubing or drill pipe (ft.)							
Cement retainer setting depth (ft.)							
CIBP setting depth (ft.)							
Amount of cement on top of CIBP (ft.)							
Sacks of cement used							
Slurry volume pumped (cu. ft.)							
Calculated top of plug (ft.)							
Measured top of plug, if tagged (ft.)							
Slurry weight (lbs/gal)							
Class/type of cement							
Perforate and squeeze (YES/NO)							

REMARKS

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Artemio Rivera Service Supervisor	Cudd Pumping Services	
Name and title of cementer's representative	Cementing Company	Signature

1434 CR 422	Pleasanton	TX	78064	1830-254-4200	September 11, 2023
Address	City,	State,	Zip Code	Tel: Area Code Number	Date: mo. day yr.

OPERATOR'S CERTIFICATE: I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this certification, that I have knowledge of the well data and information presented in this report, and that data and facts presented on both sides of this form are true, correct, and complete, to the best of my knowledge. This certification covers all well data

James Harvey	Operations Supt.	
Type or printed name of operator's representative	Title	Signature

				512 749 8222	9/11/23
Address	City,	State,	Zip Code	Tel: Area Code Number	Date: mo. day yr.

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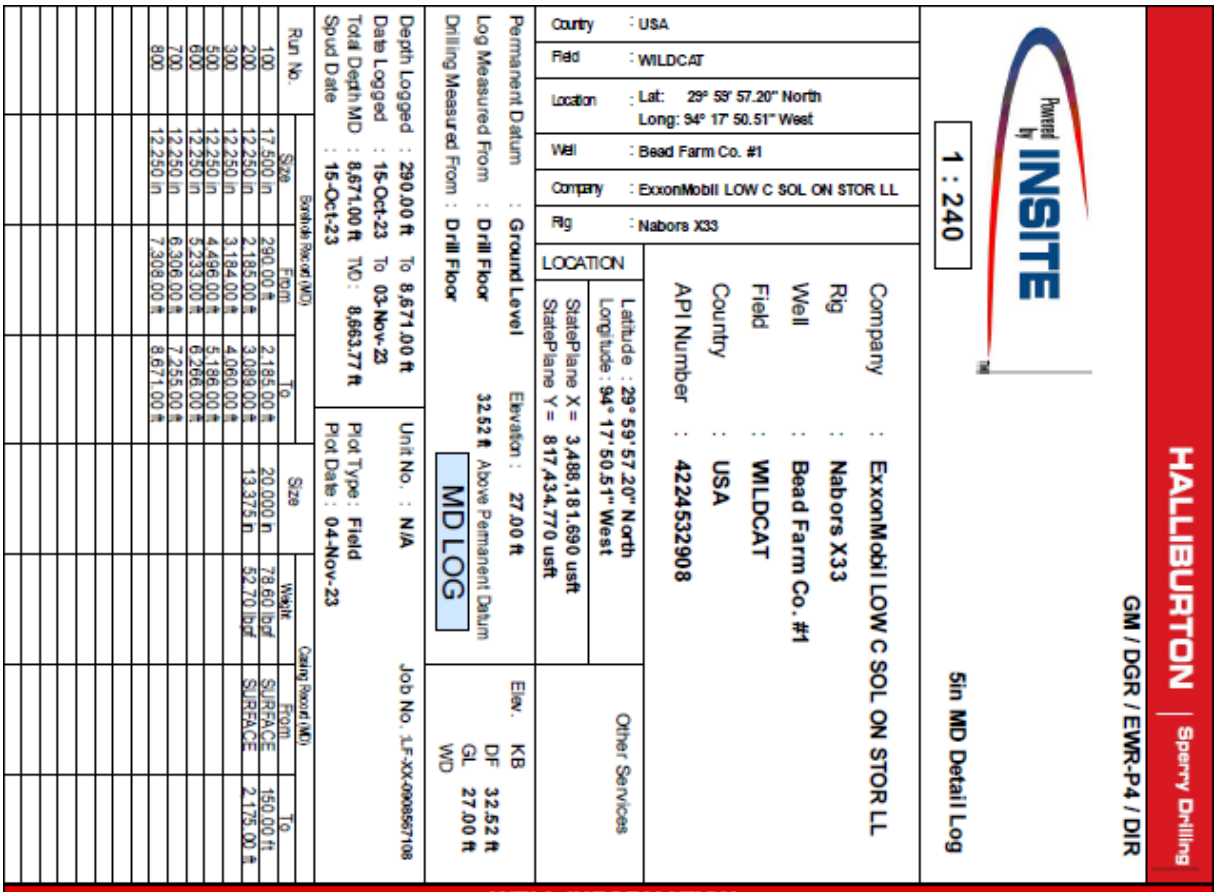
D. **Estimated % wash-out:** If the estimated % wash-out is less than 20% (or 30% along the Gulf Coast), provide supporting documentation such as a caliper log to show how the estimated % wash-out was obtained.

E. **Multi-stage cement:** An operator must report the multi-stage cement shoe in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement shoe. The operator must report the multi-stage cement tool in III. Casing Cementing Data section by selecting the type of casing and Multi-stage cement/DV tool.

F. **Multiple parallel strings:** An operator should file the Form W-15 as an attachment to the Form W-4, Application for Multiple Completion. An operator may be required to submit multiple Form W-15s to show all data for multiple parallel strings.

G. **Slurry data:** If cement job exceeds three slurries, continue the list of slurries in the Slurry table in the subsequent Casing Cementing Data box.

CONFIDENTIAL BUSINESS INFORMATION



WELL INFORMATION

MWD Run Number	100	200	300	400	500
Date run completed	16-Oct-23	20-Oct-23	23-Oct-23	25-Oct-23	27-Oct-23
Rig Bit Number	100	200	300	400	500
Bit Size (in)	17.500	12.250	12.250	12.250	12.250
Tool Nominal OD (in)	8.000	8.000	8.000	8.000	8.000
Log Start Depth (MD, ft)	152.00	2,185.00	3,200.00	4,122.00	4,496.00
Log End Depth (MD, ft)	2,185.00	3,089.00	4,060.00	4,460.00	5,186.00
Drill or Wipe	Drill	Drill	Drill	Drill	Drill
Drill/Wipe Start Date and Time	15-Oct-23 09:45	20-Oct-23 06:40	23-Oct-23 02:15	24-Oct-23 22:21	26-Oct-23 16:09
Drill/Wipe End Date and Time	16-Oct-23 03:55	20-Oct-23 15:15	23-Oct-23 12:24	25-Oct-23 02:14	27-Oct-23 05:09
Min Inc (deg) @ Depth (MD, ft)	0.19 @385.00	2.41 @2,263.00	2.29 @3,868.00	1.37 @4,344.00	1.66 @4,527.00
Max Inc (deg) @ Depth (MD, ft)	2.24 @2,113.00	3.81 @3,015.00	4.09 @3,112.00	2.65 @4,056.00	2.54 @5,110.00
Bit TFA(in2) / Bit Type	0.91 / PDC	0.91 / PDC	0.91 / PDC	0.91 / PDC	0.91 / PDC
Flow Rate (gpm)	700.00	600.00	605.00	605.00	600.00
Max AV (fpm) / CV (fpm) @ MWD	80.0 / 85.6	175.0 / 172.0	175.0 / 180.0	195.3 / 0.0	171.3 / 180.0
Fluid Type	Native/Spud Mud	Mineral Oil Bas	Mineral Oil Bas	Mineral Oil Bas	Mineral Oil Bas
Density (ppg) / Viscosity (spqt)	9.00 / 33.00	9.10 / 48.00	10.00 / 72.00	10.50 / 67.00	10.50 / 59.00
Filtrate CL (ppm)	1,100.00	32,500.00	75,000.00	74,000.00	69,000.00
pH / API Filtrate (mptm)	8.00 / 14	N/A / 0	N/A / 0	N/A / 0	N/A / 0
PV (cP) / YP (lhf2)	10 / 5.00	9 / 7.00	23 / 17.00	23 / 18.00	21 / 24.00
% Solids / % Sand	4.9 / .01	7.2 / 0	9.3 / 0	10.5 / 0	11.8 / 0
% Oil / Oil:Water Ratio	0 / 0:100	74.73 / 75:25	53 / 60:40	52 / 60:40	54 / 64:36
Rm @ Measured Temp (degF)	0.100 @70.00	N/A@N/A	N/A@N/A	N/A@N/A	N/A@N/A
Rmf @ Measured Temp (degF)	0.10 @70.00	N/A@N/A	N/A@N/A	N/A@N/A	N/A@N/A
Rmc @ Measured Temp (degF)	0.100 @70.00	N/A@N/A	N/A@N/A	N/A@N/A	N/A@N/A
Max Tool Temp (degF) / Source	102.20 / TM	130.82 / HDM	137.88 / HDM	141.41 / HDM	152.00 / HDM
Rm @ Max Tool Temp (degF)	0.0705 @ 102.20	N/A @ 130.82	N/A @ 137.88	N/A @ 141.41	N/A @ 152.00
Lead MWD Engineer	Alex Killgore	Alex Killgore	Alex Killgore	Alex Killgore	Jason Anderson
Customer Representative	N/A	N/A	N/A	N/A	N/A

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
Oil and Gas Division
Tracking No.: 307853

ELECTRIC LOG STATUS REPORT

This facsimile L-1 was generated electronically from data submitted to the RRC.

FORM L-1

Instructions

When to File Form L-1:
- with Forms G-1, W-2, and GT-1 for new and deepened gas, oil, and geothermal wells
- with Form W-3 for plugged dry holes
- when sending in a log which was held under a request for confidentiality and the period for confidentiality has not yet expired.

When is Form L-1 NOT required:
- with Forms W-2, G-1, and GT-1 filed for injection wells, disposal wells, water supply wells, service wells, re-test wells, re-classifications, and plugbacks of oil, gas or geothermal wells
- with Form W-3 for plugging of other than a dry hole

Where to File Form L-1:
- with the appropriate Commission district office

Filling out Form L-1:
- Section I and the signature section must be filled out for all wells
- complete only the appropriate part of Section II

Type of log required:
- any wireline survey run for the purpose of obtaining lithology, porosity, or resistivity information
- no more than one such log is required but it must be of the subject well
- if such log is NOT run on the subject well, do NOT substitute any other type of log; just select Section II, Part A below

SECTION I. IDENTIFICATION

Operator Name: EXXONMOBIL LOW C SOL ON STOR LLC	District No. 03	Completion Date: 12/03/2023
Field Name WILDCAT	Drilling Permit No. 891726	
Lease Name BEAD FARM CO.	Lease/ID No. 28125	Well No. 1
County JEFFERSON	API No. 42- 245-32908	

SECTION II. LOG STATUS (Complete either A or B)

☐ A. BASIC ELECTRIC LOG NOT RUN

☒ B. BASIC ELECTRIC LOG RUN. (Select one)

☒ 1. Confidentiality is requested and a copy of the header for each log that has been run on the well is attached.

☐ 2. Confidentiality already granted on basic electric log covering this interval (applicable to deepened wells only).

☐ 3. Basic electric log covering this interval already on file with Commission (applicable to deepened wells only).

☐ 4. Log attached to (select one):

☐ (a) Form L-1 (this form). If the company/lease name on log is different from that shown in Section I, please enter name on log here: _____

Check here if attached log is being submitted after being held confidential. ☐

☐ (b) Form P-7, Application for Discovery Allowable and New Field Designation.

☐ (c) Form W-4, Application for Multiple Completion:

Lease or ID No(s). _____

Well No(s). _____

Josh Calkin Signature	Title
EXXONMOBIL LOW C SOL ON STOR LLC Name (print)	(281) 702-5537 Phone 02/08/2024 Date

-FOR RAILROAD COMMISSION USE ONLY-

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON

4607 HWY 90 EAST • BROUSSARD, LA 70518

PHONE 337 837 3061 • FAX 337 837 4400

Jefferson County,
State of Texas

I, **Coy Lorraine,** certify that: I am employed by Halliburton Energy Service and that I did on the day(s) of **October 15, 2023 to November 3, 2023** conduct or supervise the taking of Directional Surveys as follow:

- **210' to a depth of 8598' MWD surveys performed by Sperry Drilling MWD**
- **Final survey is projected to a total depth of 8671'**

I certify that the data is true, correct, complete and within the limitations of the tool as set forth by Halliburton Energy Services. I further certify that I am authorized and qualified to make this report, that this survey was conducted at the request of **EXXONMOBIL LOW C SOL ON STOR LLC** for the **BEAD FARM CO. 1** in **Jefferson County, TX,** and that I have reviewed this report and find that it conforms to the principles and procedures set forth by Halliburton Energy Service for quality well surveying.

Coy Lorraine

Coy Lorraine, M/LWD Service Quality

CONFIDENTIAL BUSINESS INFORMATION

HALLIBURTON
4607 HWY 90 EAST • BROUSSARD, LA 70518
PHONE 337 837 3061 • FAX 337 837 4400

November 9, 2023

Railroad Commission of Texas
Oil and Gas Division
P.O. Box 12967
Capital Station
Austin, TX 78711

Re: EXXONMOBIL LOW C SOL ON STOR LLC
R.R.C. Operator No. 101256
BEAD FARM CO. 1
Permit No. 891726
Jefferson County, TX
API # 42-245-32908

Attention: Ms. Pam Johns

Enclosed, please find one copy of the survey performed on the above referenced well by Halliburton Energy Services, Inc. Operator #347-151.

Other information required by your office is as follows:

Name & Title of Surveyor	-	Coy Lorraine, M/LWD Service Quality
Drainhole Number	-	Original
Surveyed Depths	-	210' – 8598' MWD Surveys performed by Sperry Drilling
Dates Performed	-	October 15, 2023 to November 3, 2023
Type of Survey	-	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the listed e-mail address.

Respectfully,

Kristen
Log Analyst
Kristen.Killen@Halliburton.com
Halliburton / Sperry Drilling

Enclosures
RE: LA-MM 908567108

CONFIDENTIAL BUSINESS INFORMATION

ExxonMobil

Jefferson County, Tx
Rose Prospect CCS
Bead Farm Co. #1

001 ST00BP00

Design: 001 ST00BP00

Sperry Drilling Services

Geodetic Report

15 November, 2023

Well Coordinates: 817,434.77 N, 3,488,181.69 E (29° 59' 57.20" N, 094° 17' 50.51" W)
Ground Level: 27.00 usft

Local Coordinate Origin:	Centered on Well Bead Farm Co. #1
Viewing Datum:	(32.52') Nabors X-33 @ 59.52usft (Rig on Loc)
TVDs to System:	N
North Reference:	Grid
Unit System:	API US Survey Feet

Version: 5000.17 Build: 02

HALLIBURTON

Design Report for Bead Farm Co. #1 - 001 ST00BP00

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude (usft)	Geographic Coordinates Longitude (usft)	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	29° 59' 57.199 N	94° 17' 50.509 W	817,434.77	3,488,181.69
210.00	0.37	164.70	210.00	-0.65	0.18	29° 59' 57.193 N	94° 17' 50.508 W	817,434.12	3,488,181.87
303.00	0.22	187.45	303.00	-1.12	0.24	29° 59' 57.188 N	94° 17' 50.507 W	817,433.65	3,488,181.92
385.00	0.19	234.94	385.00	-1.35	0.10	29° 59' 57.186 N	94° 17' 50.509 W	817,433.42	3,488,181.79
576.00	0.29	216.67	576.00	-1.92	-0.44	29° 59' 57.180 N	94° 17' 50.515 W	817,432.85	3,488,181.24
757.00	0.56	181.75	756.99	-3.18	-0.75	29° 59' 57.168 N	94° 17' 50.519 W	817,431.59	3,488,180.94
854.00	0.34	176.13	853.99	-3.94	-0.74	29° 59' 57.161 N	94° 17' 50.520 W	817,430.83	3,488,180.95
945.00	0.82	187.51	944.98	-4.85	-0.81	29° 59' 57.152 N	94° 17' 50.521 W	817,429.92	3,488,180.88
1,133.00	0.74	222.83	1,132.97	-7.08	-1.81	29° 59' 57.130 N	94° 17' 50.533 W	817,427.69	3,488,179.88
1,326.00	0.83	215.12	1,325.95	-9.13	-3.46	29° 59' 57.110 N	94° 17' 50.553 W	817,425.64	3,488,178.23
1,512.00	0.59	246.91	1,511.93	-10.61	-5.12	29° 59' 57.096 N	94° 17' 50.572 W	817,424.16	3,488,176.57
1,705.00	0.67	215.11	1,704.92	-11.92	-6.68	29° 59' 57.084 N	94° 17' 50.591 W	817,422.85	3,488,175.01
1,888.00	1.47	212.95	1,887.89	-14.77	-8.57	29° 59' 57.057 N	94° 17' 50.613 W	817,420.00	3,488,173.12
2,083.00	1.95	211.16	2,082.80	-19.71	-11.65	29° 59' 57.009 N	94° 17' 50.651 W	817,415.06	3,488,170.04
2,113.00	2.24	206.92	2,112.78	-20.67	-12.18	29° 59' 57.000 N	94° 17' 50.657 W	817,414.10	3,488,169.51
2,263.00	2.41	205.91	2,262.66	-26.12	-14.88	29° 59' 56.947 N	94° 17' 50.690 W	817,408.65	3,488,166.81
2,360.00	2.56	206.53	2,359.57	-29.89	-16.74	29° 59' 56.910 N	94° 17' 50.713 W	817,404.88	3,488,164.95
2,457.00	2.68	206.96	2,456.47	-33.85	-18.74	29° 59' 56.872 N	94° 17' 50.738 W	817,400.92	3,488,162.95
2,553.00	2.83	208.18	2,552.36	-37.94	-20.87	29° 59' 56.832 N	94° 17' 50.764 W	817,396.83	3,488,160.81
2,649.00	3.06	209.03	2,648.23	-42.27	-23.24	29° 59' 56.790 N	94° 17' 50.793 W	817,392.50	3,488,158.45
2,828.00	3.68	211.90	2,826.92	-51.32	-28.59	29° 59' 56.703 N	94° 17' 50.858 W	817,383.45	3,488,153.10
2,922.00	3.78	213.09	2,920.72	-56.48	-31.88	29° 59' 56.653 N	94° 17' 50.897 W	817,378.29	3,488,149.81
3,015.00	3.81	212.63	3,013.51	-61.65	-35.22	29° 59' 56.603 N	94° 17' 50.938 W	817,373.12	3,488,146.47
3,112.00	4.09	213.44	3,110.28	-67.25	-38.86	29° 59' 56.549 N	94° 17' 50.982 W	817,367.52	3,488,142.83
3,206.00	3.90	216.01	3,204.06	-72.63	-42.59	29° 59' 56.498 N	94° 17' 51.026 W	817,362.14	3,488,139.10
3,302.00	3.43	220.91	3,299.86	-77.44	-46.39	29° 59' 56.452 N	94° 17' 51.072 W	817,357.33	3,488,135.30
3,396.00	3.08	227.55	3,393.71	-81.27	-50.09	29° 59' 56.415 N	94° 17' 51.116 W	817,353.50	3,488,131.60
3,493.00	2.63	238.21	3,490.59	-84.21	-53.91	29° 59' 56.388 N	94° 17' 51.160 W	817,350.56	3,488,127.78
3,681.00	3.03	236.09	3,678.36	-89.25	-61.70	29° 59' 56.341 N	94° 17' 51.251 W	817,345.52	3,488,119.99
3,773.00	3.07	236.39	3,770.23	-91.97	-65.77	29° 59' 56.316 N	94° 17' 51.299 W	817,342.80	3,488,115.92
3,868.00	2.29	245.55	3,865.12	-94.16	-69.61	29° 59' 56.295 N	94° 17' 51.343 W	817,340.61	3,488,112.08
3,961.00	2.48	247.19	3,958.04	-95.71	-73.16	29° 59' 56.282 N	94° 17' 51.384 W	817,339.06	3,488,108.53
3,987.00	2.58	248.05	3,984.02	-96.15	-74.22	29° 59' 56.278 N	94° 17' 51.397 W	817,338.62	3,488,107.47
4,056.00	2.65	247.41	4,052.95	-97.34	-77.13	29° 59' 56.267 N	94° 17' 51.430 W	817,337.43	3,488,104.56
4,152.00	2.07	251.51	4,148.86	-98.75	-80.83	29° 59' 56.255 N	94° 17' 51.473 W	817,336.02	3,488,100.86
4,246.00	1.39	261.83	4,242.82	-99.45	-83.56	29° 59' 56.249 N	94° 17' 51.504 W	817,335.32	3,488,098.12
4,344.00	1.37	260.60	4,340.79	-99.81	-85.90	29° 59' 56.246 N	94° 17' 51.531 W	817,334.96	3,488,095.79
4,386.00	1.49	262.00	4,382.78	-99.96	-86.93	29° 59' 56.245 N	94° 17' 51.543 W	817,334.81	3,488,094.76
4,434.00	1.58	261.67	4,430.76	-100.15	-88.21	29° 59' 56.244 N	94° 17' 51.557 W	817,334.62	3,488,093.48
4,527.00	1.66	264.88	4,523.73	-100.45	-90.82	29° 59' 56.242 N	94° 17' 51.587 W	817,334.32	3,488,090.87
4,624.00	1.76	264.59	4,620.68	-100.72	-93.70	29° 59' 56.240 N	94° 17' 51.620 W	817,334.05	3,488,087.99
4,718.00	1.77	268.05	4,714.64	-100.90	-96.59	29° 59' 56.240 N	94° 17' 51.653 W	817,333.87	3,488,085.10

Design Report for Bead Farm Co. #1 - 001 ST00BP00

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude	Geographic Coordinates Longitude	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
4,813.00	1.97	270.81	4,809.59	-100.93	-99.69	29° 59' 56.240 N	94° 17' 51.688 W	817,333.84	3,488,082.00
4,908.00	2.18	273.99	4,904.52	-100.78	-103.12	29° 59' 56.243 N	94° 17' 51.727 W	817,333.99	3,488,078.57
5,001.00	2.30	275.15	4,997.45	-100.49	-106.74	29° 59' 56.248 N	94° 17' 51.768 W	817,334.28	3,488,074.94
5,097.00	2.45	274.72	5,093.37	-100.15	-110.71	29° 59' 56.253 N	94° 17' 51.813 W	817,334.62	3,488,070.98
5,110.00	2.54	275.19	5,106.36	-100.10	-111.27	29° 59' 56.253 N	94° 17' 51.820 W	817,334.67	3,488,070.42
5,283.00	2.66	275.59	5,279.18	-99.36	-119.08	29° 59' 56.264 N	94° 17' 51.908 W	817,335.41	3,488,062.60
5,378.00	2.82	274.34	5,374.07	-98.97	-123.61	29° 59' 56.269 N	94° 17' 51.959 W	817,335.80	3,488,058.08
5,472.00	1.88	278.50	5,467.99	-98.57	-127.44	29° 59' 56.275 N	94° 17' 52.003 W	817,336.20	3,488,054.25
5,569.00	1.35	294.54	5,564.95	-97.86	-130.05	29° 59' 56.283 N	94° 17' 52.032 W	817,336.91	3,488,051.64
5,661.00	1.18	310.30	5,656.93	-96.80	-131.76	29° 59' 56.294 N	94° 17' 52.051 W	817,337.97	3,488,049.93
5,755.00	1.30	312.59	5,750.91	-95.45	-133.28	29° 59' 56.308 N	94° 17' 52.068 W	817,339.32	3,488,048.40
5,948.00	1.22	7.87	5,943.87	-91.93	-134.61	29° 59' 56.343 N	94° 17' 52.081 W	817,342.84	3,488,047.07
6,040.00	1.46	19.21	6,035.84	-89.85	-134.09	29° 59' 56.364 N	94° 17' 52.074 W	817,344.92	3,488,047.59
6,135.00	1.92	28.48	6,130.80	-87.31	-132.94	29° 59' 56.388 N	94° 17' 52.060 W	817,347.46	3,488,048.75
6,150.66	1.94	29.14	6,146.45	-86.85	-132.68	29° 59' 56.393 N	94° 17' 52.057 W	817,347.92	3,488,049.01
6,228.00	2.06	32.16	6,223.75	-84.53	-131.30	29° 59' 56.415 N	94° 17' 52.040 W	817,350.24	3,488,050.38
6,325.00	2.10	31.84	6,320.68	-81.54	-129.44	29° 59' 56.444 N	94° 17' 52.017 W	817,353.23	3,488,052.25
6,422.00	2.19	29.54	6,417.62	-78.42	-127.59	29° 59' 56.474 N	94° 17' 51.995 W	817,356.35	3,488,054.10
6,513.00	2.21	30.12	6,508.55	-75.39	-125.85	29° 59' 56.504 N	94° 17' 51.974 W	817,359.38	3,488,055.84
6,515.93	2.21	30.12	6,511.48	-75.29	-125.79	29° 59' 56.504 N	94° 17' 51.973 W	817,359.48	3,488,055.89
6,607.00	2.23	29.44	6,602.48	-72.23	-124.04	29° 59' 56.534 N	94° 17' 51.952 W	817,362.54	3,488,057.65
6,701.00	2.29	28.78	6,696.40	-68.99	-122.24	29° 59' 56.565 N	94° 17' 51.930 W	817,365.78	3,488,059.45
6,796.00	2.36	28.05	6,791.33	-65.60	-120.41	29° 59' 56.598 N	94° 17' 51.908 W	817,369.17	3,488,061.28
6,892.00	2.46	31.47	6,887.24	-62.10	-118.40	29° 59' 56.632 N	94° 17' 51.883 W	817,372.67	3,488,063.29
6,985.00	2.60	29.02	6,980.15	-58.55	-116.33	29° 59' 56.666 N	94° 17' 51.858 W	817,376.22	3,488,065.35
7,079.00	2.71	27.06	7,074.05	-54.71	-114.29	29° 59' 56.704 N	94° 17' 51.833 W	817,380.06	3,488,067.40
7,141.00	2.79	26.24	7,135.98	-52.05	-112.96	29° 59' 56.729 N	94° 17' 51.817 W	817,382.72	3,488,068.73
7,266.00	2.85	26.77	7,260.83	-46.55	-110.21	29° 59' 56.783 N	94° 17' 51.783 W	817,388.22	3,488,071.48
7,363.00	2.99	25.96	7,357.70	-42.12	-108.02	29° 59' 56.826 N	94° 17' 51.756 W	817,392.65	3,488,073.67
7,459.00	3.01	26.60	7,453.57	-37.61	-105.79	29° 59' 56.869 N	94° 17' 51.729 W	817,397.16	3,488,075.90
7,555.00	2.97	25.12	7,549.44	-33.11	-103.61	29° 59' 56.913 N	94° 17' 51.702 W	817,401.66	3,488,078.08
7,651.00	3.04	23.94	7,645.31	-28.53	-101.52	29° 59' 56.957 N	94° 17' 51.676 W	817,406.24	3,488,080.17
7,748.00	3.11	23.38	7,742.17	-23.76	-99.43	29° 59' 57.004 N	94° 17' 51.650 W	817,411.01	3,488,082.26
7,837.00	3.11	21.92	7,831.04	-19.31	-97.57	29° 59' 57.047 N	94° 17' 51.627 W	817,415.46	3,488,084.12
7,931.00	3.13	22.72	7,924.90	-14.58	-95.63	29° 59' 57.093 N	94° 17' 51.603 W	817,420.19	3,488,086.06
8,026.00	3.28	22.62	8,019.75	-9.68	-93.58	29° 59' 57.141 N	94° 17' 51.577 W	817,425.09	3,488,088.11
8,123.00	3.29	23.34	8,116.59	-4.56	-91.41	29° 59' 57.190 N	94° 17' 51.550 W	817,430.21	3,488,090.28
8,215.00	3.21	22.93	8,208.44	0.24	-89.36	29° 59' 57.237 N	94° 17' 51.525 W	817,435.01	3,488,092.33
8,309.00	3.25	23.97	8,302.29	5.10	-87.26	29° 59' 57.284 N	94° 17' 51.499 W	817,439.87	3,488,094.43
8,404.00	3.23	26.22	8,397.14	9.96	-84.98	29° 59' 57.332 N	94° 17' 51.470 W	817,444.73	3,488,096.71
8,498.00	3.05	26.32	8,491.00	14.58	-82.70	29° 59' 57.376 N	94° 17' 51.442 W	817,449.35	3,488,098.99
8,528.63	3.02	25.60	8,521.59	16.03	-81.99	29° 59' 57.390 N	94° 17' 51.434 W	817,450.80	3,488,099.70

Design Report for Bead Farm Co. #1 - 001 ST00BP00

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Geographic Coordinates Latitude (usft)	Geographic Coordinates Longitude (usft)	UTM Coordinates Northing (usft)	UTM Coordinates Easting (usft)
8,598.00	2.96	23.92	8,590.86	19.32	-80.47	29° 59' 57.422 N	94° 17' 51.415 W	817,454.09	3,488,101.22
8,671.00	2.96	23.92	8,663.76	22.77	-78.94	29° 59' 57.456 N	94° 17' 51.396 W	817,457.54	3,488,102.74

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	0.00	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
210.00	2,113.00	01 HAL MWD (MagVarMS) 17 1/2" Hole 210' - 2113'	3_MWD+HRGM+MS
2,263.00	8,598.00	02 HAL MWD (MagVarMS) 12 1/4" Hole 2263' - 8598'	3_MWD+HRGM+MS

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
100.00	100.00	20" Conductor Casing	20	20

Design Targets

Shape	Target Name	TVD ()	Northing ()	Easting ()	+N/-S	+E/-W	Created	Updated

CONFIDENTIAL BUSINESS INFORMATION

Design Report for Bead Farm Co. #1 - 001 ST00BP00

Directional Difficulty Index

Average Dogleg over Survey:	0.24 °/100usft	Maximum Dogleg over Survey:	1.10 °/100usft at 2,113.00 usft
Net Tortousity applicable to Plans:	0.24 °/100usft	Directional Difficulty Index:	3.816

Audit Info

HALLIBURTON

ExxonMobil

Jefferson County, Tx

North Reference Sheet for Rose Prospect CCS - Bead Farm Co. #1 - 001 ST00BP00

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to (32.52') Nabors X-33 @ 59.52usft (Rig on Loc). Northing and Easting are relative to Bead Farm Co. #1

Coordinate System is US State Plane 1927 (Exact solution), Texas South Central 4204 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is 99° 0' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:30° 17' 0.000 N°

False Easting: 2,000,000.00usft, False Northing: 0.00usft, Scale Reduction: 0.99993028

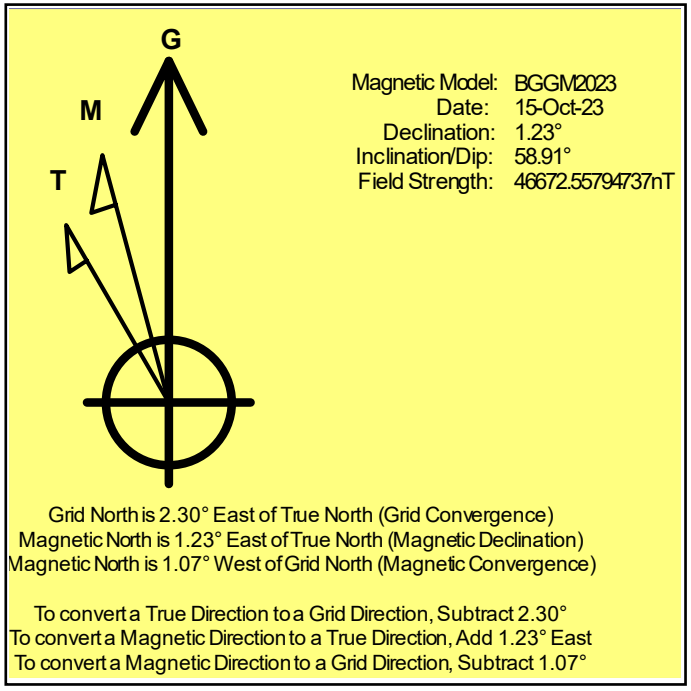
Grid Coordinates of Well: 817,434.77 usft N, 3,488,181.69 usft E

Geographical Coordinates of Well: 29° 59' 57.20" N, 094° 17' 50.51" W

Grid Convergence at Surface is: 2.30°

Based upon Minimum Curvature type calculations, at a Measured Depth of 8,671.00usft

the Bottom Hole Displacement is 82.16usft in the Direction of 286.09° (Grid).
Magnetic Convergence at surface is: 1.07° (15 October 2023, , BGGM2023)



CONFIDENTIAL BUSINESS INFORMATION

Railroad Commission of Texas

PERMIT TO DRILL, RE-COMPLETE, OR RE-ENTER ON REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

CONDITIONS AND INSTRUCTIONS

Permit Invalidation. It is the operator's responsibility to make sure that the permitted location complies with Commission density and spacing rules in effect on the spud date. The permit becomes invalid automatically if, because of a field rule change or the drilling of another well, the stated location is not in compliance with Commission field rules on the spud date. If this occurs, application for an exception to Statewide Rules 37 and 38 must be made and a special permit granted prior to spudding. Failure to do so may result in an allowable not being assigned and/or enforcement procedures being initiated.

Notice Requirements. Per H.B 630, signed May 8, 2007, the operator is required to provide notice to the surface owner no later than the 15th business day after the Commission issues a permit to drill. Please refer to subchapter Q Sec. 91.751-91.755 of the Texas Natural Resources Code for applicability.

Permit expiration. This permit expires two (2) years from the date of issuance shown on the original permit. The permit period will not be extended.

Drilling Permit Number. The drilling permit number shown on the permit MUST be given as a reference with any notification to the district (see below), correspondence, or application concerning this permit.

Rule 37 Exception Permits. This Statewide Rule 37 exception permit is granted under either provision Rule 37 (h)(2)(A) or 37(h)(2)(B). Be advised that a permit granted under Rule 37(h)(2)(A), notice of application, is subject to the General Rules of Practice and Procedures and if a protest is received under Section 1.3, "Filing of Documents," and/or Section 1.4, "Computation of Time," the permit may be deemed invalid.

Before Drilling

Fresh Water Sand Protection. The operator must set and cement sufficient surface casing to protect all usable-quality water, as defined by the Railroad Commission of Texas (RRC) Groundwater Advisory Unit (GWAU). Before drilling a well, the operator must obtain a letter from the Railroad Commission of Texas stating the depth to which water needs protection, Write: Railroad Commission of Texas, Groundwater Advisory Unit (GWAU), P.O. Box 12967, Austin, TX 78711-3087. File a copy of the letter with the appropriate district office.

Accessing the Well Site. If an OPERATOR, well equipment TRANSPORTER or WELL service provider must access the well site from a roadway on the state highway system (Interstate, U.S. Highway, State Highway, Farm-to-Market Road, Ranch-to-Market Road, etc.), an access permit is required from TxDOT. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

Water Transport to Well Site. If an operator intends to transport water to the well site through a temporary pipeline laid above ground on the state's right-of-way, an additional TxDOT permit is required. Permit applications are submitted to the respective TxDOT Area Office serving the county where the well is located.

***NOTIFICATION**

The operator is **REQUIRED** to notify the district office when setting surface casing, intermediate casing, and production casing, or when plugging a dry hole. The district office **MUST** also be notified if the operator intends to re-enter a plugged well or re-complete a well into a different regulatory field. Time requirements are given below. The drilling permit number **MUST** be given with such notifications.

During Drilling

Permit at Drilling Site. A copy of the Form W-1 Drilling Permit Application, the location plat, a copy of Statewide Rule 13 alternate surface casing setting depth approval from the district office, if applicable, and this drilling permit must be kept at the permitted well site throughout drilling operations.

***Notification of Setting Casing.** The operator MUST call in notification to the appropriate district office (phone number shown the on permit) a minimum of eight (8) hours prior to the setting of surface casing, intermediate casing, AND production casing. The individual giving notification MUST be able to advise the district office of the drilling permit number.

***Notification of Re-completion/Re-entry.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of eight (8) hours prior to the initiation of drilling or re-completion operations. The individual giving notification MUST be able to advise the district office of the drilling permit number.

Completion and Plugging Reports

Hydraulic Fracture Stimulation using Diesel Fuel: Most operators in Texas do not use diesel fuel in hydraulic fracturing fluids. Section 322 of the Energy Policy Act of 2005 amended the Underground Injection Control (UIC) portion of the federal Safe Drinking Water Act (42 USC 300h(d)) to define "underground Injection" to *EXCLUDE* " ...the underground injection of fluids or propping agents (*other than diesel fuels*) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities." (italic and underlining added.) Therefore, hydraulic fracturing may be subject to regulation under the federal UIC regulations if diesel fuel is injected or used as a propping agent. EPA defined "diesel fuel" using the following five (5) Chemical Abstract Service numbers: 68334-30-5 Primary Name: Fuels, diesel; 68476-34-6 Primary Name: Fuels, diesel, No. 2; 68476-30-2 Primary Name: Fuel oil No. 2; 68476-31-3 Primary Name: Fuel oil, No. 4; and 8008-20-6 Primary Name: Kerosene. As a result, an injection well permit would be required before performing hydraulic fracture stimulation using diesel fuel as defined by EPA on any well in Texas. Hydraulic fracture stimulation using diesel fuel as defined by EPA on a well in Texas without an injection well permit could result in enforcement action.

Producing Well. Statewide Rule 16 states that the operator of a well shall file with the Commission the appropriate completion report within ninety (90) days after completion of the well or within one hundred and fifty (150) days after the date on which the drilling operation is completed, whichever is earlier. Completion of the well in a field authorized by this permit voids the permit for all other fields included in the permit unless the operator indicates on the initial completion report that the well is to be a dual or multiple completion and promptly submits an application for multiple completion. All zones are required to be completed before the expiration date on the existing permit. Statewide Rule 40(d) requires that upon successful completion of a well in the same reservoir as any other well previously assigned the same acreage, proration plats and P-15s or P-16s (if required) or a lease plat and P-16 must be submitted with no double assignment of acreage unless authorized by rule.

Dry or Noncommercial Hole. Statewide Rule 14(b)(2) prohibits suspension of operations on each dry or non-commercial well without plugging unless the hole is cased and the casing is cemented in compliance with Commission rules. If properly cased, Statewide Rule 14(b)(2) requires that plugging operations must begin within a period of one (1) year after drilling or operations have ceased. Plugging operations must proceed with due diligence until completed. An extension to the one-year plugging requirement may be granted under the provisions stated in Statewide Rule 14(b)(2).

Intention to Plug. The operator must file a Form W-3A (Notice of Intention to Plug and Abandon) with the district office at least five (5) days prior to beginning plugging operations. If, however, a drilling rig is already at work on location and ready to begin plugging operations, the district director or the director's delegate may waive this requirement upon request, and verbally approve the proposed plugging procedures.

***Notification of Plugging a Dry Hole.** The operator MUST call in notification to the appropriate district office (phone number shown on permit) a minimum of four (4) hours prior to beginning plugging operations. The individual giving the notification MUST be able to advise the district office of the drilling permit number and all water protection depths for that location as stated in the Groundwater Advisory Unit letter.

DIRECT INQUIRIES TO: DRILLING PERMIT SECTION, OIL AND GAS DIVISION

PHONE
(512) 463-6751

MAIL:
PO Box 12967
Austin, Texas, 78711-2967

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

PERMIT TO DRILL, DEEPEN, PLUG BACK, OR RE-ENTER ON A REGULAR OR ADMINISTRATIVE EXCEPTION LOCATION

PERMIT NUMBER	DATE PERMIT ISSUED OR AMENDED	DISTRICT
891726	Aug 18, 2023	* 03
API NUMBER	FORM W-1 RECEIVED	COUNTY
42-245-32908	Jun 28, 2023	JEFFERSON
TYPE OF OPERATION	WELLBORE PROFILE(S)	ACRES
NEW DRILL	Vertical	642.2

OPERATOR 101256

EXXONMOBIL LOW C SOL ON STOR LLC

ATTN EDWARD E GRAHAM W1.2B.02
22777 SPRINGWOODS VILLAGE PKWY
SPRING, TX 77389

NOTICE
This permit and any allowable assigned may be revoked if payment for fee(s) submitted to the Commission is not honored.
District Office Telephone No:
(713) 869-5001

LEASE NAME	WELL NUMBER
BEAD FARM CO.	1
LOCATION	TOTAL DEPTH
18 miles E direction from CLEVELAND	8700

Section, Block and/or Survey

SECTION 41 BLOCK ABSTRACT 266

SURVEY T&NO RR CO

DISTANCE TO SURVEY LINES	DISTANCE TO NEAREST LEASE LINE
1475 ft. N 1817 ft. W	ft.
DISTANCE TO LEASE LINES	DISTANCE TO NEAREST WELL ON LEASE
1475 ft. N 1817 ft. W	See FIELD(s) Below

FIELD(s) and LIMITATIONS:

* SEE FIELD DISTRICT FOR REPORTING PURPOSES *

FIELD NAME / LEASE NAME	ACRES / NEAREST LEASE	DEPTH	WELL # / NEAREST WE	DIST
WILDCAT	642.20	8,495	1	03
BEAD FARM CO.			0	

RESTRICTIONS: For exploratory test only

THE FOLLOWING RESTRICTIONS APPLY TO ALL FIELDS

This well shall be completed and produced in compliance with applicable special field or statewide spacing and density rules. If this well is to be used for brine mining, underground storage of liquid hydrocarbons in salt formations, or underground storage of gas in salt formations, a permit for that specific purpose must be obtained from Environmental Services prior to construction, including drilling, of the well in accordance with Statewide Rules 81, 95, and 97.

This well must comply to the new SWR 3.13 requirements concerning the isolation of any potential flow zones and zones with corrosive formation fluids. See approved permit for those formations that have been identified for the county in which you are drilling the well in.

CONFIDENTIAL BUSINESS INFORMATION

RAILROAD COMMISSION OF TEXAS
OIL & GAS DIVISION

SWR #13 Formation Data

JEFFERSON (245) County

Formation	Remarks	Geological Order	Effective Date
LAFAYETTE	disposal	1	12/17/2013
CAPROCK	disposal	2	12/17/2013
SPINDLETOP SALT DOME	disposal	3	12/17/2013
FANNETT SALT DOME	disposal	4	12/17/2013
BIG HILL SALT DOME	disposal	5	12/17/2013
PLEISTOCENE-LISSIE	disposal	6	12/17/2013
MIOCENE	disposal	7	12/17/2013
FRIO	disposal	8	12/17/2013
MARINULINA	disposal	9	12/17/2013
HETEROSTEGINA	disposal	10	12/17/2013

The above list may not be all inclusive, and may also include formations that do not intersect all wellbores. The listing order of the Formation information reflects the general stratigraphic order and relative geologic age. This is a dynamic list subject to updates and revisions. It is the operator's responsibility to make sure that at the time of spudding the well the most current list is being referenced. Refer to the RRC website at the following address for the most recent information.
http://www.rrc.texas.gov/oil-gas/compliance-enforcement/rule-13-geologic-formation-info

CONFIDENTIAL BUSINESS INFORMATION

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
481 WINSCOTT ROAD, Ste. 200 • BENBROOK, TEXAS 76126
TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
TEXAS FIRM REGISTRATION NO. 10042504
WWW.TOPOGRAPHIC.COM

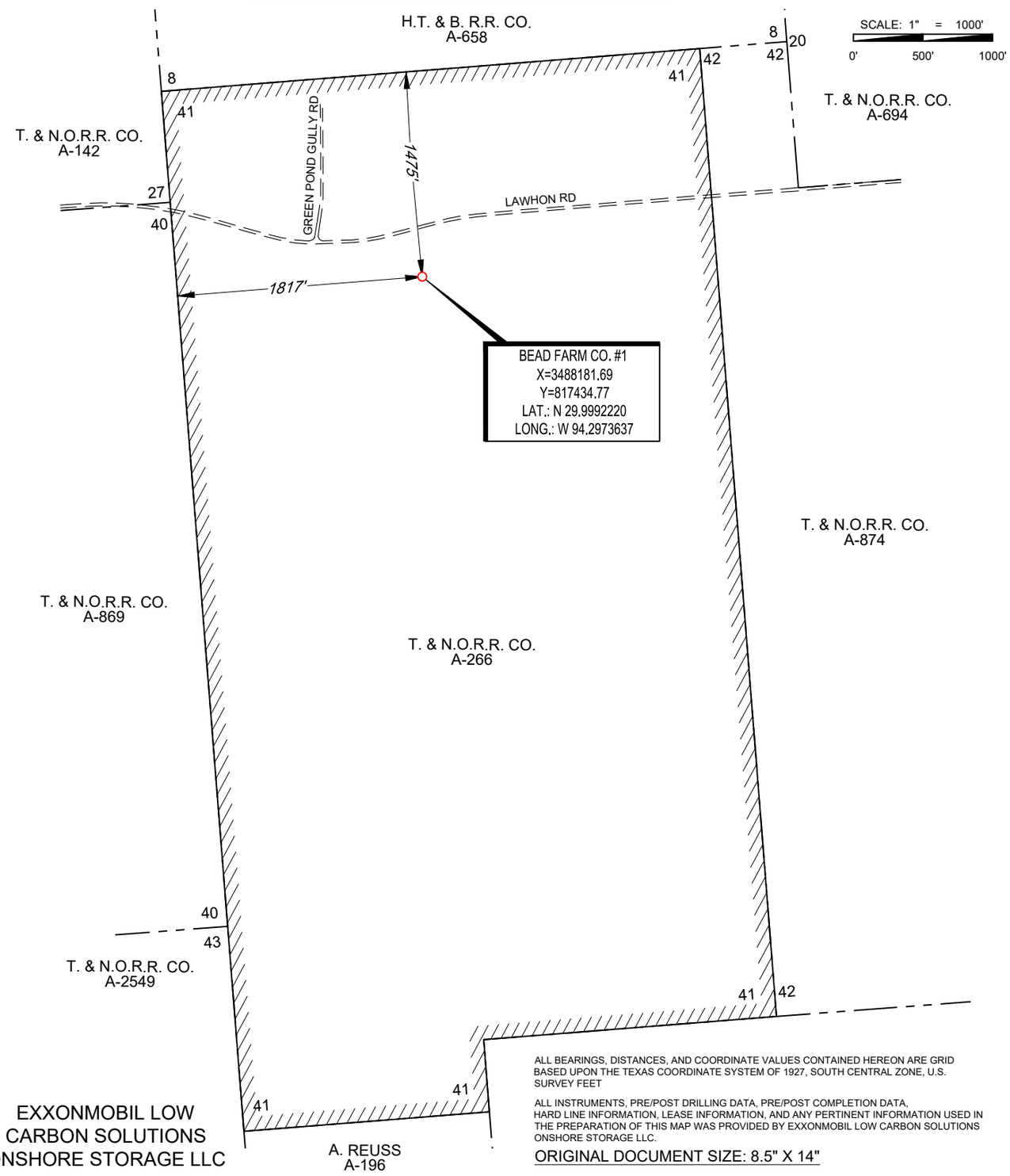
JEFFERSON COUNTY, TEXAS

SECTION 41, T. & N.O.R.R. CO. SURVEY, A-266

LEGEND

- UNIT/LEASE BOUNDARY
- SECTION LINE
- ROAD
- PROPOSED WELL

UNIT/LEASE	SURVEY
S.H.L. 1817' FWL, 1475' FNL	T. & N.O.R.R. CO., A-266



EXXONMOBIL LOW CARBON SOLUTIONS ONSHORE STORAGE LLC

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE TEXAS COORDINATE SYSTEM OF 1927, SOUTH CENTRAL ZONE, U.S. SURVEY FEET

ALL INSTRUMENTS, PRE/POST DRILLING DATA, PRE/POST COMPLETION DATA, HARD LINE INFORMATION, LEASE INFORMATION, AND ANY PERTINENT INFORMATION USED IN THE PREPARATION OF THIS MAP WAS PROVIDED BY EXXONMOBIL LOW CARBON SOLUTIONS ONSHORE STORAGE LLC.

ORIGINAL DOCUMENT SIZE: 8.5" X 14"

LEASE NAME & WELL NO.: BEAD FARM CO. #1 LEASE ACREAGE: CALLED 642.2 DATE OF SURVEY: APRIL 21, 2023

LOCATED: ±12 MILES SOUTHWEST OF BEAUMONT, TX GROUND ELEVATION: 23'

BEST ACCESSIBILITY TO LOCATION: ±0.02 MILES TO A POINT ±225 FEET NORTHWEST FROM LOCATION

DISTANCE & DIRECTION
FROM HWY JCT. OR TOWN: FROM THE INTERSECTION OF LAWHON RD AND GREEN POND GULLY RD, HEAD EAST

ON LAWHON RD 650 FEET, TURNING SOUTH, HEAD 350 FEET TO SURFACE LOCATION

STATE OF TEXAS
REGISTERED
JEFFREY N. LUEDERS
6512
PROFESSIONAL
LAND SURVEYOR

CERTIFICATION:

I, JEFFREY N. LUEDERS, A REGISTERED PROFESSIONAL LAND SURVEYOR, AND AN AUTHORIZED AGENT OF TOPOGRAPHIC LAND SURVEYORS, DO HEREBY CERTIFY THAT THE ABOVE DESCRIBED "PRE-CONSTRUCTION" PROPOSED WELL LOCATION WAS SURVEYED AND STAKED ON THE GROUND AS SHOWN HEREIN.

FILE NAME LO_TX245_BEAD_FARM_CO_1
DRH

DATE CERTIFIED: 05/16/2023 TEXAS REG. NO. 6512

CONFIDENTIAL BUSINESS INFORMATION

CHRISTI CRADDICK, CHAIRMAN
WAYNE CHRISTIAN, COMMISSIONER
JIM WRIGHT, COMMISSIONER

DANNY SORRELLS
DIRECTOR, OIL AND GAS DIVISION
PETER FISHER, P.G.
DISTRICT DIRECTOR

RAILROAD COMMISSION OF TEXAS

OIL AND GAS DIVISION

OPERATOR Name:	EXXONMOBIL LOW C SOL ON	**RE:**	**Lease:**	BEAD FARM CO.
Address1:	ATTN EDWARD E GRAHAM W1.2B.02			
Address2:	22777 SPRINGWOODS VILLAGE PKWY	**Well No:**	1	
City:	SPRING	**Sec:**	41	**Block:**
State:	TX	**County:**	JEFFERSON	
		Survey Name:	T&NO RR CO	

SWR13EX Application Number: 125182 **Drilling Permit No:** 891726

SWR 13 CASING EXCEPTION APPLICATION/ALTERNATIVE REQUEST APPROVED

The Proposed Casing and Cementing Program submitted for **LEASE** BEAD FARM CO. **;**
WELL 1 has been approved by the Railroad Commission of Texas District Office.

a. A copy of this approved letter must be kept on location during all phases of drilling and/or plugging operations. Once approved, changes CANNOT be made to the Proposed Casing Program on the original application without additional approval from the Railroad Commission of Texas District Office.

b. Any substantive modifications to the cement program require prior approval from the Railroad Commission of Texas District Office, and may require re-submission of the SWR 13 (Statewide Rule 13) Alternate Surface Casing Application. Contact the Railroad Commission of Texas District Office for more information.

c. The tail slurry must be sufficient to fill the Zone of Critical Cement as described in Statewide Rule 13(b)(1)(H)(i). In addition, all cement slurries must be mixed on location as described in Application for Alternate Surface Casing Program.

d. The casing and cement program shall adhere to the following specifications:

Set 2200 feet of surface casing and circulate cement from the shoe to the ground surface.

IF CEMENT IS NOT CIRCULATED TO THE GROUND SURFACE AS REQUIRED BY THIS EXCEPTION, YOU MUST CONTACT THE RAILROAD COMMISSION OF TEXAS DISTRICT OFFICE IMMEDIATELY AND FOLLOW THE PROCEDURES SET OUT IN RULE 13(b)(1)(H)(iii) OR AS REQUIRED BY THE RAILROAD COMMISSION OF TEXAS DISTRICT OFFICE.

You must comply with all other provisions of SWR 13 (Statewide Rule 13) and a representative of the cementing company who performs the cementing job for the protection of usable quality water strata must sign the Form W-15 attesting to the information regarding cementing operations performed; including circulation of cement. (Note: If surface casing is set below the approved depth, this can result in denial of future Statewide Rule 13(b)(1)(H)(i) requests.) A condition of the approved drilling permit requires notification to the Railroad Commission of Texas District Office eight (8) hours prior to the time casing is to be set/cemented in the well. If your exception request was submitted after the subject well has been drilled and completed, the operator may be referred for enforcement action.

This authorization shall expire within five (5) years from the date the Groundwater Protection Determination was issued, or at the expiration of the drilling permit (if the well is not spudded prior to expiration) for the referenced well, whichever occurs first. Furthermore, this authorization supersedes any prior authorizations issued for the referenced well.

This exception is based on information provided when the application was submitted 09/26/2023 .
If any information has changed, you must contact the appropriate Railroad Commission of Texas District Office, and submit a new application if applicable. If you have questions, please contact the appropriate Oil and Gas District office.

RRC APPROVAL BY: Matthew Pollak DATE: 09/26/2023

PETER FISHER, P.G.

DISTRICT DIRECTOR

Railroad Commission of Texas Attachment G

Well(s) Plugging Plan

Underground Injection Control – Class VI Permit Application for Rose CCS Project Injection Wells No. 01, No. 02, and No. 03

SECTION 6 – INJECTION WELL PLUGGING PLAN

Rose Carbon Capture and Storage Project

Jefferson County, Texas

ExxonMobil Low Carbon Solutions Onshore Storage LLC

May 2025

SECTION 6 – INJECTION WELL PLUGGING PLAN

TABLE OF CONTENTS

6.0 Injection Well Plugging Plan 5
6.1 Objectives 5
6.2 Preparation of Well Prior to Plugging 6
6.2.1 Flushing Well with Kill Weight Fluid 6
6.2.2 Removal of Well Components and Obstructions 6
6.2.3 Planned Tests or Measures to Determine Bottomhole Pressure 6
6.2.4 Planned External MITs 7
6.2.5 Planned Site Restoration Activities 8
6.3 Injection Well Zonal Isolation and Final P&A 8
6.3.1 Zonal Isolation and Intermediate Plug-Back Plan 8
6.3.2 Final P&A 9
6.4 Notifications and Record Keeping 16
6.5 Monitoring Wells P&A 17
6.6 Amendments to the P&A Plan 20

List of Tables

Table 6-1: External MIT Methods 7
Table 6-2: Common Cement Additives 8
Table 6-3: Description of Casing, Tubing, and Other Well Construction Materials to be Removed 10
Table 6-4: Plug Details for Injection Well No. 01 11
Table 6-5: Plug Details for Injection Well No. 02 13
Table 6-6: Plug Details for Injection Well No. 03 16

Appendix H – Plugging Schematics and Procedures

Appendix H.1: Plugging Schematics and Procedures

- Appendix H.1-1: Plugging Schematic for Rose CCS Project Injection Well No. 01
- Appendix H.1-2: Plugging Schematic for Rose CCS Project Injection Well No. 02
- Appendix H.1-3: Plugging Schematic for Rose CCS Project Injection Well No. 03

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6.0 Injection Well Plugging Plan

ExxonMobil Low Carbon Solutions Onshore Storage LLC (ExxonMobil) is submitting this Underground Injection Control Class VI permit application to the United States Environmental Protection Agency for the Rose Carbon Capture and Storage (CCS) Project (Project). ExxonMobil is undertaking the Project in Jefferson County, Texas, to sequester a maximum of 5 million metric tonnes per annum of carbon dioxide (CO2) using three injection wells over an injection period of up to 13 years. The predicted total CO2 storage is 53 million metric tonnes. The Injection Well Plugging Plan section for the Project Class VI Underground Injection Control (UIC) Permit Application was prepared to meet the requirements of the Code of Federal Regulations, Title 40, Section 146.92 [40 CFR 146.92] and Texas Administrative Code, Part 1 Title 16 Chapter 5 for plugging and abandonment (P&A) of the Rose CCS Project Injection Wells No. 01, No. 02, and No. 03. The purpose of the Plugging Plan is to demonstrate the actions that ExxonMobil will take to mitigate the threat to underground sources of drinking water (USDW) during the post-injection period.

ExxonMobil has obtained a substantial amount of data and analyses from the core sampling and analysis program for the Project's stratigraphic well (Bead Farm Co. #1; American Petroleum Institute 4224532908). This data has been incorporated into the Area of Review model to show the extent of the CO2 plume and critical-pressure front and the operating strategy for CO2 storage.

In alignment with Statewide Rule §5.203(k)(1)(C)ExxonMobil has selected materials for plugging the injection wells that will resist the corrosive properties of the injection fluid to maintain mechanical integrity of the plug and well casing. The planned plugging procedures are aligned with best practices for restoring the upper composite confining zone (UCCZ) integrity at each injection well location. ExxonMobil has a staged perforation schedule for the injection wells to optimize the storage of CO2. As a result, multiple injection well "plug-back" events will be undertaken to move from one injection interval to the next prior to permanent well closure. Once the storage capacity has been reached, the last injection interval and the remainder of the injection well will be plugged for final abandonment.

Separately, the procedures and details for the stratigraphic well P&A are included in this plan for completeness purposes.

6.1 Objectives

The Plugging Plan represents one of the final steps in the lifecycle of each of the three injection wells for the Project. ExxonMobil will properly plug and abandon the injection wells, maintain the integrity of the UCCZ throughout the remainder of the post-closure care period, and monitor the performance of the plugged wells to contain CO2 and brine in the injection zone, reducing the potential risk of USDW endangerment.

The Plugging Plan and procedures were designed to meet the following objectives:

- Measure the bottomhole reservoir pressure prior to conducting plugging activities [40 CFR 146.92(b)(1)];
- Assess the external mechanical integrity of the long-string casing by using appropriate testing methods to demonstrate isolation consistent with 40 CFR 146.92(b)(2);

- Select the type, grade, and quantity of material to be used in plugging to withstand contact with CO2 and acidified liquids in the injection intervals [40 CFR 146.92(b)(5)]; and
- Detail the methods, locations, and types of plugs used within the well [40 CFR 146.92(b)(4) and 40 CFR 146.92(b)(6)].

6.2 Preparation of Well Prior to Plugging

Prior to plugging, the well will be flushed with a kill weight fluid, the bottomhole pressure will be measured, well components will be removed as needed, and an external mechanical integrity test (MIT) will be performed. The proposed plugging methods and materials used are corrosion compatible to the injection interval conditions.

As needed, ExxonMobil will repair deficiencies identified during the life of the well to mitigate potential leaks to USDWs [40 CFR 146.88(f)]. Historical MIT data and prior remedial measures will be considered prior to plugging operations. If required, those remedial activities will be included in an amendment to this plan.

6.2.1 Flushing Well with Kill Weight Fluid

Pressure control will be accomplished through the use of kill weight brine that is weighted and compatible with the injectate and formation fluids. The brine will be weighted to provide a minimum Claimed as PBI [redacted]. The kill weight brine fluids will be circulated through the injection well to remove fluids or fine debris that could have a significant impact on the integrity of cementing operations. The following components that have been in contact with injection or annular fluids will be flushed:

- Any components in the annular space between the injection tubing and the production casing;
- The long-string casing;
- The perforated injection zone; and
- The injection packer, if needed.

Claimed as PBI [redacted]. After the well has ceased operation, flushing fluid will be circulated through tubing to flush the well of free solids, as necessary.

6.2.2 Removal of Well Components and Obstructions

The removal of well equipment prior to plugging will be completed at the end of the injection period for each well with the objective to open the well for access. In general, uncemented and non-permanent components of the well will be removed. This includes downhole monitoring devices and potentially shut-off devices. The tubing will be pulled from the well.

The surface and long-string casings will be cemented to the surface and will remain in place.

6.2.3 Planned Tests or Measures to Determine Bottomhole Pressure

Prior to each interim plug-back from total depth and prior to permanent abandonment, ExxonMobil will measure the bottomhole reservoir pressure using the downhole pressure

temperature (DHPT) gauge installed above the packer as discussed in Section 4 – Well Construction Plan and Operating Conditions. The bottomhole pressure will be calculated by multiplying the CO2 gradient by the difference in depth between the DHPT gauge and top of perforation, and adding this to the pressure observed at the DHPT gauge, i.e., BHP = (CO2 gradient x (top perforation – DHPT depth)) + DHPT Pressure gauge. The bottomhole reservoir pressure will be used to estimate the density of kill weight brine needed to establish static equilibrium prior to plug placement.

6.2.4 Planned External MITs

MIT will be used to identify that there is no significant leak in the casing, tubing, or packer; and there is no significant fluid movement into a USDW through channels adjacent to the injection wellbore [40 CFR 146.89(a)]. ExxonMobil will conduct on an annual basis at least one of the tests listed in Table 6-1 as part of the monitoring program, to verify external mechanical integrity as required in 40 CFR 146.92(a).

Table 6-1: External MIT Methods

Test Description	Method of Testing
Temperature Log	Wireline log and distributed temperature sensing with fiber cable installed in the wells
Oxygen Activation/Pulse Neutron Log	Wireline log

The results of the MIT will be documented and provided to the UIC Program Director once per year in digital form.

If any deviation from the baseline logs performed with respect to the UCCZ and potential flow toward USDW are identified, the UIC Program Director will be informed and an investigation will be performed.

Conditions that constitute a pass/fail for the MIT logs are as follows:

- Temperature Log: A potential breach of CO2 out of zone can be identified by changes in temperature profile above the UCZ compared to baseline logs and other post-injection logs. Cooler than expected temperature anomalies above the UCZ may indicate integrity issues and further logs will be performed to investigate the anomalies.
- Pulse Neutron Log in Oxygen Activation mode will be run to confirm fluid movement and quantify rate.

CO2-Compatible Materials

In accordance with 40 CFR 146.92(b)(3) and (5) and Statewide Rule §5.203(k)(1)(C), a cement that is compatible with CO2 will be used as the UCCZ cement plug. The procedures for corrective action on artificial penetrations of the UCCZ were described in Section 3 – Area of Review and Corrective Action Plan. ExxonMobil will evaluate potential cement options prior to implementing the cementing operations with concurrence of the UIC Program Director. The intent is to select a cement system that is designed to provide a long-term cement sheath or plug that can withstand the temperature, pressure, and chemical interactions.

Cement at intervals above the UCCZ will be based on Class H cement. A list of common cement additives is provided in Table 6-2 for the Class H cement to improve setting time,

reduce porosity, and improve overall strength if needed. ExxonMobil will report the wet density and will retain duplicate samples of the cement used for each plug in the plugging reports.

Table 6-2: Common Cement Additives

Additive Type/Category	Additives
Fluid-loss additive	• Cellulosic polymers • Polyamines • Sulfonated aromatic polymers • Polyvinyl pyrrolidone • Polyvinyl alcohol • Acrylamido methyl propane sulfonate copolymers and terpolymers • Bentonite • Latexes • Crosslinked polyvinyl pyrrolidone
Dispersant	• Polynapthalene sulfonate • Polymelamine sulfonate
Retarder	• Lignosulfonates • Hydroxycarboxylic acids • Cellulose derivatives • Organophosphonates • Certain inorganic compounds
Accelerator	• Calcium chloride • Sodium chloride • Sodium silicates
Antifoam agent	• Polyglycol ethers • Silicones

Mechanical plugs will generally be used for intra-zonal isolation of injection intervals. At the UCCZ, a plug may be set in a nipple profile if packer is present prior to pumping a minimum of 130 feet (ft) of CO2-compatible cement.

6.2.5 Planned Site Restoration Activities

After the injection wells have been plugged and abandoned, the wellhead equipment and surface facilities will be removed from the well site. The surface will be restored to a condition agreed upon by the landowner and by the UIC Program Director, as appropriate.

6.3 Injection Well Zonal Isolation and Final P&A

As discussed above, a plug will be set for injection zone isolation and the final P&A will occur at the end of the Project. The following details outline the procedures for both types of plugs to be installed. The volume and depth of the plugs will depend on the final geology and downhole conditions of the well as assessed during final plug and abandon operations.

6.3.1 Zonal Isolation and Intermediate Plug-Back Plan

The injection wells will be completed in multiple intervals within the gross injection zone. Each injection interval will be used for a discrete period (or stage). Once that period has concluded,

the newly completed portion of the injection interval will be isolated to reduce the potential for crossflow conditions to occur. After an injection stage has been isolated, the production casing will be perforated to create a new injection interval. The perforations will occur from bottom to top, starting in the Upper Frio and sequentially moving up to the Fleming Sand 3, 2, and 1 injection intervals.

When a current completion interval has reached the end of its injection period for each well, that set of perforations will be isolated and abandoned. The general procedure for zonal isolation of completion stages within each injection well are defined below.

6.3.1.1 Pre-Zonal Isolation Activities

ExxonMobil will comply with reporting and notification provisions for the UIC Program Director, which require a 60-day advanced written notice before planned recompletion efforts are undertaken [40 CFR 146.92(c)]. A similar notice of recompletion will be communicated to the Railroad Commission of Texas (RRC). The bottomhole reservoir pressure will be measured using the DHPT gauge installed above the packer [40 CFR 146.92(a)]. Schematics of the initial completion for Rose CCS Project Injection Wells No. 01, No. 02, and No. 03 are presented in Appendix D.1.

6.3.1.2 Zonal Isolation Activities

A barrier will be set above the injection zone to be isolated. This is generally completed via a bridge plug or a permanent packer with plug in nipple profile completed with approximately 20 ft of cement. Based on literature review, SPE 12141 suggests the minimum cemented footage required for zonal isolation within 9-5/8” casing would be 15’. Pursuant to Texas Railroad Commission (TRRC) Statewide Rule §3.14 (g)(3), 20' of cement is to be placed on top of the mechanical bridge plug/packer with plug in nipple profile. With the planned plug, in addition to production casing cement, a 20’ plug was deemed acceptable for zonal isolation for the injection stages. The plug integrity will be assessed by conducting a pressure test or tagging. The perforations will not be squeezed.

6.3.2 Final P&A

After injection operations cease and after post-operational monitoring in a well is completed, the injection well will be prepared for final P&A. The general final P&A procedures are described below.

6.3.2.1 Pre-Plugging Activities (Notifications, Permits, and Inspections)

ExxonMobil will comply with reporting and notification provisions and provide written notification to the UIC Program Director 60 days before planned plugging efforts. If changes have been made to the original approved Injection Well Plugging Plan, ExxonMobil will provide the amended Injection Well Plugging Plan [40 CFR 146.92(c)]. A Notice of Intention to Plug and Abandon Form W-3A will be submitted to the RRC at least 5 days before plugging operations are planned to commence. In accordance with 40 CFR 146.92(d), a plugging report will be submitted to the UIC Program Director and RRC within 60 days after plugging. Plugging Record Form W-3 will be filed with RRC District Office 3 within 30 days after plugging.

The following plugging activities are planned for each injection well:

- The bottomhole reservoir pressure will be measured using the DHPT gauge installed above the packer [40 CFR 146.92(a)];
- The external mechanical integrity will be demonstrated through approved testing methods discussed above [40 CFR 146.92(a)]; and
- The injection well will be flushed with a kill weight fluid prior to pulling the injection tubing and packer [40 CFR 146.92(a)], as described in Table 6-3.

Table 6-3: Description of Casing, Tubing, and Other Well Construction Materials to be Removed

Well Component	Size	Injection Well No. 01 Amount	Injection Well No. 02 Amount	Injection Well No. 03 Amount	Notes / Comments
26 lb/ft L80-13Cr Tubing	7 in.	3,501 ft KB	3,510 ft KB	3,412 ft KB	Tubing and gauges will be pulled prior to P&A operations
KB = Kelly Bushing; lb/ft = pound per foot					

6.3.2.2 Plugging Procedure, Injection Well No. 01

The following sequence of plugging procedures are planned:





6.3.2.3 Plug Details, Injection Well No. 01

Table 6-4 provides the plugging details for Injection Well No. 01; Appendix H shows the final plugged schematic.

Table 6-4: Plug Details for Injection Well No. 01

Plug Description	UCCZ Plug	Surface Casing Shoe Cement Plug	USDW Plug	BUQW Plug	Superior Water Quality Plug	Surface Cement Plug
Plug Number	1	2	3	4	5	6
Diameter of Boring in which Plug Will Be Placed	8.5 in.	8.5 in.	8.5 in.	8.5 in.	8.5 in.	8.5 in.
Depth to Bottom of Tubing or Drill Pipe or Mechanical Base (MD)	3,500 ft KB	2,203 ft KB	1,539 ft KB	1,287 ft KB	750 ft KB	30 ft
Sacks of Cement to be Used (each plug)	43	44	41	41	37	11
Slurry Volume to be Pumped (ft^3)	51	47	43	43	39	12
Slurry Weight (lb/gal) [1]	14.5	16.4	16.4	16.4	16.4	16.4

Plug Description	UCCZ Plug	Surface Casing Shoe Cement Plug	USDW Plug	BUQW Plug	Superior Water Quality Plug	Surface Cement Plug
Top of Plug (MD)	3,370 ft KB	2,083 ft KB	1,429 ft KB	1,177 ft KB	650 ft KB	0 ft
Bottom of Plug (MD)	3,500 ft KB	2,203 ft KB	1,539 ft KB	1,287 ft KB	750 ft KB	30 ft
Type of Cement or Other Material	CO2 compatible cement	Class H	Class H	Class H	Class H	Class H
Method of Emplacement	Circulation	Circulation	Circulation	Circulation	Circulation	Circulation
Type of Plug	Balance	Balance	Balance	Balance	Balance	Balance
New Plug?	Yes	Yes	Yes	Yes	Yes	Yes

ft^3 = cubic feet; lb/gal = pound per gallon; MD = measured depth from KB

[1] Proposed slurry density may be modified as needed due to field conditions and vendor availability

Slurry Volume (ft^3) $= \frac{ID^2}{1029.4} \times \text{plug height (ft)} \times 5.615$

CO_2-compatible Class H cement slurry yield: 1.207 ft^3/sack; Portland Class H cement slurry yield: 1.08 ft^3/sack

ExxonMobil's current plan for the UCCZ plug is to utilize Halliburton's proprietary Corrosalock blend or suitable equivalent. However, ExxonMobil plans to revisit blends to incorporate potential future advancements in CO2-compatible cement that may be available at the time of final abandonment. Any changes to the plugging plan will be provided in the required Notice of intent to plug per 40 CFR 146.92(c).

6.3.2.4 Plugging Procedure, Injection Well No. 02

The following sequence of plugging procedures are planned:





6.3.2.5 Plug Details, Injection Well No. 02

Table 6-5 provides the plugging details for Injection Well No. 02; Appendix H shows the final plugged schematic.

Table 6-5: Plug Details for Injection Well No. 02

Plug Description	UCCZ Plug	Surface Casing Shoe Cement Plug	USDW Plug	BUQW Plug	Superior Water Quality Plug	Surface Cement Plug
Plug Number	1	2	3	4	5	6

Plug Description	UCCZ Plug	Surface Casing Shoe Cement Plug	USDW Plug	BUQW Plug	Superior Water Quality Plug	Surface Cement Plug
Diameter of Boring in which Plug Will Be Placed	8.5 in.	8.5 in.	8.5 in.	8.5 in.	8.5 in.	8.5 in.
Depth to Bottom of Tubing or Drill Pipe or Mechanical Base (MD)	3,500 ft KB	2,244 ft KB	1,539 ft KB	1,287 ft KB	750 ft KB	30 ft
Sacks of Cement to be Used (each plug)	43	44	41	41	37	11
Slurry Volume to be Pumped (ft^3)	51	47	43	43	39	12
Slurry Weight (lb/gal) [1]	14.5	16.4	16.4	16.4	16.4	16.4
Top of Plug (MD)	3,370 ft KB	2,124 ft KB	1,429 ft KB	1,177 ft KB	650 ft KB	0 ft
Bottom of Plug (MD)	3,500 ft KB	2,244 ft KB	1,539 ft KB	1,287 ft KB	750 ft KB	30 ft
Type of Cement or Other Material	CO2 compatible cement	Class H	Class H	Class H	Class H	Class H
Method of Emplacement	Circulation	Circulation	Circulation	Circulation	Circulation	Circulation
Type of Plug	Balance	Balance	Balance	Balance	Balance	Balance
New Plug?	Yes	Yes	Yes	Yes	Yes	Yes

ft^3 = cubic feet; lb/gal = pound per gallon; MD = measured depth from KB

[1] Proposed slurry density may be modified as needed due to field conditions and vendor availability

Slurry Volume (ft^3) $= \frac{ID^2}{1029.4} \times \text{plug height (ft)} \times 5.615$

CO_2-compatible Class H cement slurry yield: 1.207 ft^3/sack; Portland Class H cement slurry yield: 1.08 ft^3/sack

6.3.2.6 Plugging Procedure, Injection Well No. 03

The following sequence of plugging procedures are planned:





6.3.2.7 Plug Details, Injection Well No. 03

Table 6-6 provides the plugging details for Injection Well No. 03; Appendix H shows the final plugged schematic.

Table 6-6: Plug Details for Injection Well No. 03

Plug Description	UCCZ Plug	Surface Casing Shoe Cement Plug	USDW Plug	BUQW Plug	Superior Water Quality Plug	Surface Cement Plug
Plug Number	1	2	3	4	5	6
Diameter of Boring in which Plug Will Be Placed	8.5 in.	8.5 in.	8.5 in.	8.5 in.	8.5 in.	8.5 in.
Depth to Bottom of Tubing or Drill Pipe or Mechanical Base (MD)	3,400 ft KB	2,203 ft KB	1,539 ft KB	1,287 ft KB	750 ft KB	30 ft
Sacks of Cement to be Used (each plug)	43	44	41	41	37	11
Slurry Volume to be Pumped (ft^3)	51	47	43	43	39	12
Slurry Weight (lb/gal) [1]	14.5	16.4	16.4	16.4	16.4	16.4
Top of Plug (MD)	3,270 ft KB	2,035 ft KB	1,429 ft KB	1,177 ft KB	650 ft KB	0 ft
Bottom of Plug (MD)	3,400 ft KB	2,155 ft KB	1,539 ft KB	1,287 ft KB	750 ft KB	30 ft
Type of Cement or Other Material	CO2 compatible cement	Class H	Class H	Class H	Class H	Class H
Method of Emplacement	Circulation	Circulation	Circulation	Circulation	Circulation	Circulation
Type of Plug	Balance	Balance	Balance	Balance	Balance	Balance
New Plug?	Yes	Yes	Yes	Yes	Yes	Yes

ft^3 = cubic feet; lb/gal = pound per gallon; MD = measured depth from KB

[1] Proposed slurry density may be modified as needed due to field conditions and vendor availability

Slurry Volume (ft^3) $= \frac{ID^2}{1029.4} \times \text{plug height (ft)} \times 5.615$

CO_2-compatible Class H cement slurry yield: 1.207 ft^3/sack; Portland Class H cement slurry yield: 1.08 ft^3/sack

6.4 Notifications and Record Keeping

The procedures described above are subject to modification during execution, as necessary, for implementation of plugging operations that protect worker safety and the USDW. Significant modifications due to unforeseen circumstances will be reported to the UIC Program Director within 24 hours of occurrence during field operations and documented in the plugging report. Completed plugging forms, records, and lab information will be supplied to the regulatory agencies as required by the permit. The plugging report will be certified as accurate by ExxonMobil and the plugging contractor and will be submitted to the UIC Program Director within 60 days after plugging is completed [40 CFR 146.92(d)]. Well plugging reports, post-injection site care data (including data and information used to develop the demonstration of the

alternative post-injection site care timeframe), and the site closure report collected pursuant to the requirements in 40 CFR 146.93 (f) and (h), will be retained by ExxonMobil for 10 years following site closure. Site closure and reporting is discussed in Section 7 – Post-Injection Site Care and Site Closure Plan.

The plugging report will provide the following information:

- Results of tests to determine BHP and mechanical integrity;
- Type and number of plugs used;
- Cement type, grade, weight, and quantity of material for plugs;
- Method of cement plug emplacement; and
- Top and bottom of each cement plug.

6.5 Monitoring Wells P&A

Monitoring wells must be plugged in accordance with 40 CFR 146.93(e) to not allow movement of injection or formation fluids that could endanger USDWs. Specific monitoring wells will remain in place after injection wells have been plugged and abandoned for use in monitoring activities associated with the Post Injection Site Care and Site Closure Plan. ExxonMobil will assess the monitoring well plugging procedures prior to P&A in relation to this plan. Documentation of appropriate P&A of the monitoring wells will be submitted to the UIC Program Director in accordance with 40 CFR 146.93(f)(1).

6.5.1.1 Plugging Procedure, In-Zone Monitoring Well No. 01

The following sequence of plugging procedures are planned:





Table 6-7: Plug Details for In-Zone Monitoring Well No. 01

Plug Description	UCCZ Plug	Surface Casing Shoe Cement Plug	USDW Plug	BUQW Plug	Superior Water Quality Plug	Surface Cement Plug
Plug Number	1	2	3	4	5	6
Diameter of Boring in which Plug Will Be Placed	4.8 in.	4.8 in.	4.8 in.	4.8 in.	4.8 in.	4.8 in.
Depth to Bottom of Tubing or Drill Pipe or Mechanical Base (MD)	3,400 ft KB	2,183 ft KB	1,539 ft KB	1,287 ft KB	750 ft KB	30 ft
Sacks of Cement to be Used (each plug)	14	14	13	13	12	4
Slurry Volume to be Pumped (ft^3)	16	15	14	14	13	4
Slurry Weight (lb/gal) [1]	14.5	16.4	16.4	16.4	16.4	16.4
Top of Plug (MD)	3,270 ft KB	2,063 ft KB	1,429 ft KB	1,177 ft KB	650 ft KB	0 ft
Bottom of Plug (MD)	3,400 ft KB	2,183 ft KB	1,539 ft KB	1,287 ft KB	750 ft KB	30 ft
Type of Cement or Other Material	CO2 compatible cement	Class H	Class H	Class H	Class H	Class H
Method of Emplacement	Circulation	Circulation	Circulation	Circulation	Circulation	Circulation
Type of Plug	Balance	Balance	Balance	Balance	Balance	Balance
New Plug?	Yes	Yes	Yes	Yes	Yes	Yes

ft^3 = cubic feet; lb/gal = pound per gallon; MD = measured depth from KB

[1] Proposed slurry density may be modified as needed due to field conditions and vendor availability

Slurry Volume (ft^3) $= \frac{ID^2}{1029.4} \times \text{plug height (ft)} \times 5.615$

Plug Description	UCCZ Plug	Surface Casing Shoe Cement Plug	USDW Plug	BUQW Plug	Superior Water Quality Plug	Surface Cement Plug
CO_2-compatible Class H cement slurry yield: 1.207 ft^3/sack; Portland Class H cement slurry yield: 1.08 ft^3/sack						

6.5.1.2 Plugging Procedure, Above-Zone Monitoring Well No. 01 (Bead Farm Co. #1)

The following sequence of plugging procedures are planned:



Table 6-8: Plug Details for Above-Zone Monitoring Well No. 01 (Bead Farm Co. #1)

Plug Description	UCCZ Plug	Surface Casing Shoe Cement Plug	USDW Plug	BUQW Plug	Superior Water Quality Plug	Surface Cement Plug
Plug Number	1	2	3	4	5	6
Diameter of Boring in which Plug Will Be Placed	8.5 in.	8.5 in.	8.5 in.	8.5 in.	8.5 in.	8.5 in.
Depth to Bottom of Tubing or Drill Pipe or Mechanical Base (MD)	3,527 ft KB	2,225 ft KB	1,539 ft KB	1,287 ft KB	750 ft KB	30 ft
Sacks of Cement to be Used (each plug)	64	44	41	41	37	11
Slurry Volume to be Pumped (ft^3)	77	47	43	43	39	12
Slurry Weight (lb/gal) [1]	14.5	16.4	16.4	16.4	16.4	16.4
Top of Plug (MD)	3,332 ft KB	2,105 ft KB	1,429 ft KB	1,177 ft KB	650 ft KB	0 ft
Bottom of Plug (MD)	3,527 ft KB	2,225 ft KB	1,539 ft KB	1,287 ft KB	750 ft KB	30 ft
Type of Cement or Other Material	CO2 compatible cement	Class H	Class H	Class H	Class H	Class H
Method of Emplacement	Circulation	Circulation	Circulation	Circulation	Circulation	Circulation
Type of Plug	Balance	Balance	Balance	Balance	Balance	Balance
New Plug?	No	Yes	Yes	Yes	Yes	Yes

ft^3 = cubic feet; lb/gal = pound per gallon; MD = measured depth from KB

[1] Proposed slurry density may be modified as needed due to field conditions and vendor availability

Slurry Volume (ft^3) $= \frac{ID^2}{1029.4} \times \text{plug height (ft)} \times 5.615$

CO_2-compatible Class H cement slurry yield: 1.207 ft^3/sack; Portland Class H cement slurry yield: 1.08 ft^3/sack

6.6 Amendments to the P&A Plan

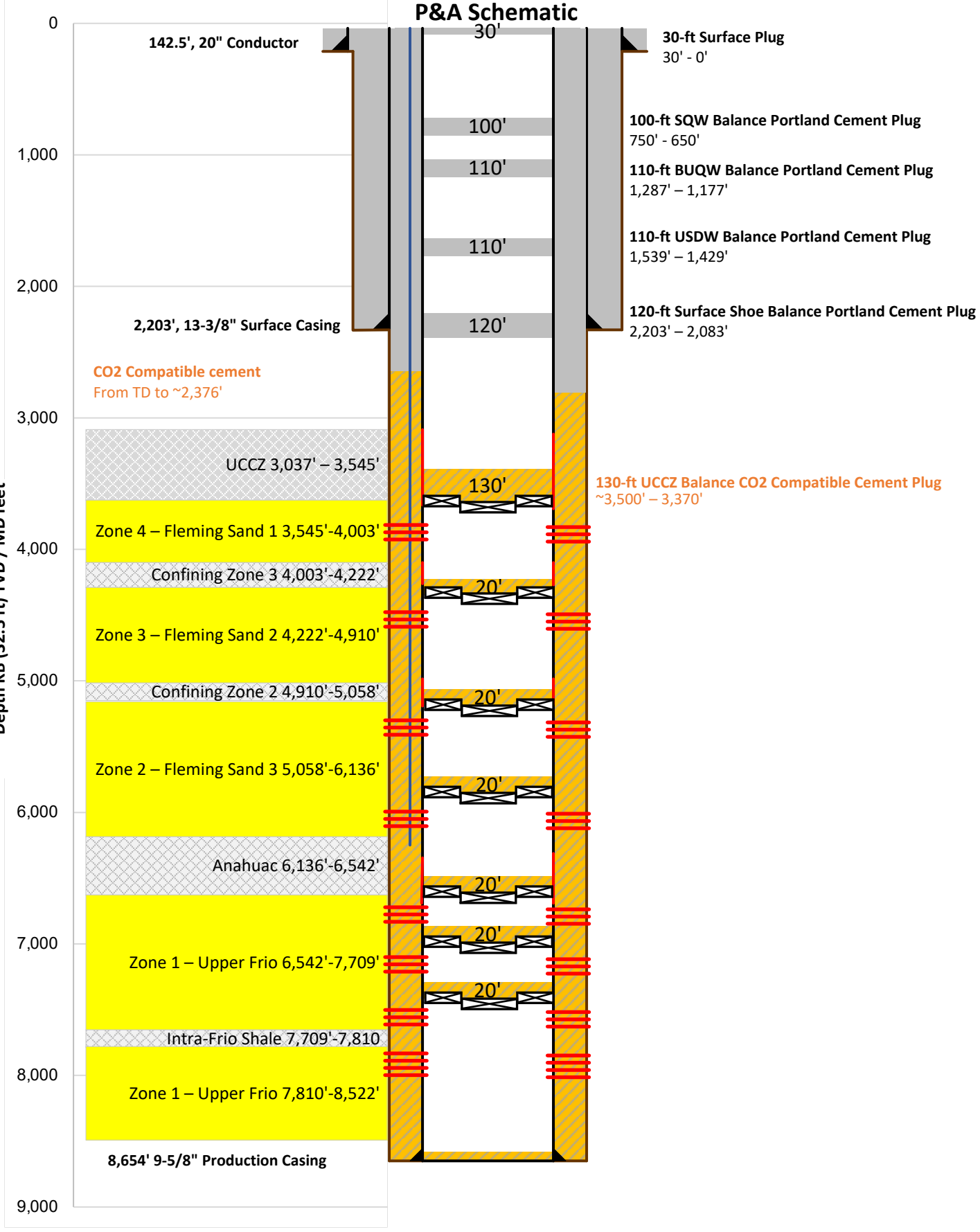
The Plugging Plan will be amended to account for changes in conditions that trigger modification to the Area of Review. ExxonMobil will inquire with the UIC Program Director to confirm whether such changes in condition warrant amendments to the Plugging Plan. Approval for revisions to the Injection Well Plugging Plan will be requested from the UIC Program Director. Any approved changes to the Plugging Plan will be incorporated in the permit and are subject to permit modifications. Notifications of intent to plug will be provided to the UIC Program Director at least 60 days prior to conducting the plugging activity [40 CFR 146.92(c)].

CONFIDENTIAL BUSINESS INFORMATION

Appendix H: Plugging Schematics and Procedures

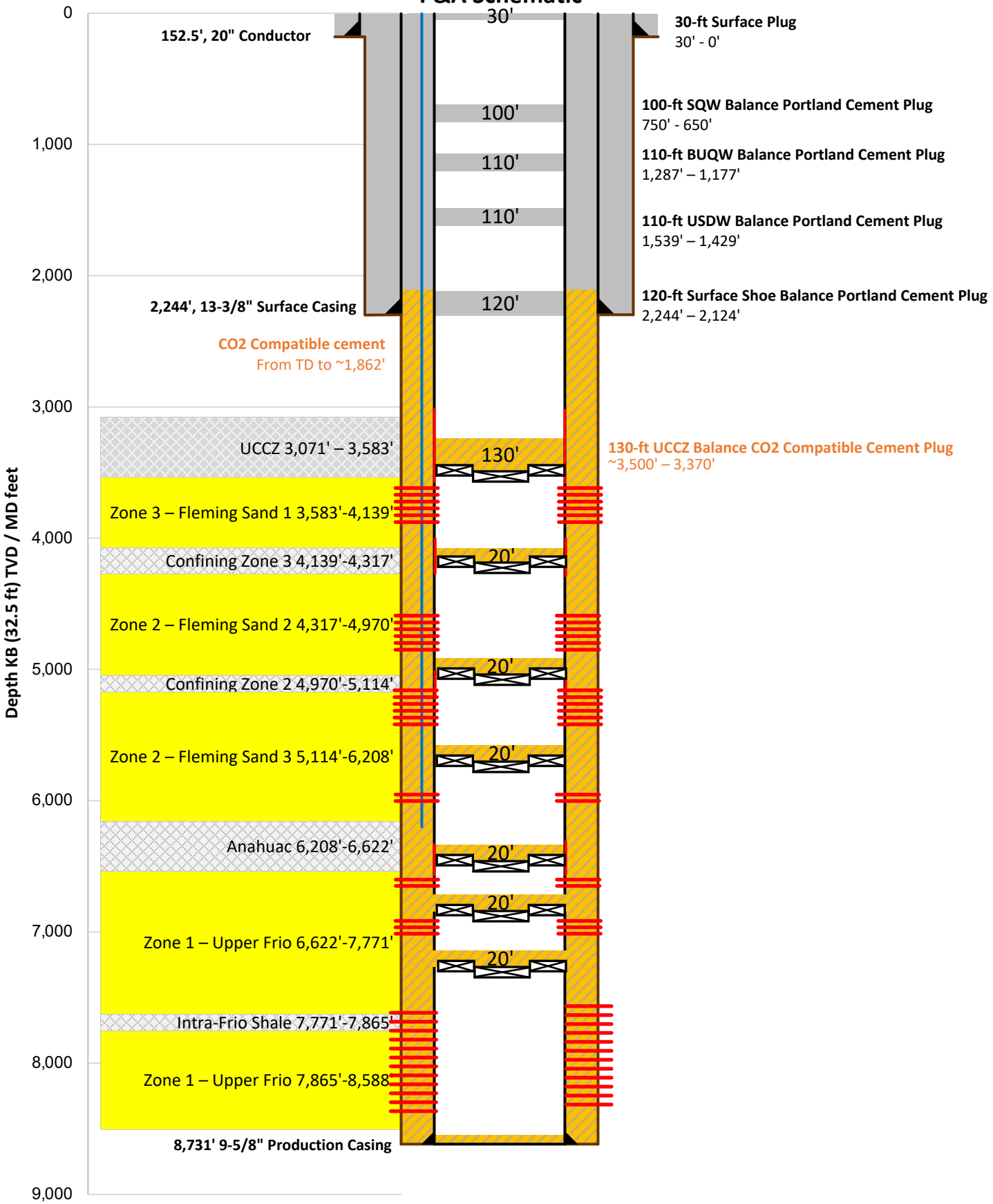
CONFIDENTIAL BUSINESS INFORMATION

Labelle Properties Ltd No. 1
Rose CCS Project Injection Well No. 01
P&A Schematic



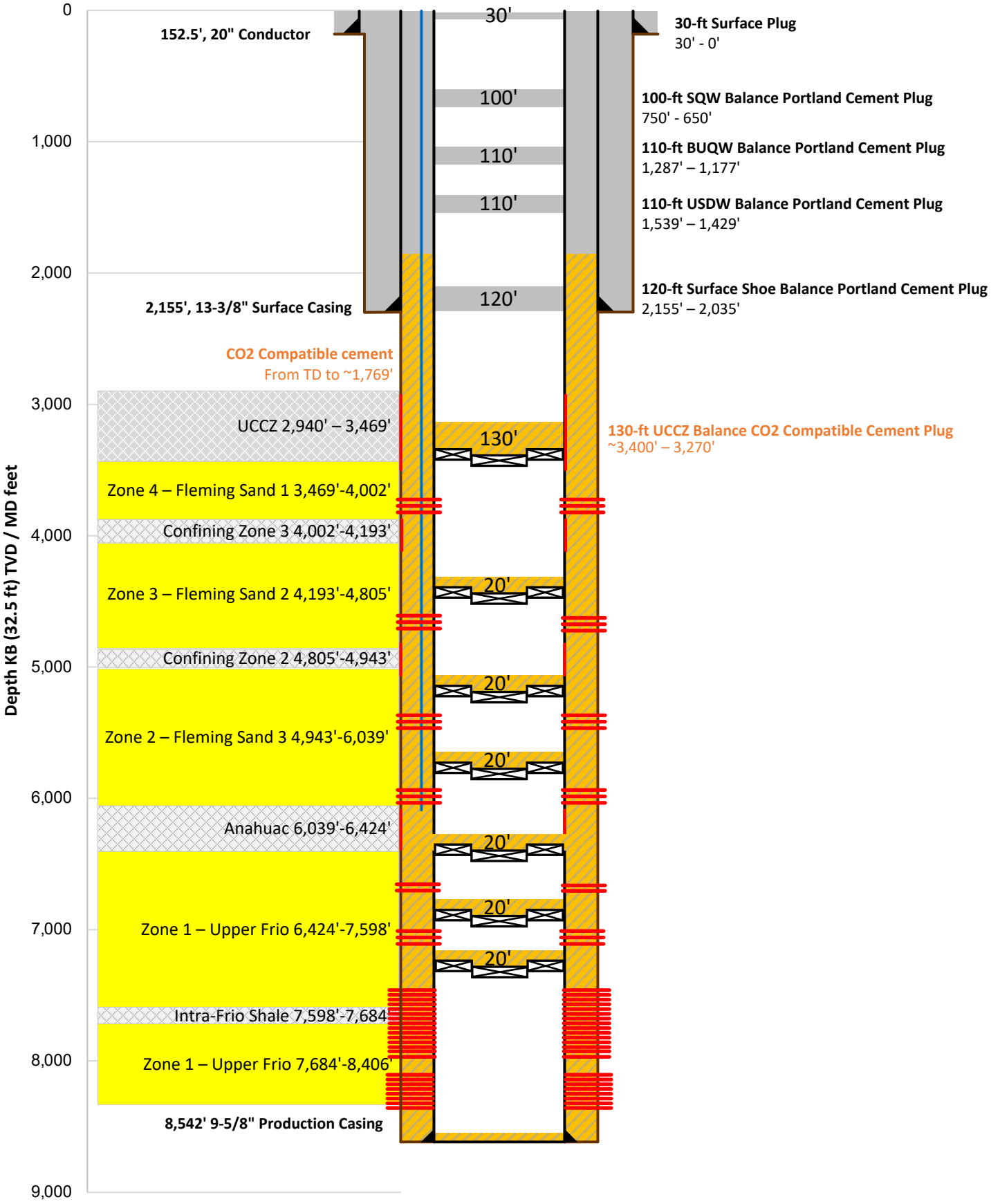
CONFIDENTIAL BUSINESS INFORMATION

Bead Farm Co 2
Rose CCS Project Injection Well No. 02
P&A Schematic



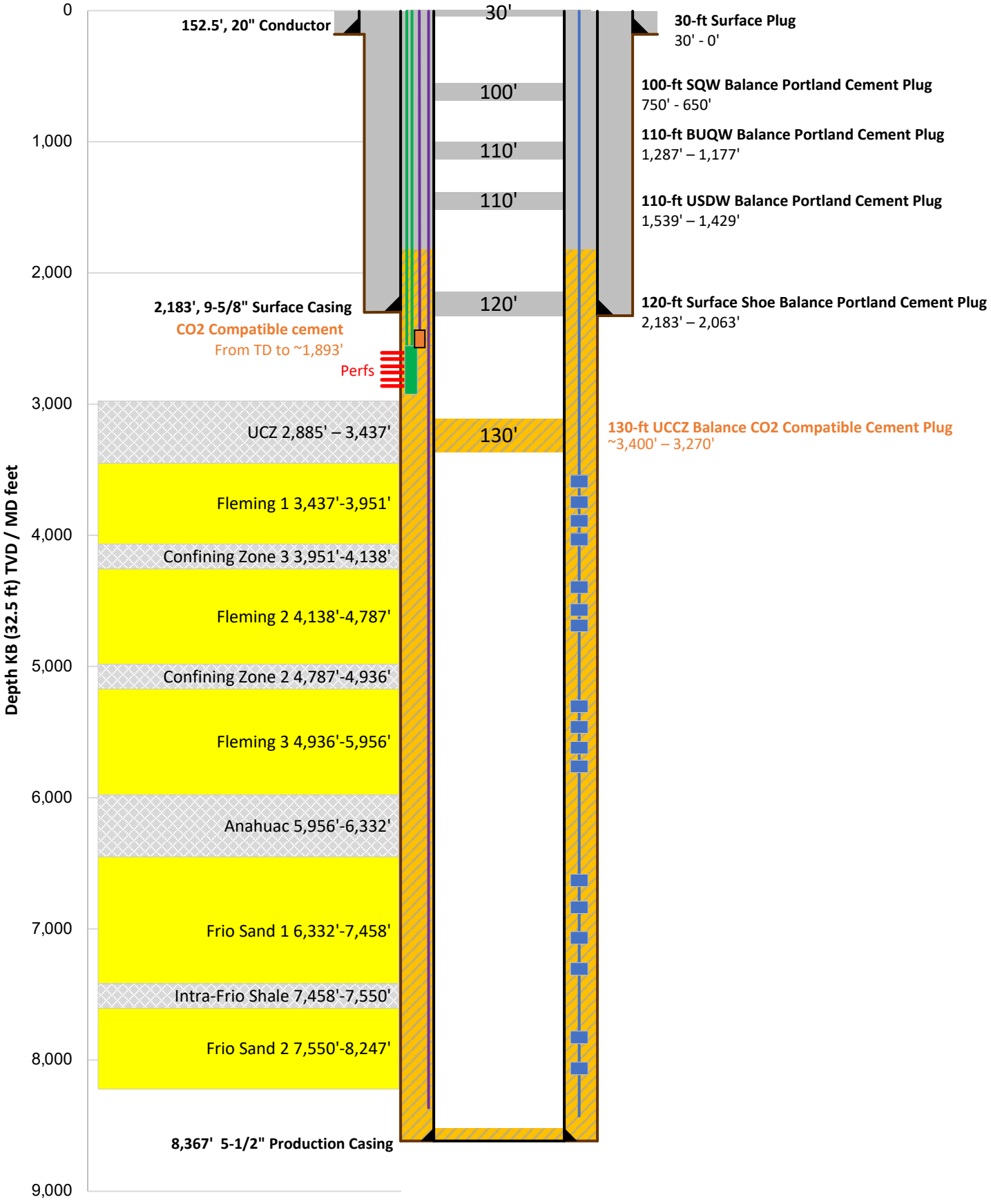
CONFIDENTIAL BUSINESS INFORMATION

Bead Farm 3
Rose CCS Project Injection Well No. 03
P&A Schematic



CONFIDENTIAL BUSINESS INFORMATION

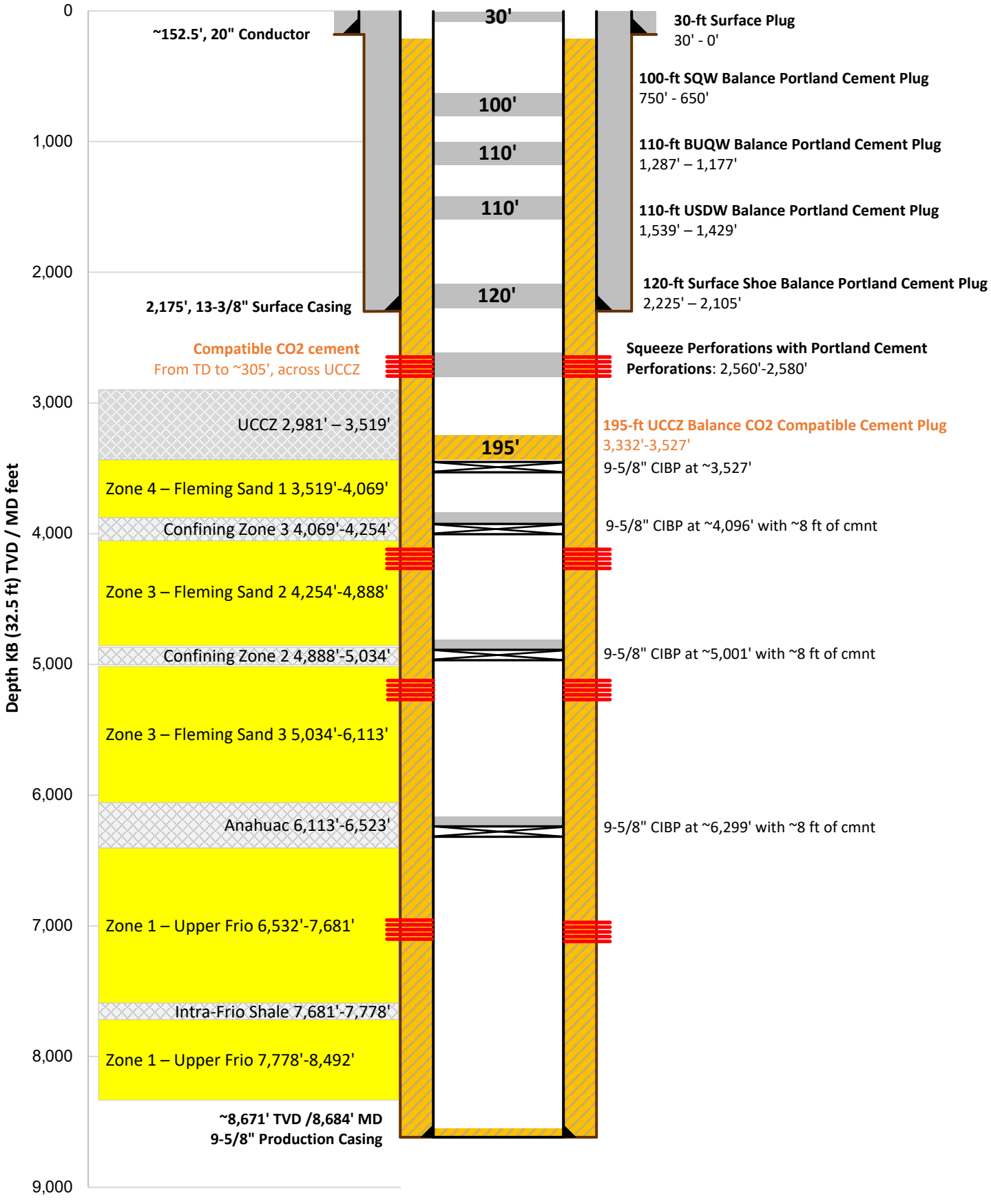
Bead Farm Co #4
Rose CCS Project In Zone Monitor
P&A Schematic



CONFIDENTIAL BUSINESS INFORMATION

Rose CCS Project Bead Farm 1

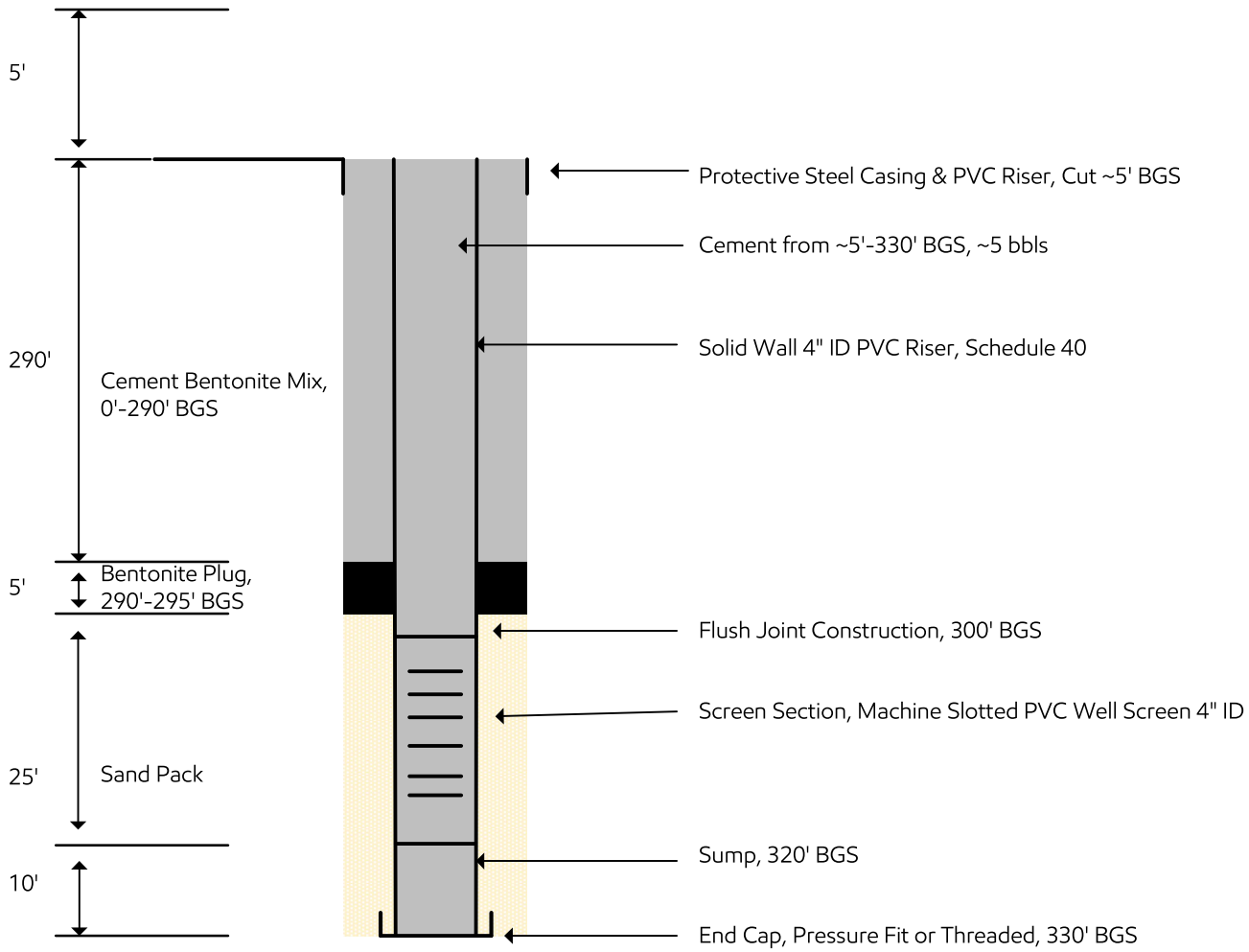
P&A Post Recomplete



CONFIDENTIAL BUSINESS INFORMATION

Rose USDW #1

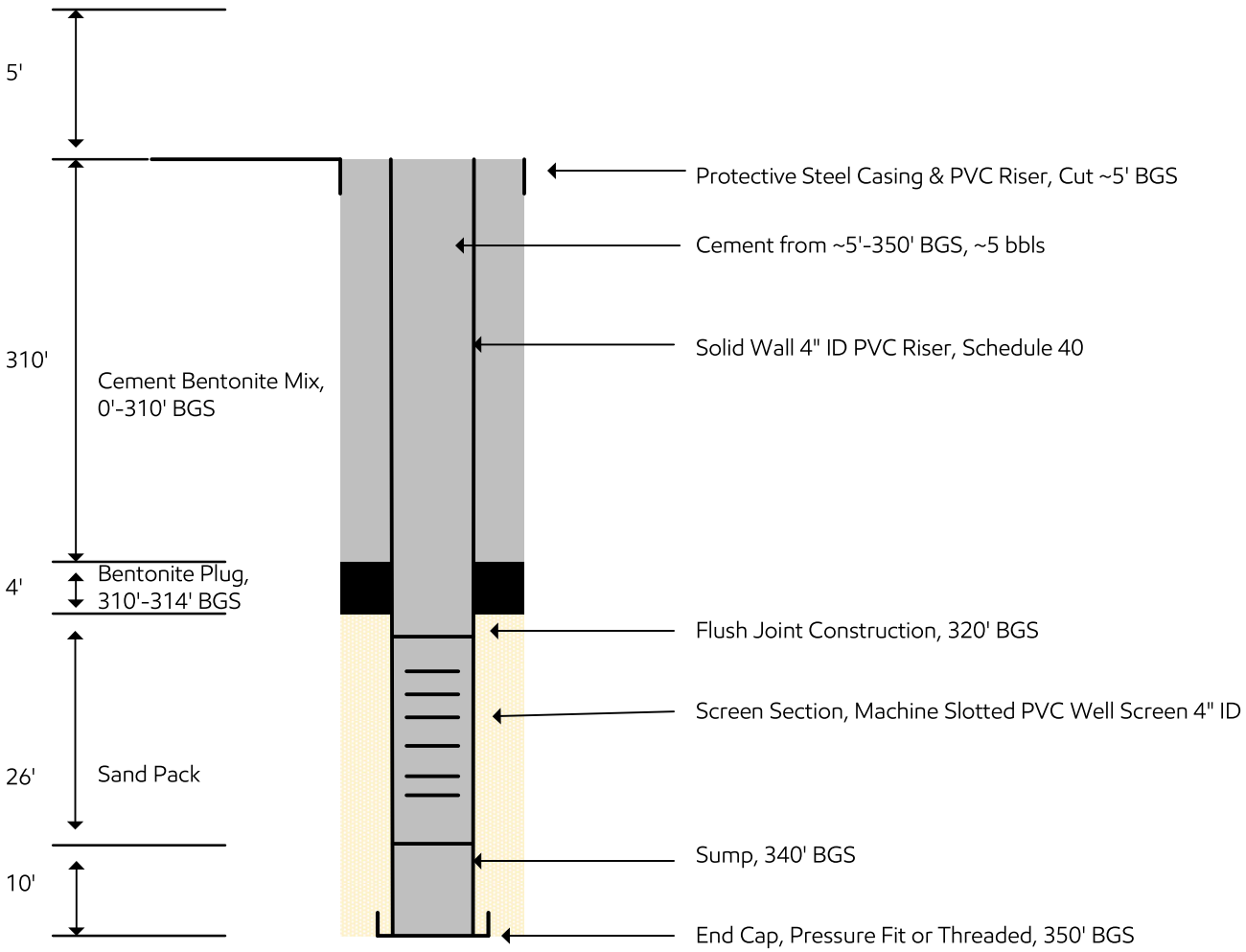
Proposed P&A



Ft BGS = Feet Below Ground Surface

CONFIDENTIAL BUSINESS INFORMATION

Rose USDW #2
Proposed P&A

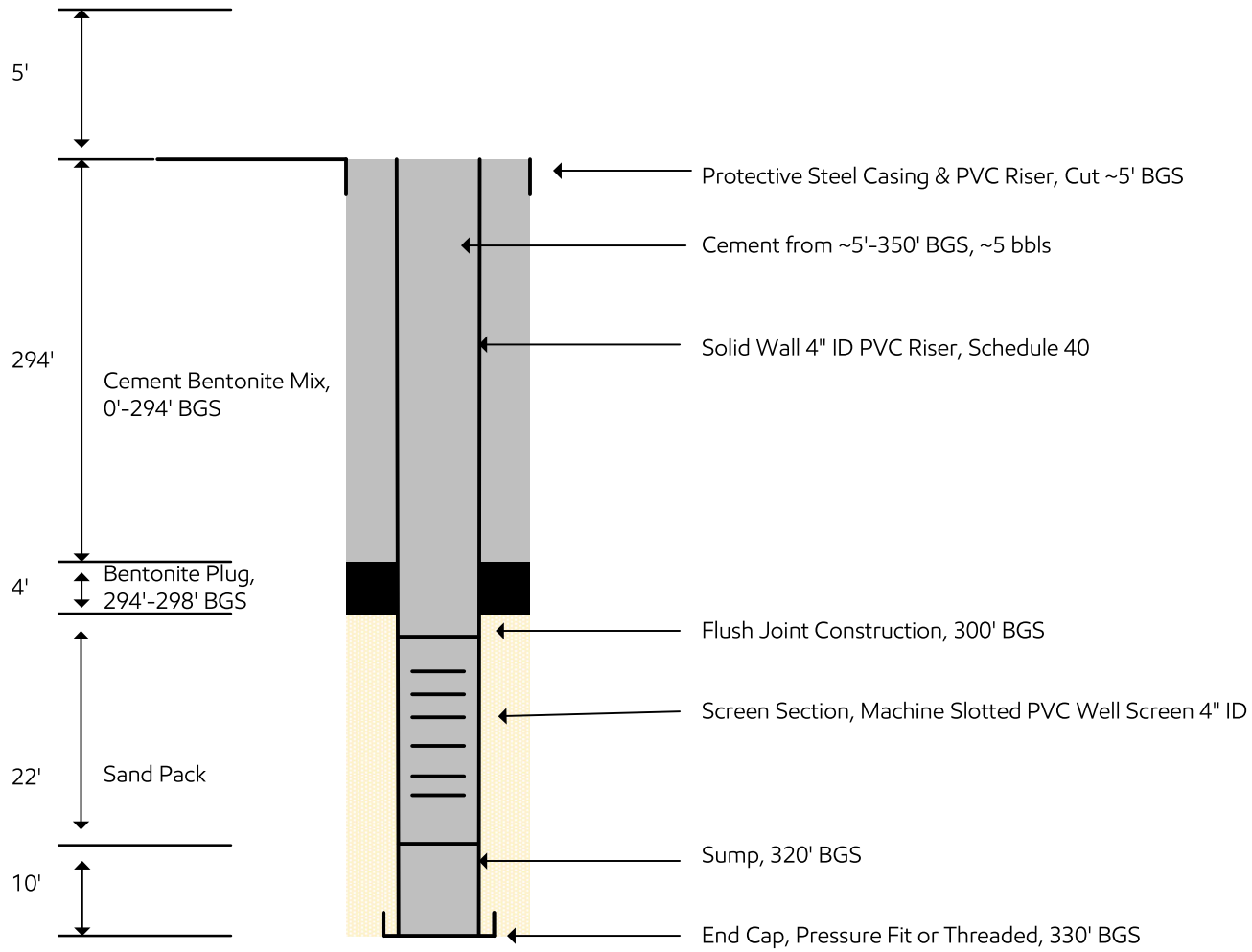


Ft BGS = Feet Below Ground Surface

CONFIDENTIAL BUSINESS INFORMATION

Rose USDW #3

Proposed P&A



Ft BGS = Feet Below Ground Surface

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Railroad Commission of Texas Attachment H

Emergency and Remedial Response Plan

Underground Injection Control – Class VI Permit Application for Rose CCS Project Injection Wells No. 01, No. 02, and No. 03

SECTION 8 – EMERGENCY AND REMEDIAL RESPONSE PLAN

Rose Carbon Capture and Storage Project

Jefferson County, Texas

ExxonMobil Low Carbon Solutions Onshore Storage LLC

May 2025

SECTION 8 – EMERGENCY AND REMEDIAL RESPONSE PLAN

TABLE OF CONTENTS

8.0 Emergency and Remedial Response Plan 5
8.1 Objectives 5
8.2 Overview of Risk Management Process 6
8.3 Identification of Resources/Infrastructure in Area of Review 8
8.4 Identification of Risk Scenarios of Interest 8
8.5 Use of Severity to Define Scope of Response Action 13
8.6 Response Plans for Risk Scenarios 13
8.6.1 Integrity of Injection Well Casing or Cement Seal 13
8.6.2 Integrity of Injection Well Casing or Cement Seal for Legacy Wells 15
8.6.3 Injection Well Monitoring Equipment Failure 16
8.6.4 Integrity of the UCCZ 18
8.6.5 Induced or Natural Seismic Event 20
8.7 Response Personnel and Equipment 21
8.8 Communications Plan and Emergency Notification Procedures 22
8.9 Flood Hazard Risk 22
8.10 Plan Review 22
8.11 Staff Training and Exercise Procedures 23

List of Tables

Table 8-1: Hypothetical Risk Scenarios for ERRP 8
Table 8-2: Degrees of Risk for Emergency Events 13
Table 8-3: Response Actions for Seismic Events 20
Table 8-4: Contact Information of ExxonMobil Emergency Authorities 21
Table 8-5: Emergency Services 21

List of Figures

Figure 8-1: Summary of the Risk Assessment Process for the Lifecycle of the Project. 7
Figure 8-2: Map of Resources and Infrastructure within AoR 11

Appendix G – Emergency and Remedial Response Plan Files

Appendix G-1: FEMA Flood Zone Hazards Map for Rose Project CCS Injection Wells No. 01 and 02

Appendix G-2: FEMA Flood Zone Hazards Map for Rose Project CCS Injection Well No. 03

Appendix G-3: Integrated Contingency Plan

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8.0 Emergency and Remedial Response Plan

ExxonMobil Low Carbon Solutions Onshore Storage LLC (ExxonMobil) is submitting this Underground Injection Control (UIC) Class VI Permit to Convert Application (Application) to the U.S. Environmental Protection Agency (EPA) for the Rose Carbon Capture and Storage Project (Project). ExxonMobil is undertaking the Project in Jefferson County, Texas to sequester a maximum of 5 million metric tonnes per annum of carbon dioxide (CO_2) using three injection wells over an injection period of up to 13 years. The predicted total CO_2 storage is 53 million metric tonnes. This Emergency and Remedial Response Plan (ERRP) is submitted in compliance with the requirements of the Code of Federal Regulations, Title 40, Section 146.94 [40 CFR 146.94]. Under 40 CFR 146.90(g), the actions described in the ERRP are to be implemented immediately to address an event where the movement of the injection fluid or formation fluid endangers underground sources of drinking water (USDW). ExxonMobil prepared this ERRP to provide both the scope of actions to be taken and the schedule under which the actions would be implemented.

ExxonMobil has already created a number of engineering design and planning safeguards to reduce the potential for the occurrence of an emergency and remedial response event. These steps are based on ExxonMobil's global experience and expertise with risk management in site selection, well drilling and completion, and reservoir operations. The risk management approach is evident in the preparation of sections of this UIC Application. Section 2 – Site Characterization describes how the geologic setting is favorable to safe CO_2 sequestration because of the favorable injection zone and confining zone characteristics that exist at the site. Section 3 – Area of Review and Corrective Action describes how the CO_2 plume and pressure front are predicted to be confined to the injection zone and how pressure will be managed to reduce the potential for leakage to USDWs. Two artificial penetrations through the confining zones will be remediated appropriately to safeguard USDWs within the Area of Review (AoR) before operations commence. Section 4 – Well Construction Plan and Operating Conditions describes how the well design process and operating controls for mechanical integrity and pressure control to maintain a high level of risk reduction for the Project. Lastly, Section 5 – Testing and Monitoring Plan, provides the data acquisition plan for tracking the CO_2 plume and brine pressure front to assess compliance with control and containment requirements.

The purpose of this section is to provide the elements of the risk management process undertaken for the Project so that the UIC Program Director can ultimately approve the remedial and response actions in advance. Once approved, ExxonMobil will be prepared to implement the actions necessary to facilitate and expedite response efforts for the possibility of a leak occurring from the injection zone. The ERRP will apply over the life of the Project, including throughout the post-injection site care period [40 CFR 146.94(a)].

8.1 Objectives

The ERRP identifies a set of hypothetical potential risk scenarios under which there may be an endangerment to USDWs and the actions to be taken to mitigate such risk. The objectives of the ERRP are aligned with the requirements of 40 CFR 146.94, which include:

- Identify potential risk scenarios and adverse events that could impact USDW in the AoR. The assessment focuses on those events that were found to have a combined probability and consequence that makes them more likely to have an impact than other factors.

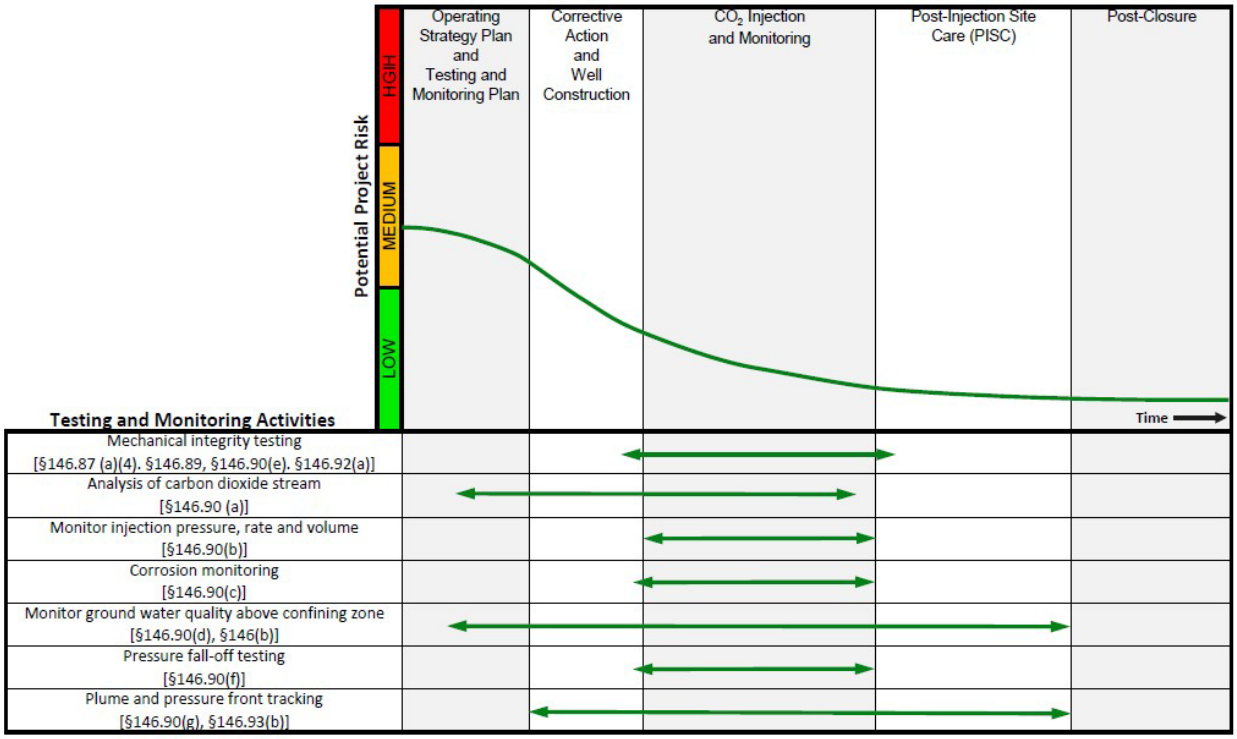
- Provide a description of the response actions necessary to reduce the potential consequences to USDWs. For each scenario considered to be of material concern, describe the anticipated severity of the event, the phase during which the event could occur (i.e., construction, injection and/or post-injection phases), the proposed avoidance measures, what methods will detect the loss of containment or control, the response actions, notification requirements, and personnel and equipment that would be employed to mitigate the risk; and
- Provide contact information for response personnel, a communications plan, and a description of staff training and exercise procedures.

8.2 Overview of Risk Management Process

ExxonMobil took the findings from the site characterization, AoR, and corrective action sections of the Application and identified hypothetical risk scenarios that could pose a potential threat to USDWs in the event of occurrence. ExxonMobil's risk assessment process was used to estimate the probability and consequence of each risk scenario based on the experience and judgment of the risk subject matter experts for the Project. The list was sorted from the most probable and consequential risk scenario to the least probable and consequential scenarios so that the critical scenarios and the response actions to be undertaken could be identified.

As shown in Figure 8-1 below, the maximum anticipated risk level for the Project, including the combination of the selected risk scenarios for the ERRP, is within the medium risk category. As mentioned above, several risk management steps were already taken to address the potential for CO2 or brine migration to occur. ExxonMobil's Integrated Contingency Plan is provided in Appendix G.

Figure 8-1: Summary of the Risk Assessment Process for the Lifecycle of the Project.



As shown in Figure 8-1, potential risk is at its maximum during the initial investigation and characterization of the Project site because artificial penetrations, fractures, and faults were identified in the confining zone. The potential for these features in the upper composite confining zone (UCCZ) to become a migration pathway for a release of CO2 were mitigated by planning for the following actions described in the Application:

- Artificial penetrations through the UCCZ will be re-abandoned to restore containment integrity at each artificial penetration location where the potential for elevated crossflow risk was identified;
- The maximum injection pressure will be maintained below the potential hydraulic fracturing or activation pressure of a natural fault to mitigate the potential for CO2/brine leaks through seal(s) due to mechanical fracturing or migration of CO2/brine along faults;
- State-of-the-art injection well and monitoring well construction methods and mechanical integrity testing (MIT) will be employed to reduce the potential for the loss of internal or external mechanical integrity, which could potentially release CO2 to USDWs or the atmosphere;
- The composition of the injectate stream will be managed and monitored such that unexpected reactions with the potential to impact containment are mitigated;
- CO2 plume and pressure front tracking will be undertaken using a combination of direct and indirect measurements and reported semiannual for review and consideration in AoR reevaluations, at a minimum frequency of every five years; and

- The predictive reservoir modeling will be calibrated and verified using monitoring data to identify the potential for the CO2 plume and pressure front to encounter artificial penetrations that have the potential for CO2 or brine crossflow from the injection intervals to the lowermost USDW and take preventive measures before such an event could occur.

8.3 Identification of Resources/Infrastructure in Area of Review

Figure 8-2 provides an illustration of the land use within and surrounding the AoR. As shown, the land use and resources/infrastructure are primarily related to oil and gas exploration and production, agricultural crop production, and undeveloped rural acreage with some residential development. The infrastructure development is primarily in the form of county roads and power transmission lines to service the few developed areas.

The water resources in the vicinity of the Project that may be affected by a CO2 or brine leakage event that could endanger USDW include water wells completed in the Chicot and Evangeline Aquifers Claimed as PBI [redacted]

A total of two water wells were reported to be present within the AoR. A plugged/destroyed water well (State Well Number 6162901) was reportedly located 1.5 miles east of Injection Well No. 01. Another in-use water well (State Well Number 645970) is collocated at the Bead Farm Co. #1 well pad.

As shown on Figure 8-2, one water conveyance canal was identified as Green Pond Gully. Bayou Din is also located along the southern limit of the AoR.

A total of two oil and gas wells were identified within the AoR, and both were reported as plugged and abandoned in the available records from the Railroad Commission of Texas. The stratigraphic well drilled by ExxonMobil is also located within the AoR. Beyond the AoR, the City of Beaumont, Texas, is located more than five miles northeast of the AoR boundary and the Town of China, Texas, is located approximately one mile northwest of the AoR boundary.

8.4 Identification of Risk Scenarios of Interest

Through the risk assessment process, the following list of scenarios were considered of sufficient probability and consequence to warrant development of response action plans. Other scenarios were considered but were found to have relatively low probability and consequence factors and thus do not warrant further consideration at this time. As shown below, a total of nine risk scenarios were considered for the ERRP.

Table 8-1: Hypothetical Risk Scenarios for ERRP

CO2 and Brine Containment or Control Feature of Interest	Hypothetical Release Mechanism associated with Risk Scenario
1. Mechanical Integrity of Injection Well Casing or Cement Seal	1a. CO2 release arising from injection well cement degradation or annular space defects in cement completion.
	1b. CO2 or brine leaks to USDW at injection well because of cement degradation or annular space defects in cement completion.
	2a. CO2/brine crossflow to USDW at legacy well in AoR with lack of casing or cement integrity issues.

CO2 and Brine Containment or Control Feature of Interest	Hypothetical Release Mechanism associated with Risk Scenario
2. Artificial Penetrations of UCCZ	2b. CO2 release detected at a legacy well because of loss of casing or cement mechanical integrity, implying a release has occurred that may endanger USDWs.
3. Mechanical Integrity of Operating Equipment	Pressure gauge malfunction or shut-off valve malfunction results in an uncontrolled pressure situation and CO2/brine crossflow to USDW by fault or fracture activation or well casing and/or cement failure in the vicinity of the production casing perforations.
4. Natural Features Affecting Sealing Properties of UCCZ	4a. CO2/brine leaks through an existing fault or fracture through UCCZ within the AoR impacting a USDW.
	4b. Lateral egression of CO2/brine below primary seal, beyond AoR, and release to USDW via unknown fracture or fault.
	4c. Induced or natural seismic event creates or enhances the transmissivity of faults or fractures in the UCCZ, resulting in an increased potential for CO2 or brine migration along the pathways toward USDWs.
	4d. Induced or natural seismic event occurs creates or enhances mechanical integrity deficiency in the cement and plug of an artificial penetration, resulting in an increased potential for CO2 or brine migration along the pathways toward USDWs.

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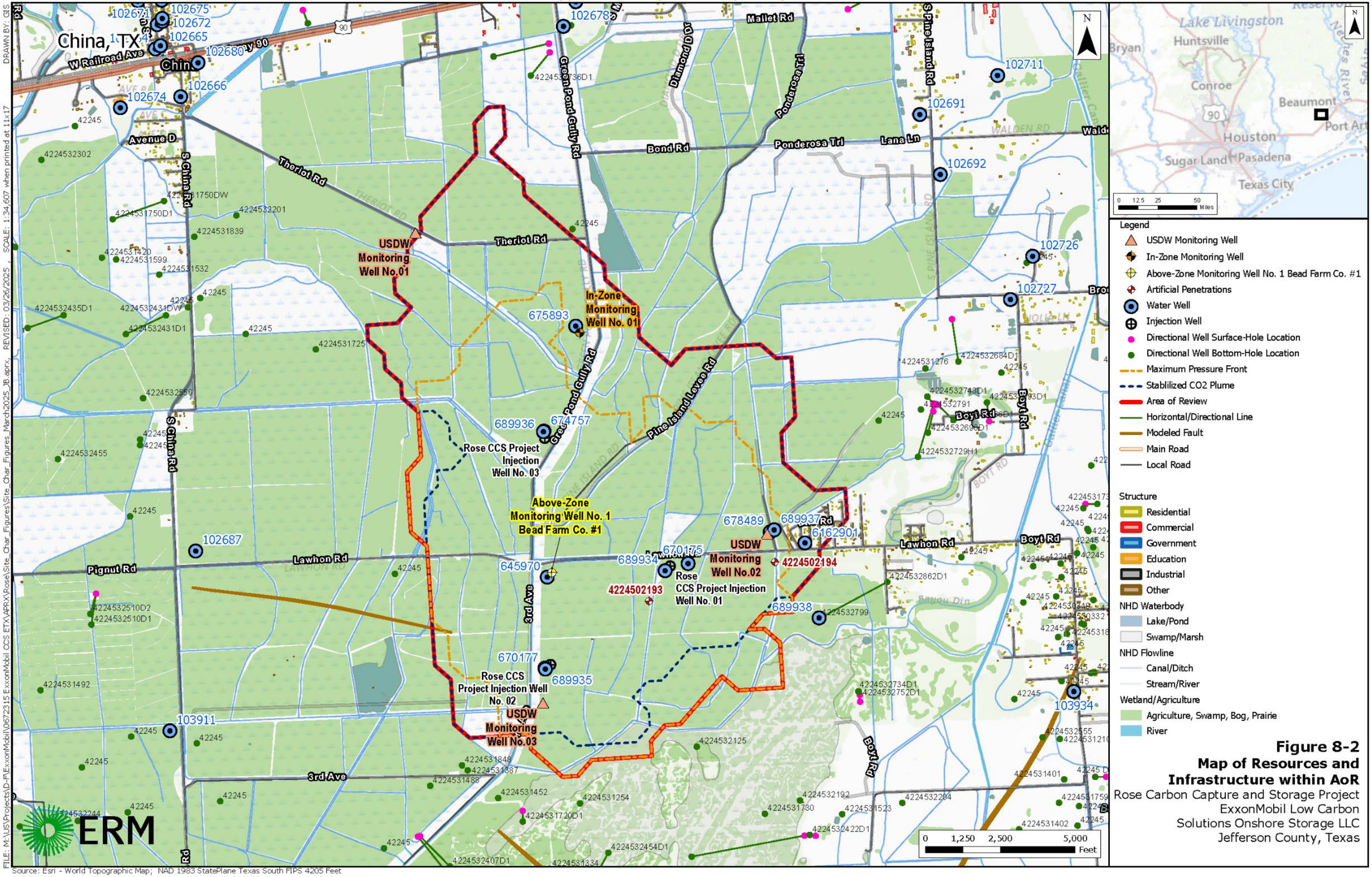


Figure 8-2
Map of Resources and Infrastructure within AoR
Rose Carbon Capture and Storage Project
ExxonMobil Low Carbon Solutions Onshore Storage LLC
Jefferson County, Texas

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8.5 Use of Severity to Define Scope of Response Action

Response actions were developed for each of the nine hypothetical risk scenarios identified for the ERRP. As listed in Table 8-2, the severity of the risk scenario was fit to a three-tiered categorization of emergency conditions. In addition, the response actions envision a stage-gate process where the information regarding the degree of severity for the emergency condition is evaluated to align the appropriate level of response to bring about mitigation of the emergency event.

Table 8-2: Degrees of Risk for Emergency Events

Emergency Condition	Definition
Major emergency	Events pose immediate substantial risk to USDWs and indirectly from USDW endangerment to resources or infrastructure. Emergency actions involving local authorities (evacuation or isolation of areas) must be initiated.
Serious emergency	Event poses potential serious (or significant) near term risk to USDW and indirectly from USDW endangerment to resource or infrastructure if conditions worsen or no response actions taken.
Minor emergency	Event poses no immediate risk to USDW, resources, or infrastructure.

In accordance with 40 CFR 146.94(b), for the events below, if the injected CO2 stream and associated brine pressure front may cause an endangerment to a USDW, each set of response actions start with immediately ceasing injection and notifying the UIC Program Director within 24 hours of the confirmation of a release event and the intention to implement the appropriate response action in the ERRP.

8.6 Response Plans for Risk Scenarios

The following response action details are provided to have a pre-approved set of actions in place should measurements collected pursuant to the Section 5 – Testing and Monitoring Plan indicate a malfunction or deviation from permitted limits.

8.6.1 Integrity of Injection Well Casing or Cement Seal

Two hypothetical release mechanisms were identified for injection wells that could possibly result in a release of CO2 and/or brine to USDWs. CO2 could be detected at an injection well, implying that internal or external mechanical integrity of an injection well may have been compromised and released CO2 to USDWs. CO2 or brine could also be released to USDW at the injection well because of subsurface cement degradation or annular space defects in cement completion.

Hypothetical Release Mechanism: mechanical integrity failure at injection well resulting in release of CO2 and/or CO2 and/or brine to USDWs.
Severity:
• Minor: A malfunction in the monitoring equipment created a false positive indication of a release when in fact none occurred. Alternatively, detection monitoring equipment at the wellhead facility detects the release and the well was shut-in, representing a minor CO2 release.
• Serious: A failed MIT identified a release mechanism, but detection of brine or CO2 was not apparent in the detection monitoring system.
• Major: A detection of CO2 and/or brine to USDW within the AoR prior to confirming the source of the injection well release point.

Timing of event: Injection and/or post-injection phase.
Avoidance measures:
• Proper wellbore design, including the use of corrosion resistant cement and CO2 compatible metallurgy of the casing and tubing, will be used for construction of the injection well.
• Routine inspection of the well casing and cement integrity to identify potential corrosion or deficiencies.
Detection methods:
• Deficiency identified during continuous pressure and temperature monitoring, pressure falloff tests, and annulus pressure tests.
• Wellhead pressure exceeds the maximum pressure specified in the permit.
• Annulus pressure indicates a loss of external or internal integrity/containment.
• CO2 plume and pressure tracking above UCCZ indicates a change in conditions.
• Fluid samples from above the UCCZ and USDW indicate a statistically significant change in conditions.
• MIT identifies a potential issue in the integrity of the well.
• Well casing and cement bond logs conducted during shut-ins to assess loss decay or corrosion more than acceptable limits.
Response actions:
• Notify ExxonMobil Site Manager and site personnel.
○ The Site Manager will respond to the event for an initial assessment to determine severity of event.
• Minor Event:
○ Close the wellhead valve to shut-in well. Perform investigation. If the investigation shows a false positive, reopen the valve and continue operations.
○ If there is a loss of containment, vent CO2 from surface facilities.
○ Monitor well and annulus pressures.
○ Collect fluid samples from detection monitoring well network to compare water quality and geochemical parameter concentrations with baseline conditions.
○ If there is a loss of containment, implement mitigation strategy for remedial actions with consultation of UIC Program Director.
• Serious or Major Event:
○ Close wellhead valve to shut-in well.
○ If appropriate, vent CO2 from surface facilities.
○ Engage with ExxonMobil emergency response team to ensure that any necessary and appropriate notifications to local authorities are made and if additional emergency actions are necessary.
○ Monitor well head for CO2 and casing and annulus pressures.
○ Identify and implement remedial actions to repair damage to well. Repairs will be conducted with UIC Program Director approval and guidance.
○ Collect fluid samples from detection monitoring wells and compare results with baseline and acceptable health-based concentration thresholds. If exceedances, consultation of the UIC Program Direct on expansion of detection monitoring program and need for interim response actions.
○ Implement additional groundwater monitoring as required by UIC Program Director to define extent and magnitude of release.
○ If health-based concentrations are exceeded, notify UIC Program Director of exceedances for determination of the need for USDW remediation.

○ If health-based concentrations are exceeded in the vicinity of water wells, coordinate with the UIC Program Director to provide an alternate potable water supply.
○ Continue USDW remediation program and compliance monitoring based on UIC Program Director requirements until a determination of no further action is obtained from UIC Program Director.
○ Once a no further action determination has been obtained from UIC Program Director, conduct MIT for confirmatory indications that the well integrity has been restored.
○ With the UIC Program Director's approval, develop a plan for re-initiating the injection well.
○ Demonstrate mechanical integrity.
○ Seek permit authorization from UIC Program Director for resuming injection.
Personnel: Emergency response personnel, geotechnical professionals, and environmental or water-treatment professionals.
Equipment: Drill rig, logging equipment for cement or casing materials, MIT equipment, environmental media sampling equipment, well plugging equipment.

8.6.2 Integrity of Injection Well Casing or Cement Seal for Legacy Wells

Consistent with the potential for CO2 or brine to migrate to USDW at an injection well, artificial penetrations of the UCCZ from legacy oil and gas activities may provide a similar risk scenario. Legacy wells were identified within the AoR that penetrate the UCCZ. The plugging of legacy wells will be completed as a corrective action prior to operation. The objective of this risk scenario is to provide the response actions in the event that unknown legacy wells are found and suspected of CO2 and/or brine leakage to USDWs as a result of potential casing or cement integrity issues in the AoR.

Hypothetical Release Mechanism: CO2 and/or brine migrate to USDW at an artificial penetration as detected within the AoR.
Severity:
• Minor: direct and indirect CO2 plume and pressure front tracking indicate that the legacy well is in the path of migration with the potential to create elevated pressures and a potential for corrosive environment to be created at the well location.
• Serious: direct and indirect CO2 plume and pressure front tracking indicate that the legacy well has been impacted with minor increases of CO2 and/or brine pressures and corrosive fluids.
• Major: direct and indirect CO2 plume and pressure front tracking indicate that the legacy well has been impacted by pressures that could create a crossflow potential between the injection zone and USDW if a conduit were present.
Timing of event: Injection and/or post-injection phase.
Avoidance measures:
• Compliance with CO2 plume and brine tracking systems.
• Plume model updates to predict pressure front arrival times at legacy well locations and adjust timing of phased-corrective action.
Detection methods:
• CO2 plume and pressure tracking indicates impact is likely.

• Fluid samples from above the UCCZ and USDW indicate a statistically significant change in conditions.
• Well re-entry to collect casing and cement bond logs to assess integrity and well completion materials.
Response actions:
For minor severity: enhancing CO2 plume and pressure front tracking data collection program and update plume model calibration with additional data points, as appropriate. Confirm migration pathways and adjust operating conditions to reduce the potential to impact legacy well and increase data monitoring frequency to confirm potential impacts.
For major and serious events:
• Notify the UIC Program Director within 24 hours of the emergency event, per 40 CFR 146.91(c).
• Determine the severity of the event, based on the information available, within 24 hours of notification.
• Initiate shutdown plan in accordance with well permit.
• Notify emergency contacts.
• Conduct testing and monitoring at legacy wellhead to assess mechanical integrity and potential points of mechanical failure.
• Assess location and degree of CO2 movement, as described in Section 5 – Testing and Monitoring Plan.
• If the presence of CO2 or brine crossflow is likely, develop (in consultation with the UIC Program Director) a case-specific work plan to install additional groundwater monitoring points near the affected legacy well to assess potential for migration above the UCCZ and into USDW, delineate impact if found.
• Compare fluid sample concentrations with risk-based human health thresholds to identify whether an exceedance of acceptable limits has occurred.
• If so, prepare a remedial plan for UIC Program Director review and approval.
• Recomplete legacy well plugging to restore the integrity of cement plugs at UCCZ and base of USDW.
Personnel: Emergency response personnel, geotechnical professionals, and environmental or water-treatment professionals.
Equipment: Drill rig, logging equipment for cement or casing materials, MIT equipment, environmental media sampling equipment, well plugging equipment.

8.6.3 Injection Well Monitoring Equipment Failure

Loss of mechanical integrity of well pressure equipment may occur during operation of the injection wells. A pressure gauge malfunction or other similar equipment could create a shut-off valve malfunction and result in an uncontrolled pressure situation and CO2/brine crossflow to USDW by fault or fracture activation or well casing and/or cement failure in the vicinity of the production casing perforations.

Hypothetical Release Mechanism: Loss of mechanical integrity of well pressure equipment could create a shut-off valve malfunction and result in an uncontrolled pressure situation and CO2/brine crossflow to USDW by fault or fracture activation or by well casing and/or cement failure in the vicinity of the production casing perforations.
Severity:

• Minor: Failure of monitoring equipment to document compliance with permit operating conditions, but subsequent evaluation of available information demonstrates that well integrity has not been impacted.
• Serious/Major: Failure of monitoring equipment to document permit operating conditions and subsequent evaluation of the data documents non-compliance with permitted operating conditions and potential for well integrity impacts.
Timing of event: Injection phase and/or post-injection phase.
Avoidance measures:
• Routine equipment inspection and maintenance to identify potential integrity issues that may be a result of equipment failure.
• Routine inspections and calibration of monitoring equipment in accordance with manufacturers recommended procedures.
• Consistent fluid sampling throughout the detection monitoring well network to detect a release above the UCCZ.
• Redundant pressure and temperature measurements in the injection zones to confirm compliance with permitted operating conditions.
Detection methods:
• Anomalies in pressure and rate monitoring, pressure falloff tests, and annulus pressure tests.
Response actions:
• Notify ExxonMobil Site Manager and site personnel.
○ The Site Manager will respond to the event for an initial assessment to determine severity of event.
• Notify the UIC Director within 24 hours per 40 CFR 146.91(c).
• Determine the cause and severity of failure to determine if the CO2 stream or formation fluids may have been released into any unauthorized zone.
• For a Minor emergency (sensor or monitoring failure):
○ Conduct assessment to determine whether there has been a loss of mechanical integrity.
○ If there has been a loss of mechanical integrity, initiate shutdown plan and refer to Major or Serious emergency guidelines.
○ Evaluate the cause of failure, and mitigate if necessary (i.e., repair equipment).
○ Contact security to restrict access to the storage site.
○ Vent CO2 from surface facilities.
○ Continuously monitor well pressure, temperature, and annulus pressure to assess integrity loss and determine the root cause of failure.
○ Confirm well integrity prior to restarting injection and upon approval of the UIC Program Director.
• For a Major or Serious emergency (failure of sensors that will require shutdown of well to repair, requires extended repair time [i.e., >48 hours] and/or well intervention to remediate):
• Contact security to restrict access to the storage site.
• Communicate with ExxonMobil personnel and local authorities to isolate the area and initiate evacuation plans, if necessary.
• Initiate shutdown plan and shut-in injection well and vent CO2 from surface facilities.
• Manually collect surface tubing pressure and annulus pressure as needed to monitor the well until monitoring equipment is repaired.
• Collect fluid samples from detection monitoring wells and compare results with baseline and acceptable health-based concentration thresholds. If exceedances, consultation of the UIC

Program Direct on expansion of detection monitoring program and need for interim response actions.
• Implement additional groundwater monitoring as required by UIC Program Director to define extent and magnitude of release.
• If health-based concentrations are exceeded, notify UIC Program Director of exceedances for determination of the need for USDW remediation.
• If health-based concentrations are exceeded in the vicinity of water wells, coordinate with the UIC Program Director to provide an alternate potable water supply.
• Continue USDW remediation program and compliance monitoring based on UIC Program Director requirements until a determination of no further action is obtained from UIC Program Director.
• Once a no further action determination has been obtained from UIC Program Director, conduct MIT for confirmatory indications that the well integrity has been restored.
• With the UIC Program Director's approval, develop a plan for re-initiating the injection well.
• Demonstrate mechanical integrity.
• Seek permit authorization from UIC Program Director to resume injection under permit authorization.
Personnel: Emergency response personnel, geotechnical professionals, and environmental or water-treatment professionals.
Equipment: Drill rig, logging equipment, cement or casing materials, and air and water testing equipment.

8.6.4 Integrity of the UCCZ

Several potential risk scenarios were considered that involve a hypothetical release through naturally occurring faults and fractures or penetration of the UCCZ, creating a migration pathway toward USDW. For example, CO2 could hypothetically leak through natural faults or fractures in the UCCZ within or beyond the AoR and impact USDWs. CO2 or brine could hypothetically migrate horizontally to artificial penetrations within or beyond the AoR that are not sealed at the UCCZ and result in a release to USDWs. Response actions were developed to address such scenarios in the event that they occur.

The primary limiting factor for the magnitude of the release for these scenarios was based on the site characteristics described in Section 2 – Site Characterization. CO2 and brine leaks through shales due to mechanical fracturing were not considered a material concern for the Project because of the physical nature of the confining shale materials. Above the UCCZ is approximately 3,000 feet of saturated shale, mudstone, and sand. Such a release would likely be detected by the detection monitoring program for groundwater prior to release to the surface. Therefore, ambient air monitoring in the AoR was contingent on the confirmed release of CO2 to USDW at sufficient concentrations to migrate to the surface at levels above health-based thresholds.

The following response actions were developed to mitigate the potential for releases through the UCCZ, which were assumed to occur during injection operations and/or post-injection site care.

Hypothetical Release Mechanism: release through naturally occurring faults and fractures or penetration of the UCCZ, creating a migration pathway toward USDWs.
Severity:

• Minor: direct and indirect CO2 plume and pressure front tracking indicate that a fault or fracture is in the path of migration with the potential to create elevated pressures sufficient to cause crossflow above the UCCZ.
• Serious/Major: direct and indirect CO2 plume and pressure front tracking indicate that a fault or fracture has been impacted by pressures that will likely create a crossflow potential between the injection zone and USDW. For faults and fractures, the threshold pressure is based on fault-slip potential (Section 2.11).
Timing of event: Injection and/or post-injection phase.
Avoidance measures:
• Compliance with CO2 plume and brine tracking systems.
• Plume model updates to predict pressure front arrival times at fault and fracture locations and adjust timing of phased detection monitoring programs elements.
Detection methods:
• CO2 plume and pressure tracking indicates impact is likely.
• Fluid samples from above the UCCZ and USDW indicate a statistically significant change in conditions.
• Third-party direct or indirect data confirm impact to fault, fracture, or artificial penetration outside of AoR.
Response actions:
• If the detection monitoring program outline in the Section 5 – Testing and Monitoring Plan or similar third-party monitoring program detects a potential release of CO2 or brine through the UCCZ to the first water-bearing zone above the UCCZ or USDW, notify the UIC Program Director within 24 hours of the emergency event, per 40 CFR 146.91(c).
• Determine the severity of the event, based on the information available, within 24 hours of notification.
• For all emergencies (Major, Serious, or Minor):
○ Initiate shutdown plan.
○ Notify emergency contacts.
○ Implement an ambient air monitoring program in the vicinity of the CO2 plume in groundwater and the release mechanism.
○ Conduct a Vertical Seismic Profile to assess location and degree of CO2 movement, as described in Section 5 – Testing and Monitoring Plan.
○ If the presence of CO2 above the UCCZ is likely, develop (in consultation with the UIC Program Director) a case-specific work plan to install additional groundwater monitoring points to assess the extent of CO2 and brine migration above the UCCZ and into USDW.
○ Compare fluid sample concentrations with risk-based human health thresholds to identify whether or not an exceedance of acceptable limits has occurred in groundwater and evaluate the potential for cross-media transport to other environmental media.
○ If unacceptable concentrations are apparent, prepare remedial plan for UIC Program Director review and approval.
○ Use the water well survey provided in Section 5 – Testing and Monitoring Plan to determine if potable water wells are located in the vicinity of the affected groundwater that could potentially become impacted from the release.
○ If so, coordinate with the UIC Program Director to provide potable water to water well owners.
○ Continue remedial efforts to achieve a no further action determination from the UIC Program Director.

○ Seek permit authorization from UIC Program Director to resume injection under permit authorization.
Personnel: Emergency response personnel, geotechnical professionals, and environmental or water-treatment professionals.
Equipment: Drill rig, logging equipment, cement or casing materials, and air and water testing equipment.

8.6.5 Induced or Natural Seismic Event

Natural or induced seismic events of sufficient magnitude to create damage were found to be improbable for the site location and under permitted operating conditions that are below the critical fracture pressure. In the chance that such seismic conditions occurred, the consequences could be of significance regarding the integrity of the artificial penetrations of the UCCZ and the natural faults and fractures. Therefore, the following response actions were developed to gather information regarding the potential for CO2 and brine confinement issues to arise under such events.

ExxonMobil will rely upon U.S. Geologic Survey seismic monitoring data for the site and surrounding area to provide information on a seismic event, should one occur. If a review of the data indicates that the event was more likely than not associated with the injection zone in or near the AoR, ExxonMobil will notify the UIC Program Director of the intent to install a site-specific network of seismic stations to provide additional information with the regional seismic data. The details of the site-specific seismic monitoring system will be provided to the UIC Program Director as a modification of Section 5 – Testing and Monitoring Plan. Table 8-3 provides the response actions depending on severity of the seismic event.

Table 8-3: Response Actions for Seismic Events

Threshold Condition[1]	Response Action for Epicenter Within a 100-Square Mile Area (5.6-Mile Radius) of an Injection Well[2]
Seismic event above M2.0 and below M3.0	• Monitor well pressure, temperature, and annulus pressure to assess if well operation within permitted status and assess the potential for mechanical integrity issues to have occurred from the seismic event. Otherwise, continue normal operation within permitted levels and review seismic data. • Reporting findings to the UIC Program Director as appropriate
Seismic event >M3.0	• Communicate with facility personnel and local authorities about the operating condition of the injection wells and initiate correspondence with other nearby operators. • Monitor well pressure, temperature, and annulus pressure to verify well operation within permitted status and assess the potential for mechanical integrity issues to have occurred from the seismic event. • If evidence of mechanical integrity failure, cease injection, notify the UIC Program Director within 24 hours, and, if the loss of mechanical integrity may endanger the USDW, implement the emergency and remedial response plan approved by the UIC Program Director.

Threshold Condition[1]	Response Action for Epicenter Within a 100-Square Mile Area (5.6-Mile Radius) of an Injection Well[2]
	• Collect fluid samples from above-zone monitoring well and USDW monitoring wells. • Review seismic and operational data to identify potential source areas for a release above the UCCZ. • Within 30 days of the triggering seismic event, determine causality and if deemed causally related propose appropriate corrective measures to our operations. • Report findings to the UIC Program Director and implement corrective measures if warranted. • Operations will resume upon UIC Program Director concurrence that necessary remedial or corrective measures have been taken such that the risk to USDW is in compliance with EPA standards for protection of human health and the environment.
[1] Specified magnitudes determined by local or U.S. Geological Survey seismic monitoring stations or reported by the U.S. Geological Survey National Earthquake Information Center using the national seismic network. [2] Based on Texas Railroad Commission Seismicity Review (RRC, 2024)	

8.7 Response Personnel and Equipment

Site personnel, Project personnel, and local authorities will be relied upon to implement this ERRP and will be dispatched in the case of an emergency. In the event of an emergency, appropriate city, county, and state emergency responders and agencies may be notified based on severity of the risk. Contact information for ExxonMobil Emergency Authorities and state and local emergency services are outlined in Table 8-4 and Table 8-5, respectively.

A site-specific emergency contact list will be developed and maintained during the life of the Project. ExxonMobil will provide the current site-specific emergency contact list to the UIC Program Director.

Table 8-4: Contact Information of ExxonMobil Emergency Authorities

Name	Title	Telephone Number
Claimed as PBI	Vice President	Claimed as PBI
	Emergency Preparedness & Response Advisor	
	Public & Government Affairs Advisor	

Table 8-5: Emergency Services

Agency	Telephone Number
Beaumont Fire and Rescue Station 1	911 or (409) 880-3901
Jefferson County Sheriff	911 or (409) 835-8411
Jefferson County Public Health Unit #1	(409) 835-8530
Jefferson County Office of Emergency Management	(409) 835-8757
Texas Division of Emergency Management	(512) 424-2208
Texas Department of Public Safety	(512) 424-2000
State of Texas Spill-Reporting Hotline	1-800-832-8224
Texas Parks and Wildlife Department	(512) 389-4800

Agency	Telephone Number
EPA Region 6	800-887-6063 or 214-665-2760
EPA Class VI Contact – Brandon Maples	214-665-7252
Texas Department of Natural Resources	(512) 389-4800
Jefferson County Local Emergency Planning Committee	(409) 835-8757
National Response Center	1-800-424-8802
State of Texas Spill-Reporting Hotline	1-800-832-8224
EPA National Response Center (24 hours)	(800) 424-8802

Necessary equipment for emergency and remedial response may vary depending on the event. Generally, no specialized equipment will be required for response actions (such as cessation of injection, well shut-in, and evacuation). If specialized equipment (such as a drilling rig or logging equipment) is required, ExxonMobil will be responsible for its procurement.

8.8 Communications Plan and Emergency Notification Procedures

As appropriate, ExxonMobil will communicate to the relevant public authorities about an event that may require emergency response so that the public understands the emergency event and if there are any environmental, health, or safety concerns. Based on the emergency event, ExxonMobil will determine the appropriate information, timing, and communication method for the event. This information may include potential impact of the event on drinking water or the severity of the event, actions taken or planned to address the event, and other information needed to protect the public during the event.

If required, ExxonMobil will also communicate with other entities who may need to be informed about or act in response to the event. These may include local water purveyors or operators, CO2 suppliers, pipeline operators, oil and gas operators, landowners, and other departments or authorities as guided by the UIC Program Director.

8.9 Flood Hazard Risk

Injection Wells No. 01, No. 02, and No. 03 and the surrounding area are designated as Federal Emergency Management Agency flood hazard zone X (unshaded). Flood hazard zone “X” (unshaded) corresponds to areas determined to be outside of the 500-year floodplain. This zone is an area of minimal flood hazard, which is higher than the elevation of the 0.2-percent-annual-chance flood. The well locations and Federal Emergency Management Agency flood zones are shown in Appendix G.

8.10 Plan Review

The UIC Program Director will evaluate this proposed ERRP to verify that ERRP meets the requirements of 40 CFR 146.94(a) and that the plan accounts for all site-specific conditions. The approved ERRP is enforceable, whether or not it is a condition of the permit, because the plan itself and UIC Program Director’s approval are required by the Class VI Rule [40 CFR 146.93(a)].

This ERRP shall be reviewed:

- At least once every five years following its approval by the permitting agency [40 CFR 146.94(d)].
- Within one year of any AoR reevaluation [40 CFR 146.94(d)(1)].

- Following any significant changes to the facility, such as addition of injection or monitoring wells, on a schedule determined by the Director [40 CFR 146.94(d)(2)]; or
- When required by the Director [40 CFR 146.94(d)(3)].

If the review indicates that no amendments to the ERRP are necessary, ExxonMobil will provide the permitting agency with the documentation supporting the “no amendment necessary” determination. If the review indicates that amendments to the ERRP are necessary, amendments shall be made and submitted to the permitting agency within 30 days following an event that initiates the ERRP review procedure.

The amended plan must be approved by the UIC Program Director and would then be incorporated into the Class VI Permit. If significant changes to the plan are needed, the UIC Program Director may need to modify the permit. A permit modification under 40 CFR 144.39 would require notification of the public and an opportunity for comment. Minor changes to the plan, as defined under 40 CFR 144.41, do not require a permit modification or a public process under 40 CFR Part 124.

8.11 Staff Training and Exercise Procedures

Personnel will be trained in their duties and responsibilities related to these facilities. Emergency Response Drills will be conducted annually via simulated onsite or table-top scenarios. All plant personnel, visitors, and contractors must complete a plant overview orientation before entering the facilities. ExxonMobil will coordinate with local mutual aid emergency responders over the potential hazards and response scenarios of the site.

Trainings that have and will be provided include topics such as characteristics of carbon dioxide, oxygen displacement, leak detection and identification, emergency response, and isolation and incident management. Specific trainings to be provided could include:

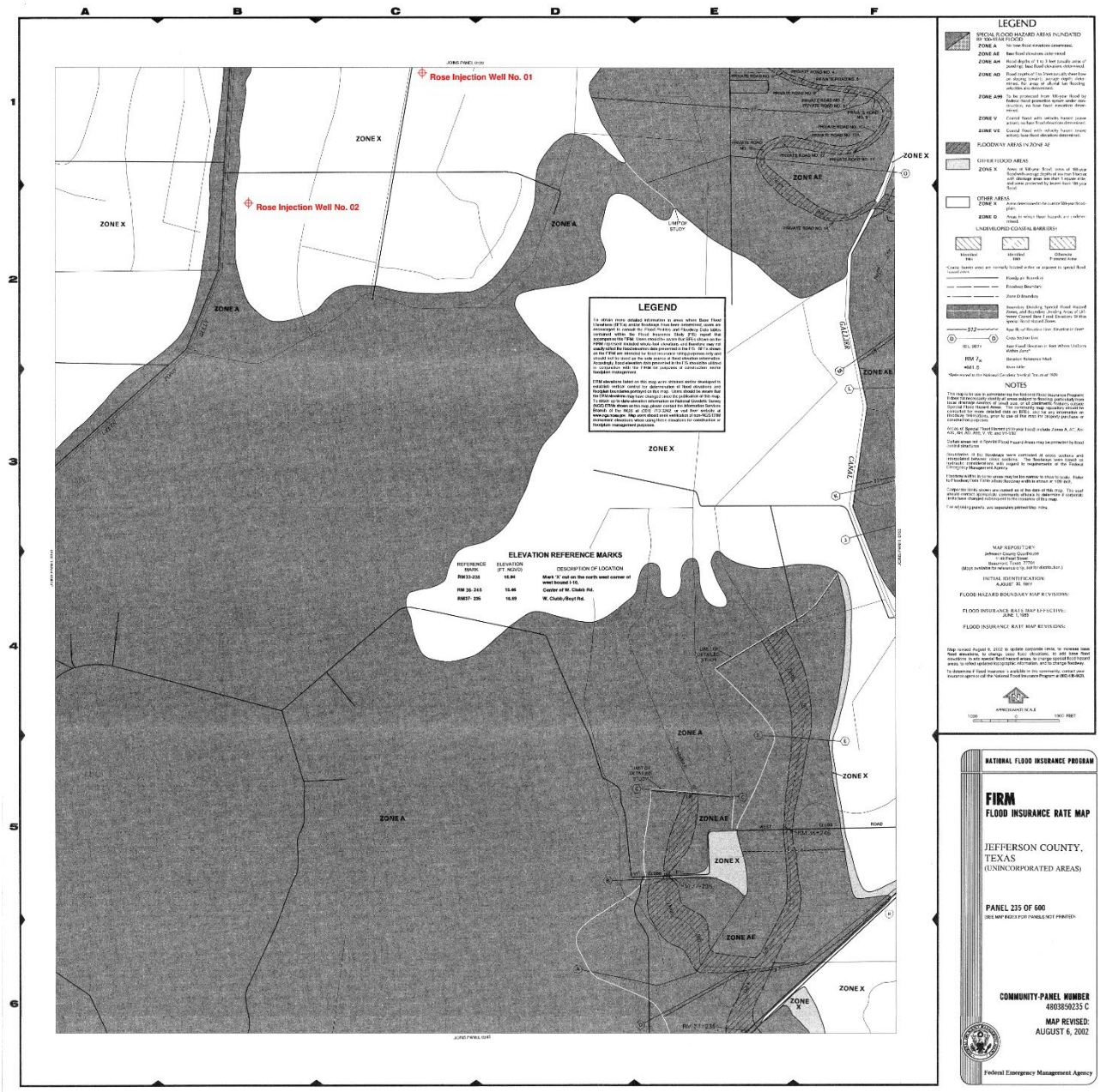
- Incident Command System for Initial Response ICS-100/200
- 24-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training
- CO2 training course

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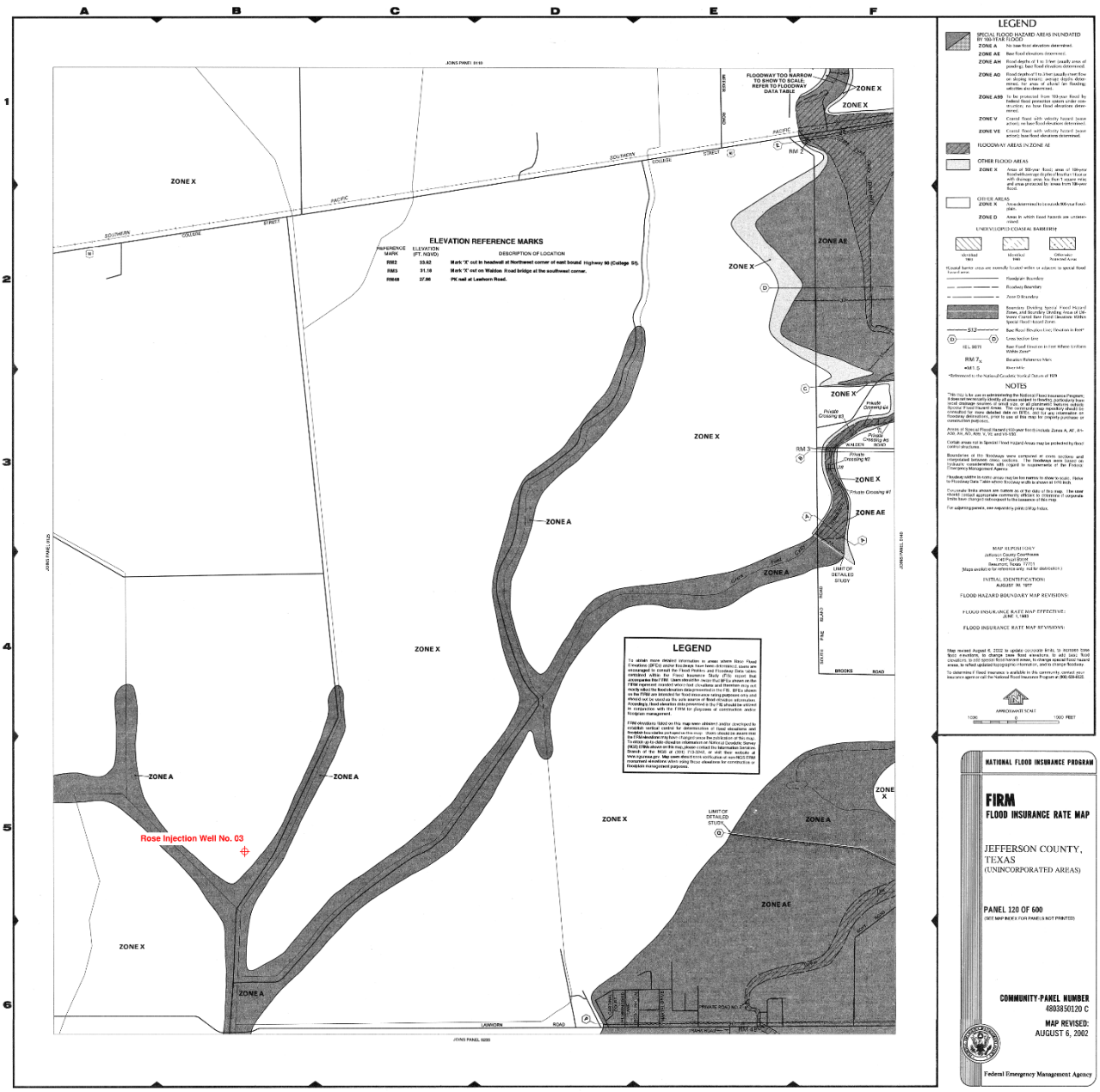
Appendix G Emergency and Remedial Response Plan Files

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Appendix G-1: FEMA Flood Zone Hazards Map for Rose Project CCS Injection Wells No. 01 and No. 02



Appendix G-2: FEMA Flood Zone Hazards Map for Rose Project CCS Injection Well No. 03



Appendix G-3 Integrated Contingency Plan



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Railroad Commission of Texas Attachment I

Post-Injection Site Care and Site Closure Plan

Underground Injection Control – Class VI Permit Application for Rose CCS Project Injection Wells No. 01, No. 02, and No. 03

SECTION 7 – POST-INJECTION SITE CARE AND SITE CLOSURE PLAN

Rose Carbon Capture and Storage Project

Jefferson County, Texas

ExxonMobil Low Carbon Solutions Onshore Storage LLC

May 2025

SECTION 7 – POST-INJECTION SITE CARE AND SITE CLOSURE PLAN

TABLE OF CONTENTS

7.0 Post-Injection Site Care and Site Closure Plan 5
7.1 Objectives 5
7.2 Calculation of Pre- and Post-Injection Pressure Differentials 6
7.3 Predicted Position of the CO2 Plume and Pressure Front at Site Closure 9
7.4 Post-Injection Monitoring Plan 13
7.4.1 PISC and Site Closure Plan Reviews and Amendments 13
7.4.2 Monitoring Above the UCCZ and USDW 14
7.4.3 In-Zone CO2 Plume and Pressure Front Tracking 16
7.4.4 Submitting PISC Monitoring Results 17
7.5 Demonstration of Non-Endangerment of USDW 17
7.5.1 Introduction and Overview for Non-Endangerment Demonstration 18
7.5.2 Summary of Existing Monitoring Data 18
7.5.3 Summary of Computational Modeling History 18
7.5.4 Evaluation of Reservoir Pressure 19
7.5.5 Evaluation of the CO2 Plume 19
7.5.6 Evaluation of Emergencies or Other Events 19
7.6 Site Closure Plan 19
7.6.1 Pre-Closure 20
7.6.2 Plugging Activities 20
7.6.3 Site Restoration 21
7.6.4 Documentation of Site Closure 21

List of Tables

Table 7-1: Maximum Pressure Differential by Year for Injection Wells No. 01, No. 02, and No. 03 and the In-Zone Monitoring Well 7
Table 7-2: Direct Above-Zone Monitoring and USDW Sampling and Analysis Program 14
Table 7-3: Indirect Above-Zone Monitoring Program 15
Table 7-4: Direct and Indirect In-Zone Monitoring Program for PISC 16
Table 7-5: USDW and Above-Zone Monitoring Well Monitoring and Sampling Program During the PISC Phase 16

List of Figures

Figure 7-1: Proposed Injection Interval Schedule 6

Figure 7-2: Maximum Pressure Differential Over Time for Injection Wells and Monitoring Well at Rose Cabon Capture and Storage Project 8

Figure 7-3a: Predicted CO2 Plume at Year 40 and Maximum Pressure Front at Site Closure...11

Figure 7-3b: CO2 Plume Comparison Year 63 vs. Year 40. 12

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7.0 Post-Injection Site Care and Site Closure Plan

ExxonMobil Low Carbon Solutions Onshore Storage LLC (ExxonMobil) is submitting this Underground Injection Control Class VI Permit Application (Application) to the U.S. Environmental Protection Agency (EPA) for the Rose Cabon Capture and Storage Project (Project). ExxonMobil is undertaking the Project in Jefferson County, Texas to sequester a maximum of 5 million metric tonnes per annum of carbon dioxide (CO2) using three injection wells over an injection period of up to 13 years. The predicted total CO2 storage is 53 million metric tonnes. This Post-Injection Site Care (PISC) and Site Closure Plan is submitted in compliance with the requirements of the Code of Federal Regulations, Title 40, Section 146.93 [40 CFR 146.93] and Texas Administrative Code, Part 1, Title 16, Chapter 5.

The PISC Plan describes the activities that will occur once injection operations have ceased, and the Project moves into maintaining a non-endangerment condition for underground sources of drinking water (USDW). The Site Closure Plan will be implemented once ExxonMobil demonstrates to the Underground Injection Control (UIC) Program Manager that no additional monitoring is required to demonstrate protection of USDW and that the testing and monitoring system can be dismantled. ExxonMobil's strategy for PISC monitoring is based on the same systems and processes as described in Section 5 – Testing and Monitoring Plan of the Application. The major monitoring elements include continued measurements of the CO2 plume and pressure front location, monitoring above upper composite confining zone (UCCZ) groundwater as well as USDW. The data collected from this activity will be used to confirm compliance with the water quality objectives for the Project and generate information needed to support the final non-endangerment demonstration and subsequent site closure. The end of the Project comes when the closure activities have been documented and approved by the UIC Program Director.

7.1 Objectives

The PISC and Site Closure Plan have been developed to meet the following objectives as outlined in 40 CFR 146.93:

- Describe the pressure differential between pre-injection and predicted post-injection pressures in the injection zones as well as the predicted positions of the CO2 plume and associated pressure front at site closure;
- Describe the post-injection monitoring locations, methods, and proposed frequencies to demonstrate non-endangerment to USDW over the timeframe of the PISC;
- Identify the pre-closure, plugging, and site-restoration steps to achieve approval for site closure; and
- Outline the documentation and recordkeeping practices that will provide the information for decision-making purposes.

ExxonMobil will not cease post-injection monitoring until the non-endangerment demonstration pursuant to 40 CFR 146.93(b)(3) has been approved by the UIC Program Director. Pursuant to 40 CFR 146.93(b)(1), the default PISC monitoring timeframe is 50 years after cessation of injection. ExxonMobil will monitor groundwater quality and track the position of the CO2 plume and pressure front for 50 years after cessation of injection unless a lesser period of time is approved by the UIC Program Director. Once the non-endangerment demonstration has been

approved, ExxonMobil will plug the monitoring wells, restore each well pad to the landowner's agreed-upon condition, and submit a Site Closure Report to the UIC Program Director.

7.2 Calculation of Pre- and Post-Injection Pressure Differentials

As described in 40 CFR 146.93(a)(2)(i), the Class VI non-endangerment demonstration will establish that pressure has declined to a level that no longer poses potential endangerment of USDW. For the purposes of this section, ExxonMobil evaluated the pressure differentials by comparing the pre-operating pressure with the post-injection pressure differentials predicted by the plume model. The predicted pressure differential between pre-injection and the modeled post-injection pressures are favorable, showing a steep and continuous decline in pressure toward pre-operational baseline conditions. The primary mechanisms responsible for the anticipated pressure decay rates are the injection sequencing plan, the geological conditions of the injection zones (e.g., net sand thickness, permeability, porosity) and confining zones, and the projected CO2 storage volume for the Project site.

A staged injection sequence is planned for the injection wells to optimize the storage of CO2 in the three Fleming Sand injection intervals (from uppermost to lowermost Fleming 1, Fleming 2, and Fleming 3) and the Upper Frio injection interval. Section 3 – Area of Review and Corrective Action Plan and Section 4 – Well Construction Plan and Operating Conditions of the application provide detailed discussions of the injection sequencing strategy. Figure 7-1 summarizes the injection sequence schedule for the proposed 13-year injection period. The actual injection period will depend on the issuance of the permits for each injection well.

Figure 7-1: Proposed Injection Interval Schedule

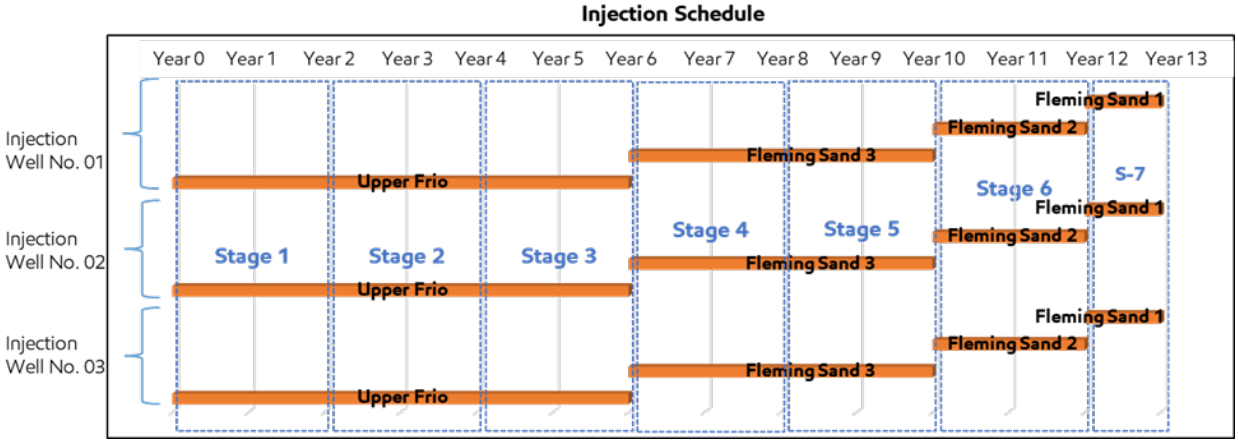
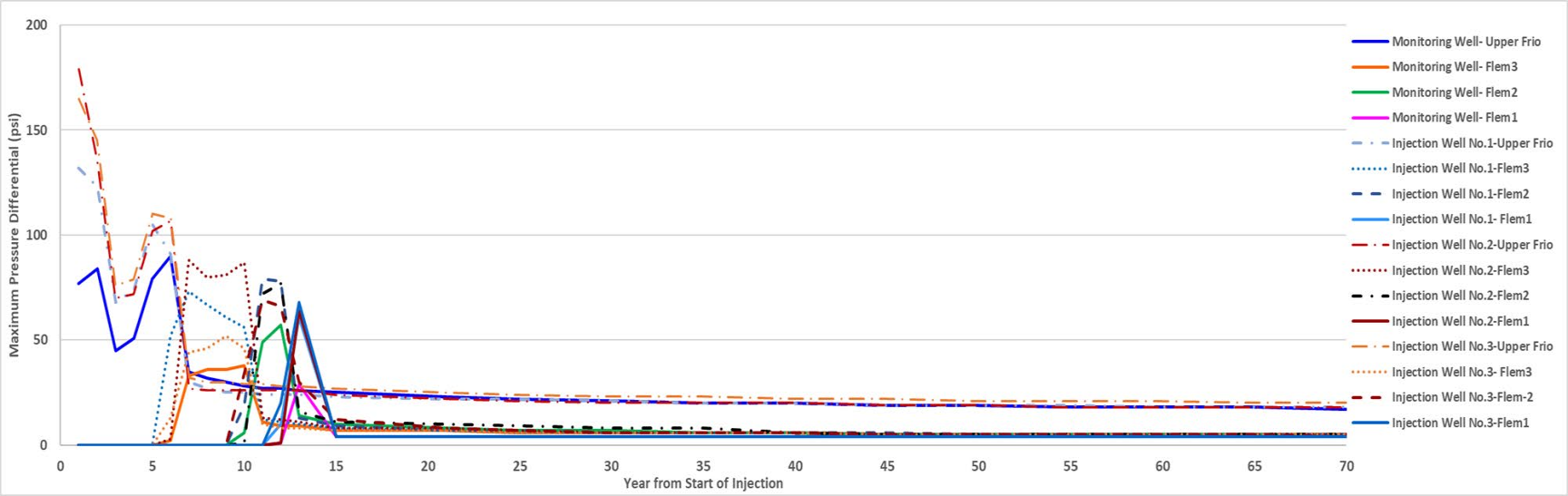


Table 7-1 provides the model-predicted maximum pressure differential and the change in injection pressures in each injection interval over time pursuant to 40 CFR 146.93(a)(2)(i). Figure 7-2 presents a graphical representation of the pressure differential data provided in Table 7-1.

Table 7-1: Maximum Pressure Differential by Year for Injection Wells No. 01, No. 02, and No. 03 and the In-Zone Monitoring Well



Figure 7-2: Maximum Pressure Differential Over Time for Injection Wells and Monitoring Well at Rose Cabon Capture and Storage Project



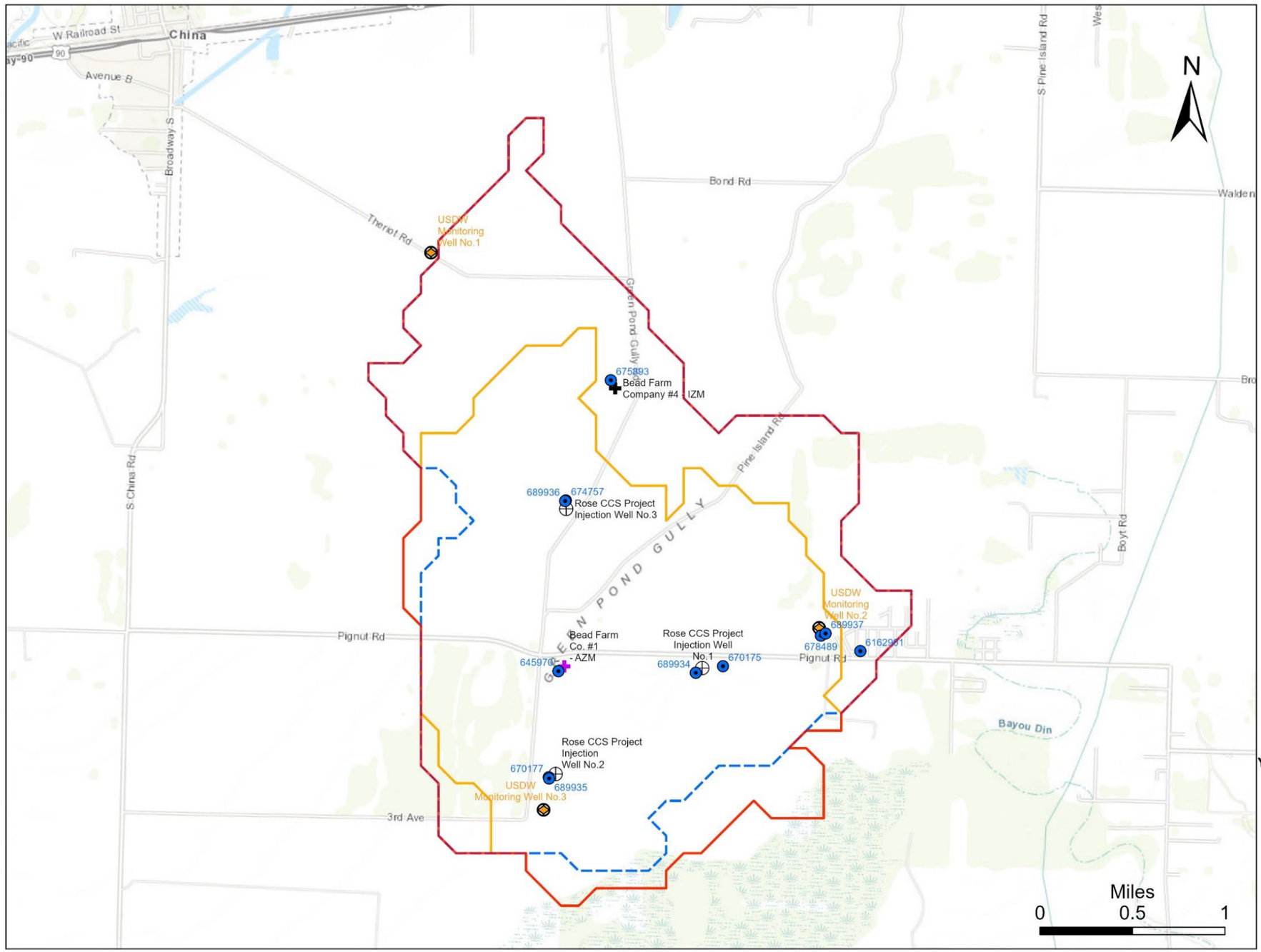
7.3 Predicted Position of the CO2 Plume and Pressure Front at Site Closure

Pursuant to 40 CFR 146.93(a)(2)(ii), the Area of Review (AoR) was delineated using computational modeling that accounts for all phases of CO2 (e.g., supercritical, dissolved, etc.) under proposed operational conditions. The AoR consists of both the CO2 plume and the extent of the pressure front. The following discussion provides the predicted evolution of both the CO2 plume and pressure front throughout the course of the 50-year PISC timeframe.

Figure 7-3a shows the extent of the AoR and its subcomponents at 40 years from start of injection (13 years of injection and 27 years from cessation of injection). Based on the model, the CO2 plume stabilization is predicted to occur 39 years after injection starts as described in Section 3.7.1 – Extent of CO2 Plume. Maximum pressure differentials occur during active injection phase and dissipate rapidly post-injection. These features are consistent with plume stabilization and protection of USDW. The CO2 plume at year 40 is indicated by the blue polygon, based on the maximum extent of any injection interval. The maximum extent of the pressure front is shown using the orange dashed line. This line represents a composite of the maximum extent of the pressure front at any point in time for the four injection intervals during all seven stages of injection operation. Note this maximum pressure front occurs during active injection (first 13 years). By year 40, the field pressure differential has fallen well below critical pressure in all zones.

Figure 7-3b provides an additional view of predicted CO2 plume at year 63 (50 years post-injection), compared to year 40 (27 years post-injection).

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Legend

- Area of Review
- Injection Wells
- Bead Farm Co. #1 - AZM
- Bead Farm Company #4 - IZM
- USDW Monitoring Well
- Water Well
- Maximum Pressure Front
- CO2 Stabilized Plume

Figure 7-3 (a)
Extent of Stabilized CO2 Plume at Year 40 and Maximum Pressure Front during Active Injection

Rose Carbon Capture and Storage Project
ExxonMobil Low Carbon Solutions Onshore Storage LLC
Jefferson County, Texas

a

ExxonMobil

Claimed as PBI

7.4 Post-Injection Monitoring Plan

PISC monitoring is required by 40 CFR 146.93(b) to demonstrate that USDW is not endangered during the post-injection phase of the Project. Much like the operational phase, direct and indirect forms of monitoring will be used to track the evolution of the CO2 plume and pressure front after cessation of CO2 injection. The strategy for the Post-Injection Monitoring Plan is to rely on a core set of monitoring locations that were established during the operational phase of the Project. The following set of core monitoring locations were assumed to be installed and monitored pursuant to the Testing and Monitoring Plan and found sufficient pursuant to the AoR reevaluation process:

- In-Zone Monitoring at Injection Wells No. 01, No. 02, and No. 03 for indirect CO2 plume monitoring;
- In-Zone Monitoring Well No. 01 located updip from the injection wells for direct and indirect in-zone monitoring ;
- Above-Zone Monitoring Well (Bead Farm Co. #1; American Petroleum Institute 4224532908) located in the middle of injection wells for above-zone monitoring interval (AZMI) fluid sampling; and
- USDW Monitoring Wells No. 01, No. 02, and No. 03 for direct monitoring of USDW.

Figure 5-4 in Section 5 – Testing and Monitoring Plan illustrates the locations of these USDW monitoring wells. In the event that additional monitoring locations are added during the course of the injection operations under the direction of the UIC Program Manager, this core set of monitoring wells will be updated to reflect the detection monitoring system found sufficient for CO2 plume and pressure front migration evaluation at the close of the injection phase of the Project.

In accordance with 40 CFR 146.93(b)(1), monitoring of the pressure front and CO2 plume will occur for at least 50 years or an alternate duration approved by the UIC Program Director. ExxonMobil is proposing a schedule to submit PISC monitoring results annually and within 30 days of the anniversary date of injection cessation [40 CFR 146.93(a)(2)(iv)].

The following discussion provides details on the elements of the PISC monitoring strategy outlined above.

7.4.1 PISC and Site Closure Plan Reviews and Amendments

As required by 40 CFR 146.93(a)(3), ExxonMobil will submit an amended PISC and Site Closure Plan or demonstrate that no amendment is needed upon cessation of injection. Amendments to the plan, or the demonstration that no revisions are necessary, will be based on monitoring data collected during injection and the most-recent AoR delineation. The plume model will continue to be updated throughout the Project using monitoring information and the AoR reevaluation process and reporting requirements.

During PISC monitoring, ExxonMobil will conduct periodic reviews to incorporate new monitoring data, changes to the site computational model that may warrant changes in PISC monitoring, and/or changes in the methodology proposed to demonstrate non-endangerment of USDW. This approach will also support the use of new technologies that may be available in the future that facilitate a higher level of performance than the existing system. Pursuant to 40 CFR

146.84(e) and as described in Section 4 – Well Construction Plan and Operating Conditions, ExxonMobil will reevaluate the AoR periodically by comparing model predictions with monitoring results. Following an AoR reevaluation process, if the AoR and Corrective Action Plan are amended, ExxonMobil will review the PISC and Site Closure Plan to determine whether any updates are needed to ensure consistency across all plans. ExxonMobil may submit an amended PISC that describes how changes to the model affect predictions of pressure dissipation, plume migration rates, CO2 trapping, and additional processes that need to be accounted for in the non-endangerment demonstration.

In accordance with 40 CFR 146.93(a)(4), at any time during the life of the Project, ExxonMobil may modify and resubmit the PISC and Site Closure Plan for the UIC Program Director's approval within 30 days of such change.

7.4.2 Monitoring Above the UCCZ and USDW

During the injection phase, periodic monitoring of groundwater quality for significant geochemical changes above the UCCZ is required by 40 CFR 146.90(d) for the purpose of detecting potential leakage through the UCCZ. As described in Section 2 – Site Characterization, the UCCZ is a thick, muddy sequence that includes the Middle Miocene Amphistegina 'B' Shale a regionally continuous, transgressive marine shale. In accordance with 40 CFR 146.93(b)(1), groundwater quality and geochemical characteristics will be monitored in the Above-Zone Monitoring Well (Bead Farm Co. #1) and in the USDW at USDW Monitoring Wells No. 01, No. 02, and No. 03 during the post-injection period.

ExxonMobil's strategy for monitoring groundwater above the UCCZ is a risk-based approach correlated to modeled CO2 plume and injection zone characteristics. By the time the PISC monitoring program is initiated, the risk mitigating effects of injection sequence plan, the operating strategy, and corrective actions taken on artificial penetrations will likely have demonstrated protection of USDW throughout the operational phase of the Project. The list of analyses to be performed at these monitoring wells is summarized in Table 7-2 based on the same approach used for the operational phase of the Project.

Table 7-3 provides a summary of indirect monitoring technologies to be used for above-zone CO2 plume and pressure front monitoring during the PISC phase of the Project. This monitoring strategy is consistent with the details and rationale provided in Section 5 – Testing and Monitoring Plan of this application. The results of the monitoring activities will be submitted in the annual report for the year in which they occur and within 30 days of the anniversary date of injection cessation or through an alternate agreed schedule with the UIC Program Director.

Table 7-2: Direct Above-Zone Monitoring and USDW Sampling and Analysis Program

Target Formation	Monitoring Activity	Monitoring Location(s)	Frequency [1]	Geochemical Analyses
USDW (Chicot Aquifer)	Water Level Gauging and Collection of Fluid Samples	USDW Monitoring Wells No. 01, No. 02, and No. 03	Annual	Total dissolved solids, alkalinity, electrical conductivity, temperature, pH, Gas composition (CO2, CH4, O2, N2), Dissolved cations (Ba, Cd, Ca, Cr, Co, Cu,
First Laterally Continuous	Collection of Fluid Samples	Above-Zone Monitoring Well	Annual	

Target Formation	Monitoring Activity	Monitoring Location(s)	Frequency [1]	Geochemical Analyses
Permeable Formation above UCCZ		(Bead Farm Co. #1)		Fe, Pb, Li, Mg, Mn, Mo, Ni, P, K, Si, Na, Sr, V, Zn) Dissolved anions (HCO3, B(OH)4, Br, CO3, Cl, F, I, NO3, NO2, PO4, SO4, S)

Ba = barium; Br = bromine; Ca = calcium; CH4 = methane; Cl = chlorine; F = fluorine; Fe = iron; HCO3 = bicarbonate; Mg = magnesium; Mn = manganese; N2 = Nitrogen; Na = sodium; O2 = oxygen; SO4 = sulfate

[1] The word “continuous” as used to express the frequency of measures collected during monitoring equipment operation is defined as the instrument’s normal data collection frequency as defined by the manufacturing. The frequency will vary by instrument and application. Measurements that are collected “continuously” will be averaged across a reasonable and appropriate time interval for reporting the detection monitoring results during the operational phase of the Project.

Table 7-3: Indirect Above-Zone Monitoring Program

Testing/Monitoring Activity	Frequency	Reporting Schedule	Comment
Indirect Plume Monitoring by Time-Lapse Seismic Surveys or Equivalent Technologies	Survey Event #4 will occur at the end of operational period, a predicted total of 13 years after the start of operation. Contingent additional survey events during PISC phase to be determined based on the results from direct and indirect monitoring and model prediction.	Within 30 days after time-lapse seismic processing and interpretation has finished	The frequency and method of indirect plume monitoring will be determined in conjunction with the UIC Director

The analytical methods and quality assurance/quality control measures for collecting and analysis of fluid samples discussed in Section 5 – Testing and Monitoring Plan and will apply to the data collection program of the PISC, as appropriate.

7.4.3 In-Zone CO2 Plume and Pressure Front Tracking

ExxonMobil proposes to use direct and indirect methods to track the extent of the CO2 plume and pressure front in the injection zone during the PISC period. Direct monitoring in the injection zone includes continuous pressure and temperature measurements in the final injection zone for Injection Wells No. 01, No. 02, No. 03, and in In-Zone Monitoring Well No. 01. Indirect monitoring technologies include geophysical surveys to indirectly monitor subsurface conditions. By the start of the PISC phase of the Project, the direct and indirect monitoring activities will have been used for approximately 13 years and will be a proven set of monitoring technologies for detection monitoring of CO2 plume and brine crossflow potential.

Table 7-4 describes the proposed CO2 and pressure plume tracking methods for the PISC Plan. The water quality and geochemical parameters to be analyzed are presented in Table 7-5, consistent with Section 5 – Testing and Monitoring Plan where additional information on the monitoring methods described and how deviations would be identified.

Table 7-4: Direct and Indirect In-Zone Monitoring Program for PISC

Monitoring Element	Strategy
Time Period	Immediately following and for up to 50 years from cessation of injection operations.
Monitored Locations, Conditions, and Frequency	• Injection Wells No. 01, No. 02, and No. 03: continuous wellhead and borehole pressure at the 7th Stage injection interval and temperature in the injection zone. • In-Zone Monitoring Well No. 01: continuous pressure and temperature throughout the injection zone. • Above-Zone Monitoring Well (Bead Farm Co. #1): Annual AZMI fluid samples for water quality and geochemical parameters. • USDW Monitoring Wells No. 01, No. 02, No. 03: annual fluid samples for water quality and geochemical parameters. • Time-lapse seismic surveys or equivalent technologies for the AoR from surface to base of Upper Frio Sand 2. Survey Event #4 will occur at the end of operational period, a predicted total of 13 years after the start of operation. The need for additional surface seismic survey events during the PISC phase of the Project will be determined based on the results from direct and indirect monitoring and model prediction.
Planned Changes in Monitoring Techniques	None. The model-predicted rapid decrease in CO2 plume movement and pressure significantly reduces the potential for USDW endangerment following injection and eliminated need for additional monitoring.
Triggers	Table 3-21 in Section 3 – Area of Review and Corrective Action Plan provides a list of triggers for the AoR reevaluation process. Those triggers are applicable to the monitoring program.

Table 7-5: USDW and Above-Zone Monitoring Well Monitoring and Sampling Program During the PISC Phase

Monitoring Well	Frequency	Parameter/Analyte
Above-Zone Monitoring Well (Bead Farm Co. #1)	Annually	• Total dissolved solids

Monitoring Well	Frequency	Parameter/Analyte
USDW Monitoring Wells No. 01, No. 02, No. 03		• Alkalinity • Electrical Conductivity • Temperature • pH • Gas composition (CO2, CH4, O2, N2) • Dissolved cations (Ba, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mn, Mo, Ni, P, K, Si, Na, Sr, V, Zn) • Dissolved anions (HCO3, B(OH)4, Br, CO3, Cl, F, I, NO3, NO2, PO4, SO4, S)
Ba = barium; Br = bromine; Ca = calcium; CH4 = methane; Cl = chlorine; F = fluorine; Fe = iron; HCO3 = bicarbonate; Mg = magnesium; Mn = manganese; N2 = nitrogen; Na = sodium; O2 = oxygen; SO4 = sulfate		

7.4.4 Submitting PISC Monitoring Results

In accordance with 40 CFR 146.93(a)(2)(iv), ExxonMobil will submit PISC monitoring data to the UIC Program Director in annual reports within 30 days following the anniversary of the date that injection ceases. The annual reports will contain information and data generated during the reporting period, such as:

- A list of monitoring events performed during the reporting period and the associated dates;
- A brief description of sampling/testing/analytical locations, elevations/depths, equipment, and procedures, indicating whether (and why) departures from the procedures specified in the PISC and Site Closure Plan occurred;
- Changes to the monitoring program that took place during the reporting period (e.g., repair to monitoring wells, implementation of approved changes in the frequency of monitoring activities based on criteria established in the PISC and Site Closure Plan and approval of UIC Program Director);
- Synthesis and interpretation of the results that describe trends in parameter values or lack of trends, statistical tests performed, alignment between actual and plume model predictions, the appearance of anomalous or unexpected results, and progress toward attaining the EPA and Railroad Commission of Texas (RRC) criteria for non-endangerment;
- Map(s) and cross section(s) showing the AoR, monitoring locations, and the interpreted extent of the separate-phase CO2 plume and the pressure front; and
- Any recommended changes to the PISC and Site Closure Plan to continue protection of USDWs.

7.5 Demonstration of Non-Endangerment of USDW

Prior to the approval of the site closure authorization and in accordance with 40 CFR 146.93(b)(2) and 40 CFR 146.93(b)(3), ExxonMobil will provide documentation to assess the potential for USDW to be at risk of endangerment from the CO2 plume at the end of the PISC phase of the Project. The non-endangerment demonstration will be based on monitoring data and a demonstration that the structure of the confining zones, combined with the geochemical

conditions of the subsurface, have effectively permanently sequestered the stored CO2. This information will be used to demonstrate that additional monitoring is not needed to protect USDW and the Project has met the compliance obligations to receiving authorization for site closure.

This demonstration will be in the form of a detailed report submitted to the UIC Program Director that synthesizes site- and Project-specific information and demonstrates a current understanding of system behavior at the time of the non-endangerment demonstration. The following subsections outline the type of information to be presented in the non-endangerment demonstration report.

ExxonMobil will engage the UIC Program Director as soon as the available data are aligned with the criteria for site closure, which may ultimately be less than the default PISC duration of 50 years pursuant to 40 CFR 146.93(b)(2) and 40 CFR 146.93(c).

7.5.1 Introduction and Overview for Non-Endangerment Demonstration

A summary of relevant background information will be provided in the introduction section, including the operational history of the injection Project, the date of the non-endangerment demonstration relative to the post-injection period outlined in this PISC and Site Closure Plan, and a general overview of how monitoring and modeling results will be used together to support a demonstration of USDW non-endangerment.

7.5.2 Summary of Existing Monitoring Data

The monitoring data collected throughout the Project's lifecycle will be summarized and used to describe how the UCCZ functioned as a barrier to mitigate endangerment of USDW and how the CO2 is effectively trapped in the injection zones. The non-endangerment demonstration will include a summary of previous monitoring data collected at the site, pursuant to the details in Section 4 – Well Construction Plan and Operating Conditions, and Section 5 – Testing and Monitoring Plan of this application as well as the PISC and Site Closure Plan. Data submittals will be in a format acceptable to the UIC Program Director [40 CFR 146.91(e)] and will include a narrative explanation of monitoring activities, including the dates of all monitoring events, changes to the monitoring program over time, and an explanation of the monitoring infrastructure that has existed at the site. The data will be compared with baseline data collected during site characterization, including the use of statistical analyses as warranted [40 CFR 146.82(a)(6) and 146.87(d)(3)] to assess trends in key parameters that support the proposal for site closure.

7.5.3 Summary of Computational Modeling History

A series of data sources detailed in Section 5 – Testing and Monitoring Plan of this application will be used to update the computational model at least once every five years, more frequently if warranted. The following measured data will be utilized to update the computational model to demonstrate non-endangerment:

- In-zone temperature and pressure data;
- Injection rate and volume data;
- CO2 plume location based on indirect geophysical monitoring; and

- AZMI data regarding the performance of the UCCZ.

The procedure used to reevaluate the AoR will be based upon the data collected between reevaluations and the well conditions at the time of reevaluation. The post-injection data will include historical injection rates, pressures, pressure fall-off, and historical operational parameters of the three injection wells. ExxonMobil will rely on a process of history matching the plume model results with the actual monitoring data. The measured data will be used as a calibration point for the plume model and the input parameters adjusted to provide a reasonable match between the two data sets. Through this or a similar process, ExxonMobil will provide a validation of the model performance for the CO2 plume and pressure front.

7.5.4 Evaluation of Reservoir Pressure

The non-endangerment demonstration will include an evaluation of the residual pressure and the potential for future endangerment of USDW continued trends in pressure dissipation. Information will be provided to describe how the pressure and buoyancy effects on plume and pressure migration decayed over time and how the residual levels comply with the requirements for non-endangerment. This evaluation will consider the most-recent AoR delineation/modeling results and pressure monitoring data. The same model that supported the delineation of the AoR or similar approved model by UIC Program Manager will be used for this modeling as it will be verified (or calibrated) by actual monitoring and operational data via AoR reevaluations.

7.5.5 Evaluation of the CO2 Plume

The evaluation of the CO2 plume will evaluate the characteristics of the gas-phase CO2 plume, the aqueous-phase CO2 plume, and the dissolved-phase CO2 plume, as appropriate. The evaluation of the potential CO2 plumes will rely on monitoring data including geochemical and geophysical analyses and the most-recent AoR modeling results. Direct measurements of temperature and pressure of CO2 in the injection zone as well as the results of geophysical measurements will be used to confirm plume location and demonstrate plume migration rates. A comparison of monitoring data with the most-recent modeling results will also be used to corroborate model predictions of the phase-state of CO2 and the degree and processes of CO2 trapping over time.

7.5.6 Evaluation of Emergencies or Other Events

A key feature of the AoR is how few artificial penetrations were identified and of those, only two penetrated the UCCZ. The artificial penetration of the UCCZ will be re-entered, and a corrosion resistant cement plug will be placed to restore the integrity of the UCCZ, and additional cement plugs will be set to protect USDW from crossflow potential. If any subsequent artificial penetrations are discovered to have a potential to threaten USDW, they will have been remediated using the same procedures such that no artificial penetrations of concern remain at the time of site closure.

The data and evaluation methods specified pursuant to the requirements of Section 5 – Testing and Monitoring Plan as well as the PISC Plan provide the basis for demonstrating that no future endangerment of USDW is likely to occur.

7.6 Site Closure Plan

ExxonMobil will conduct site closure activities to meet the requirements of 40 CFR 146.93(d) through (h) as described below. ExxonMobil will submit a final Site Closure Plan and notify the

UIC Program Director at least 120 days prior of its intent to close the site. Once the UIC Program Director has approved closure of the site, ExxonMobil will plug all injection and monitoring wells and submit a site closure report to the EPA and RRC. The activities, as described below, represent the planned activities based on information provided to EPA. The actual Site Closure Plan may employ different methods and procedures. A final Site Closure Plan will be submitted to the UIC Program Director for approval with the notification of the intent to close the site. Additionally, ExxonMobil will record a notation on the deed to the site that the land has been used to sequester CO2.

Site closure activities will also include removing all surface equipment and restoring the site to its prior land surface condition.

7.6.1 Pre-Closure

In accordance with 40 CFR 146.93(d), a notice of intent to close the site will be submitted to the UIC Director at least 120 days prior to the commencement of closure operations. If any changes are made to the original PISC and Site Closure Plan, a revised plan will also be submitted. Relevant notifications and applications, such as plugging requests, will be submitted and approved by the appropriate agency prior to commencing such activities.

The site closure notice submitted to the UIC Program Director will include the following:

- Facility information, name, and location;
- A list of contact personnel for allowing timely direct communication to resolve any pressing issues; and
- A projected closure date, no less than 120 days following the site closure notification submission, unless the UIC Program Director has approved a different period prior to notice submission.

7.6.2 Plugging Activities

Injection Wells No. 01, No. 02, and No. 03 will be plugged as discussed in Section 6 – Injection Well Plugging Plan. After injection in the injection wells ceases and after the appropriate post-injection monitoring period is complete, the monitoring wells will be plugged and abandoned to meet the requirements at 40 CFR 146.92 and in compliance with applicable state requirements. The plugging procedure and materials will be designed to mitigate fluid movement and protect USDW. Prior to plugging the wells, the necessary procedural revisions to address new information will be submitted to the UIC Program Director for review and approval. The final plugging plans will be submitted to the UIC Program Director no later than 60 days prior to plugging of the wells.

Following receipt of the approved plugging plans, wells below the lowermost USDW and above the UCCZ will be logged and pressure tested to ensure mechanical integrity. If a loss of mechanical integrity is discovered, it will be repaired prior to proceeding with plugging operations. The casing in these wells will be closed in place and it will not be retrieved at abandonment. A combination of permanent packers with plugs and cement on top and cement plugs will be set to plug the wells. All casing strings will be cut at least three feet below ground level. A steel plate, with the required permit information, will be welded to the top of the casing, to the extent required by State of Texas requirements.

7.6.3 Site Restoration

Once the injection and monitoring wells are plugged and abandoned, the surface equipment will be decommissioned and removed from the well site. The well site will be restored to a condition agreed upon with the landowner.

7.6.4 Documentation of Site Closure

Within 90 days of site closure, a final report will be submitted to the UIC Program Director per the requirements of 40 CFR 146.93(f) and will include the following:

- Documentation of appropriate injection and monitoring well plugging, including a copy of the survey plats [40 CFR 146.93(f)(1)];
- The survey plat will indicate the locations of the injection wells relative to permanently surveyed benchmarks and will include the location(s) of the monitoring well(s);
- Documentation of well-plugging report will be filed with the RRC [40 CFR 146.93(f)(2)];
- Post-injection monitoring records will be summarized; and
- Records of the nature, composition, and volume of the CO2 stream for the injection period will be summarized [40 CFR 146.93(f)(3)].

Pursuant to 40 CFR 146.93(g), a record of notation in the Project facilities and infrastructure will be filed on the property deed to provide notice to landowners of the following:

- The land use to sequester CO2;
- The name of the state agency with which the survey plat was filed (RRC) and the EPA Regional Office (Region VI) at which it was submitted; and
- The total volume of CO2 injected, the injection zones into which it was injected, and the period over which injection occurred.

As required by 40 CFR 146.93(h), ExxonMobil will retain all records collected during the PISC period for 10 years following site closure. At the end of the retention period, ExxonMobil will deliver all records to the UIC Program Director for retention at a location designated by the UIC Director for that purpose.

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Railroad Commission of Texas Attachment J

Financial Assurance Demonstration

ExxonMobil

Underground Injection Control – Class VI Permit Application for Rose CCS Project Injection Wells No. 01, No. 02, and No. 03

SECTION 9 – FINANCIAL ASSURANCE

Rose Carbon Capture and Storage Project

Jefferson County, Texas

ExxonMobil Low Carbon Solutions Onshore Storage LLC

May 2025

SECTION 9 – FINANCIAL ASSURANCE

TABLE OF CONTENTS

9.0 Financial Assurance 5
9.1 Facility Information 5
9.2 Financial Assurance Demonstration 6
9.3 Estimated Coverage Amounts 8
9.4 Corrective Action 9
9.5 Well Plugging 10
9.5.1 Injection Well Plugging 10
9.5.2 Monitoring Well Plugging 10
9.6 Post-Injection Site Care and Site Closure Plan 11
9.6.1 Post-Injection Monitoring 11
9.6.2 Site Closure Plan 11
9.7 Emergency and Remedial Response 12

List of Tables

Table 9-1: Financial Coverage and Threshold Criteria for EEHC, as Guarantor to ExxonMobil for the Rose Site 7
Table 9-2: Summary of Financial Assurance Coverage Values by GS Activity 9
Table 9-3: Summary of Corrective Action Costs Underpinning Financial Assurance Coverages 10
Table 9-4: Summary of Estimated Well Plugging Costs Underpinning Financial Assurance Coverages 10
Table 9-5: Summary of Estimated PISC and Site Closure Costs Underpinning Financial Assurance Coverages 11
Table 9-6: Summary of Estimated ERR Costs Underpinning Financial Assurance Coverages 12

List of Figures

Figure 9-1: Corporate Structure 7

Appendix J – Financial Assurance

Appendix J-1: Independently Audited Financial Statements for EEHC

Appendix J-2: Executed Corporate Guarantee

Appendix J-3: Letter from Chief Financial Officer

Appendix J-4: EEHC Certification

Appendix J-5: Cost Estimate and Documentation for TAC §5.205

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9.0 Financial Assurance

ExxonMobil Low Carbon Solutions Onshore Storage LLC (ExxonMobil) is undertaking the Rose Carbon Capture and Storage (CCS) Project (Project) in Jefferson County, Texas to sequester a maximum of 5 million metric tonnes per annum of carbon dioxide (CO2) using three injection wells over an injection period of up to 13 years. The predicted total CO2 storage is 53 million metric tonnes. Under the Code of Federal Regulations, Title 40, Section 146.85 [40 CFR 146.85], owners or operators of geologic sequestration (GS) injection wells are required to demonstrate financial responsibility for GS activities.[1] Consistent with these regulatory requirements, ExxonMobil has prepared this document to demonstrate financial responsibility for the injection wells that comprise the Rose CCS Project (Rose Site[2]).

The sections that follow summarize the Project's GS activities, as well as the qualifying financial instrument that ExxonMobil proposes to use, to demonstrate financial responsibility for the following Project phases: (1) Corrective Action; (2) Injection Well Plugging; (3) Post-Injection Site Care (PISC) and Site Closure; and (4) Emergency and Remedial Response (ERR).

9.1 Facility Information

Facility Name:	ExxonMobil Low Carbon Solutions Onshore Storage LLC (ExxonMobil) – Rose CCS Project
Facility Contact:	Claimed as PBI ExxonMobil Low Carbon Solutions Onshore Storage LLC
Project Site Name:	Rose Carbon Capture and Storage Project
Project Location:	Jefferson County, Texas
Well Name and Number	Labelle Properties Ltd #1 (**Rose CCS Project Injection Well No. 01)**
County	Jefferson
Location (RR D, S, A)	Railroad District 3, Section 42, Abstract 874
Latitude / Longitude (NAD83)	29.999678 / -94.285108
American Petroleum Institute	4224532913

[1] The use of the term "geologic sequestration activities" is unique to this section of the Application. It is used to provide additional clarity on which activities of the Project's lifecycle necessitate financial assurance from those that do not, consistent with EPA guidance for financial assurance.

[2] Reference to the Project as the "Rose Site" is used in this section of the Application to distinguish between this Project and other ExxonMobil project applications undergoing simultaneous financial assurance review.

Well Name and Number	Bead Farm Co. #2 (**Rose CCS Project Injection Well No. 02)**
County	Jefferson
Location (RR D, S, A)	Railroad District 3, Section 41, Abstract 266
Latitude / Longitude (NAD83)	29.991017 / -94.298036
American Petroleum Institute	4224532911

Well Name and Number	Bead Farm #3 (**Rose CCS Project Injection Well No. 03)**
County	Jefferson
Location (RR D, S, A)	Railroad District 3, Section 8, Abstract 658
Latitude / Longitude (NAD83)	30.011778 / -94.297858
American Petroleum Institute	4224532912

9.2 Financial Assurance Demonstration

Per 40 CFR 146.85(a)(1)(v), ExxonMobil requests approval from the Underground Injection Control (UIC) Program Director, or their designee, to use a corporate guarantee from Exxon Equity Holding Company (EEHC) for purposes of demonstrating financial responsibility for Corrective Action, Injection Well Plugging, PISC and Site Closure, as well as ERR. EEHC is an indirectly wholly owned subsidiary of Exxon Mobil Corporation (EMC). EEHC provides financial support to or on behalf of EMC's affiliates. EEHC maintains significant intercompany relationships with EMC and its affiliates as shown in Figure 9-1, and as of December 31, 2023, the company had interest-bearing deposits with EMC and its affiliates totaling Claimed as PBI The deposit balances are current and can be called upon demand. See Appendix J-1 for a copy of the independently audited financial statements for EEHC.

Figure 9-1: Corporate Structure



In support of the financial assurance demonstration, EEHC has provided a corporate guarantee to ExxonMobil, which is consistent in form to the corporate guarantee language included in Appendix B of the U.S. Environmental Protection Agency's (EPA) July 2011 guidance document (EPA, 2011). See Appendix J-2 for a copy of the executed corporate guarantee. As shown in Table 9-1, EEHC satisfies both Part 1 and Part 2 of the corporate financial test criteria in 40 CFR 146.85(a)(6)(v).

Table 9-1: Financial Coverage and Threshold Criteria for EEHC, as Guarantor to ExxonMobil for the Rose Site

Financial Coverage / Threshold Requirement per 40 CFR 146.85(a)(6)(v)[3]	EEHC Financial Measure
Part 1	
1. Tangible net worth of at least $100 million?[4]	Yes
2. Net working capital at least six times the sum of the current corrective action, well plugging, PISC and site closure, and ERR costs?	Yes
3. Tangible net worth of at least six times the sum of the current corrective action, well plugging, PISC and site closure, and ERR costs?	Yes

[3] As stated in Note 3 of EEHC's independently audited financial statements, *Deposits receivable from Exxon Mobil Corporation and affiliates* are current and can be called upon demand. All other assets were considered "non-current" for the purposes of this analysis. In addition, all liabilities were considered "current" since the audited financial statements do not differentiate current from non-current liabilities.

[4] ExxonMobil recognizes that 40 CFR 146.85(a)(6)(v) requires that its guarantor meet a Tangible Net Worth of an amount approved by the UIC Program Director. For purposes of this financial assurance demonstration, EEHC affirms that it maintains a Tangible Net Worth of at least $100 million, per the recommended threshold included in EPA's July 2011 Class VI financial responsibility guidance (p. 15).

Financial Coverage / Threshold Requirement per 40 CFR 146.85(a)(6)(v)[3]	EEHC Financial Measure
4. Assets in the United States amounting to at least 90% of total assets or Assets in the United States amounting to at least six times the sum of the current corrective action, well plugging, PISC and site closure, and ERR cost estimate?	Yes
Part 2	
5. Total liabilities to net worth ratio less than 2.0?	Yes
6. Current assets to current liabilities ratio greater than 1.5?	Yes
7. Sum of net income plus depreciation, depletion, and amortization to total liabilities ratio greater than 0.1?	Yes
8. Current assets minus current liabilities to total assets ratio greater than *minus* 0.1?	Yes
9. Net profit (revenues minus expenses) greater than $0?	Yes

Appendix J-3 is a completed letter from Claimed as PBI [redacted] of EEHC, serving as the chief financial officer of EEHC, that demonstrates the company's ability to meet the requisite financial coverage and threshold criteria, per 40 CFR 146.85(a)(6)(v). Appendix J-3 is consistent in form to the "Letter from Chief Financial Officer" included in Appendix B of the EPA's July 2011 guidance document.[5]

Consistent with the EPA's July 2011 guidance, ExxonMobil provides this demonstration of fiscal responsibility with the understanding that the financial instruments referenced herein will be updated and verified no less than annually. As each GS activity phase is initiated, ExxonMobil will confirm that the coverage limits provided by the respective financial responsibility instruments are sufficient to cover the corresponding costs prior to initiating the Project phase.

Furthermore, per Texas Administrative Code §5.205, ExxonMobil requests approval from the Texas UIC Program Director, or their designee, to use a bond for purposes of demonstrating financial responsibility for Corrective Action, Injection Well Plugging, PISC and Site Closure, as well as ERR. The required documentation to satisfy this requirement is in Appendix J-5.

9.3 Estimated Coverage Amounts

The total current cost estimate for the Project's GS activities necessitating financial assurance at the Rose Site is $23,631,000 in 2025 dollars. This total cost estimate assumes the hiring of independent, third-party contractors to perform the required activities for each Project phase. The cost estimate is separated into the following phases:

1. Phased-Corrective Action for artificial penetrations (legacy wells) in the Area of Review (AoR) remaining after initiating operations;
2. Well Plugging[6] to occur after 13 years of site injection;

[5] *op.cit.* See B-19 Appendix B: Recommended Financial Responsibility Instrument Language (Forms/Templates).

[6] Financial responsibility coverages for well plugging reflect the current estimated cost for plugging the three injection wells and four monitoring wells related to the Project.

3. PISC: beginning after 13 years of site injection and ending with Site Closure 50 years after injection ends; and
4. ERR: beginning after 13 years of site injection and ending with Site Closure .

Table 9-2 summarizes the total estimated cost of performing each GS activity, along with the timeline for which financial assurance coverage is expected to be needed. The values included in this demonstration of financial responsibility are based on cost estimates developed as part of the Application process and assume the hiring of third-party contractors to perform the services or to procure the goods associated with the performance of each GS activity. These values are subject to change during the life of the Project to account for inflation of costs and changes to the Project that may affect the cost of covered activities. Per 40 CFR 146.85(c), during the active life of the Project, ExxonMobil will adjust the cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial assurance instrument. In addition, ExxonMobil will provide to the UIC Program Director written updates of adjustments to the cost estimate within 60 days of any amendments to the AoR and Corrective Action Plan [40 CFR 146.84], the injection well plugging plan [40 CFR 146.92], the PISC and Site Closure Plan [40 CFR 146.93], and the emergency and remedial response plan (ERRP) [40 CFR 146.94].

ExxonMobil will adjust the value of its financial assurance instruments in response to any changes in cost estimates and will resubmit its revised demonstration of financial responsibility to the UIC Program Director or their designee for review and approval. ExxonMobil will not adjust the established coverage values of any financial assurance instrument without prior approval from the UIC Program Director, or their designee.

Table 9-2: Summary of Financial Assurance Coverage Values by GS Activity

GS Activity	Estimated Financial Assurance Coverage Value
Corrective Action	$0
Well Plugging	$3,603,000
PISC and Site Closure	$11,420,000
ERR	$8,608,000
TOTAL	$23,631,000
Note: Section 3 – Area of Review and Corrective Action Plan, Section 5 – Testing and Monitoring Plan, Section 6 – Injection Well Plugging Plan, and Section 8 – Emergency and Remedial Response Plan provide detailed discussion of work to be undertaken, which forms the cost basis for the financial assurance coverage values summarized in this table	

9.4 Corrective Action

The Corrective Action Plan is discussed in detail in Section 3 – Area of Review and Corrective Action Plan. Per the requirements of 40 CFR 146.84, the plan specifically outlines both a plugging plan for the artificial penetrations found within CO2 plume and brine pressure front and the recompletion schedule whereby the wellbore modifications will have been completed.

For the planned activities at the Project, workovers on the legacy wells found to have sufficient deficiency as to represent a potential loss of CO2 or brine containment will be re-entered and plugged prior to receiving approval to inject from the UIC Program Director. No corrective actions are expected to be needed beyond the model-predicted five-year extent of the AoR. The estimated financial assurance coverage value for this GS activity is shown in Table 9-3.

Per 40 CFR 146.84(a)(5)(ii), this financial responsibility demonstration will be updated annually to account for any changes in expected financial coverage values and to confirm that the financial instrument(s) then in place remain adequate for use.

Table 9-3: Summary of Corrective Action Costs Underpinning Financial Assurance Coverages

GS Activity	Estimated Financial Assurance Coverage Value
Corrective action on legacy wells (None identified)	$0
TOTAL	$0

9.5 Well Plugging

9.5.1 Injection Well Plugging

Plugging and abandonment (P&A) of the injection wells at the Project will meet the requirements of 40 CFR 146.92. The P&A plan for the injection wells was designed to reduce the potential for movement of CO2 or brine from the injection interval through the upper composite confining zone (UCCZ) and toward underground sources of drinking water (USDWs).

A detailed P&A plan is discussed in Section 6 – Injection Well Plugging Plan. In alignment with the requirements for the P&A plan, the estimated financial assurance coverage value includes costs for logs/wireline to be run in the wellbore before cementing occurs, if necessary. CO2-compatible cement will be used to set the cement plug for the first 100 feet of the UCCZ, followed by additional plugs at the base of the lowermost USDW and at the well surface. The expenses relating to personnel and equipment have been accounted for in Table 9-3.

9.5.2 Monitoring Well Plugging

P&A of the one in-zone monitoring well, one above-zone monitoring well, and three USDW monitoring wells associated with the Project will also meet the requirements of 40 CFR 146.92. As detailed in Section 6 – Injection Well Plugging Plan, the P&A of the monitoring wells was designed to protect USDW from potential endangerment. The estimated financial assurance coverage value for this GS activity includes the costs for logs and wireline to be run in the in-zone monitoring well before cementing occurs to the extent necessary. The expenses relating to personnel and equipment have been accounted for in Table 9-4.

Table 9-4: Summary of Estimated Well Plugging Costs Underpinning Financial Assurance Coverages

GS Activity	Estimated Financial Assurance Coverage Value	Total
Claimed as PBI [redacted]	[redacted]	[redacted]
[redacted]	[redacted]	
[redacted]	[redacted]	
[redacted]	[redacted]	
[redacted]	[redacted]	
[redacted]	[redacted]	
[redacted]	[redacted]	
[redacted]	[redacted]	

GS Activity	Estimated Financial Assurance Coverage Value	Total
Claimed as PBI		
TOTAL*		$3,603,000
*Note: Rounded to nearest ten-thousands.		

9.6 Post-Injection Site Care and Site Closure Plan

The PISC and Site Closure Plan has been designed to meet the requirements of 40 CFR 146.93. The estimated financial assurance coverage value for this GS activity includes the cost categories summarized in Table 9-5, while the plan itself is discussed in Section 7 – Post-Injection Site Care and Site Closure Plan.

9.6.1 Post-Injection Monitoring

As discussed in Section 5 – Testing and Monitoring Plan, surface seismic and pressure and temperature monitoring will be conducted during operation and after the end of injection to assess the integrity of the well and to track the migration of the CO2 plume and brine pressure front.

9.6.2 Site Closure Plan

Site closure will occur when the UIC Program Director has released the owner from PISC duties and the demonstration of non-endangerment for USDWs has been approved. The estimated financial assurance coverage value for this GS activity is summarized in Table 9-5 and reflects the expected amount to decommission and close the site.

Table 9-5: Summary of Estimated PISC and Site Closure Costs Underpinning Financial Assurance Coverages

GS Activity	Estimated Financial Assurance Coverage Value	Total
Claimed as PBI		

GS Activity	Estimated Financial Assurance Coverage Value	Total
Claimed as PBI		
TOTAL		$11,420,000
Claimed as PBI		

9.7 Emergency and Remedial Response

The ERRP is discussed in Section 8 – Emergency and Remedial Response Plan and is designed to satisfy the requirements of 40 CFR 146.94, which necessitates an ERRP that describes actions ExxonMobil will take to address movement of injection or formation fluids that may cause an endangerment to a USDW during construction, operation, and PISC periods.

The financial assurance coverage value for ERR is estimated to be $8,608,000 in 2025 dollars and is summarized in Table 9-6. This estimate assumes coverage for the following event-based risk activities at the Project: mechanical integrity of injection well casing or cement seal, artificial penetrations of the UCCZ, mechanical integrity of operating equipment, and natural features affecting sealing properties of the UCCZ. Details regarding the approach used to develop the risk-based scenarios, the levels of severity considered, and the actions to be taken to avoid, monitor, respond, and notify the occurrence of risk events are summarized in detail in Section 8.

Table 9-6: Summary of Estimated ERR Costs Underpinning Financial Assurance Coverages

GS Activity	Estimated Financial Assurance Coverage Value
Claimed as PBI	
TOTAL	$8,608,000

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Appendix J Financial Assurance

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Appendix J-1: Independently Audited Financial Statements

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Appendix J-2: Executed Corporate Guarantee

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Appendix J-3: Letter from Chief Financial Officer

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Appendix J-4: EEHC Certification

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Appendix J-5: Cost Estimate and Documentation for TAC §5.205

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