

**RAILROAD COMMISSION OF TEXAS
OIL AND GAS DIVISION**

Form H-1
05/2004

APPLICATION TO INJECT FLUID INTO A RESERVOIR PRODUCTIVE OF OIL OR GAS

1. Operator name Crossroads Operating, LLC 2. Operator P-5 No. 190710
(as shown on P-5, Organization Report)

3. Operator Address 400 E Loop 250 North, Suite 104; Midland TX 79705

4. County Fisher 5. RRC District No. 7B

6. Field Name Round Top (Palo Pinto Reef) 7. Field No. 78567500

8. Lease Name Round Top/Palo Pinto Reef/ Unit 9. Lease/Gas ID No. 11416

10. Check the Appropriate Boxes: New Project Amendment

If amendment, Fluid Injection Project No. F- 3658

Reason for Amendment: Add wells Add or change types of fluids Change pressure

Change volume Change interval Other (explain) _____

RESERVOIR DATA FOR A NEW PROJECT

11. Name of Formation Palo Pinto Reef 12. Lithology Limestone
(e.g., dolomite, limestone, sand, etc.)

13. Type of Trap Reef Structure 14. Type of Drive during Primary Production Solution Gas
(anticline, fault trap, stratigraphic trap, etc.)

15. Average Pay Thickness 90 ft. 16. Use/Unit Acreage 4696 17. Current Bottom Hole Pressure (psig) 1500

18. Average Horizontal Permeability (mds) 5.7 19. Average Porosity (%) 10.7%

INJECTION PROJECT DATA

20. No. of Injection Wells in this application 1

21. Type of Injection Project: Waterflood Pressure Maintenance Miscible Displacement Natural Gas Storage

 Steam Thermal Recovery Disposal Other _____

22. If disposal, are fluids from leases other than the lease identified in Item 9? Yes No

23. Is this application for a Commercial Disposal Well? Yes No

24. If for commercial disposal, will non-hazardous oil and gas waste other than produced water be disposed? Yes No

25. Type(s) of Injection Fluid:

Salt Water Brackish Water Fresh Water CO₂ N₂ Air H₂S LPG NORM

Natural Gas Polymer Other (explain) _____

26. If water other than produced salt water will be injected, identify the source of each type of injection water by formation, or by aquifer and depths, or by name of surface water source:

<p>FILED FOR RECORD</p> <p align="center">CERTIFICATE</p> <p>I declare under penalties prescribed in Sec. 914.43, Texas Natural Resources Code, that I am authorized to make this report, that this report was prepared by me or under my supervision and direction, and that the data and facts stated therein are true, correct, and complete, to the best of my knowledge.</p> <p align="right">PAT MOWEN</p>	<p align="right"><i>Mark Henkhaus</i></p> <p align="right"><u>12/04/2020</u></p>
	<p>Signature _____ Date _____</p> <p>Name of Person (type or print) _____</p> <p> <u>Mark Henkhaus, PE</u></p> <p> <u>Consultant</u></p> <p>Phone <u>432-894-1857</u> Fax _____</p>

For Office Use Only

BY [Signature] DEPUTY REGISTER COUNTY, TEXAS Register No. _____ Amount \$ _____

See Reverse Side for Required Attachments

INSTRUCTIONS FOR FORM H-1

1. **Application.** File the original Form H-1 application, including all attachments, with Assistant Director, Environmental Services, Railroad Commission of Texas, P. O. Box 12967, Capitol Station, Austin, Texas 78711. File one copy of the application and all attachments with the appropriate Railroad Commission District Office. Include with the original application a non-refundable fee of \$200, payable to the Railroad Commission of Texas. Submit an additional \$150 for each request for an exception to Statewide Rule 46(g)(3) and/or (j)(5)(B).
2. **Well Logs.** Attach the complete electric log or a similar well log for one of the proposed injection wells or for a nearby well. Attach any other logging and testing data, such as a cement bond log, available for the well that supports this application.
3.
 - (a) **For a new project,** attach a map with surveys marked showing the location and depth of all wells of public record within one-quarter (1/4) mile radius of the proposed injection well(s).
 - (b) **For an amendment to add wells to a previous authority,** attach a map with surveys marked showing the location and depth of all wells of public record within one-quarter (1/4) mile radius of the additional wells, unless such data has been submitted previously for the project.
 - (c) **Table of Wells.** For those wells in 3(a) or 3(b) that penetrate the top of the injection interval, attach a table of wells showing the dates drilled and their current status. The Commission may adjust or waive this data requirement in accordance with provisions in the "Area of Review" section of Statewide Rule 46 (Rule 46(e)).
4. **Water Letter.** Attach a letter from the Texas Commission on Environmental Quality (TCEQ) or its predecessor or successor agencies for a well within the project area stating the depth to which usable quality water occurs.
5. **Form(s) H-1A.** Attach Form H-1A showing each injection well to be used in the project. Up to TWO wells can be listed on each Form H-1A.
6. **Use of Fresh Water.** Attach Form H-7, Fresh Water Data Form, for a new injection project that includes the use of fresh water. An updated Form H-7 must be attached to Form H-1 for an expansion of a previously authorized fresh water injection project unless the fresh water is purchased from a commercial supplier, public entity, or from another operator.
7. **Plat of Leases, Notice and Hearings**
 - (a) **Plat of Leases.** Attach a plat of leases showing producing wells, injection wells, offset wells and identifying ownership of all surrounding leases within one-half (1/2) mile.
 - (b) **Notice.**
 - (1) Send or deliver a copy of the application to the owner of record of the surface tract on which the well(s) is located; each Commission-designated operator of any well located within one-half (1/2) mile of the proposed injection well(s); and the clerk of the city and county in which the well(s) is located. If this is the initial application for fluid injection authority for this reservoir, send copies of the application to all operators in the reservoir. Attach a signed statement indicating the date the copies of the application were mailed or delivered and the names and addresses of the persons to whom copies were sent.
 - (2) **Attach an affidavit of publication** signed by the publisher that notice of the application has been published in a newspaper of general circulation in the county where the well(s) will be located. Notice instructions and forms may be obtained from the Commission's Austin Office, the Commission's website (www.rrc.state.tx.us) or the District Offices. Attach a newspaper clipping of the published notice.
 - (c) **Protests and Hearings.** An affected person or local government may protest this application. A hearing on the application will be held if a protest is received and the applicant requests a hearing, or if the Commission determines that a hearing is in the public interest. Any such request for a public hearing shall be in writing and contain: (1) the name, mailing address and phone number of the person making the request; and (2) a brief description of how the protestant would be adversely affected by the granting of the application. If the Commission determines that a valid protest has been received, or that a hearing would be in the public interest, a hearing will be held after issuance of proper and timely notice of the hearing by the Commission. If no protest is received within fifteen (15) days of publication or receipt in Austin of the application, the application may be processed administratively.

RAILROAD COMMISSION OF TEXAS -- OIL AND GAS DIVISION

Form H-1A

INJECTION WELL DATA (attach to Form H-1)

1. Operator Name (as shown on P-5) Crossroads Operating, LLC						2. Operator P-5 No. 190710		
3. Field Name Round Top (Palo Pinto Reef)						4. Field No. 78567500		
5. Current Lease Name Round Top/Palo Pinto Reef/Unit						6. Lease/Gas ID No. 11416		
7. Lease is 8.3 miles in a Westerly direction from Hamlin (center of nearest town).								
8. Well No. 188	9. API No. 42-151-32278	10. UIC No. 74368	11. Total Depth 5050	12. Date Drilled 3/26/1991	13. Base of Usable Quality Water (ft) 125 ft			
14. (a) Legal description of well location, including distance and direction from survey lines: 330 ft FSL, 1525 ft FEL, T R Taylor Sur								
(b) Latitude and Longitude of well location, if known (optional) Lat. 32.874672 Long. -100.269223								
15. New Injection Well <input type="checkbox"/> or Injection Well Amendment <input checked="" type="checkbox"/>				Reason for Amendment: Pressure <input checked="" type="checkbox"/> Volume <input checked="" type="checkbox"/> Interval <input checked="" type="checkbox"/> Fluid Type <input type="checkbox"/>				
Other (explain) _____								
Casing	Size	Setting Depth	Hole Size	Casing Weight	Cement Class	# Sacks of Cement	Top of Cement	Top Determined by
16. Surface	8 5/8	210 ft	12 1/4	24	C	200	Circ	Obs
17. Intermediate								
18. Long string	5 1/2	5050 ft	7 7/8	15.5	C	1450	Circ	Obs
19. Liner	4 1/2	0-4395 ft	5 1/2	11.6 FJ	C	200	Circ	Obs
20. Tubing size 2 3/8	21. Tubing depth 4386 ft		22. Injection tubing packer depth 4386 ft			23. Injection interval 4394 ft to 4730 ft		
24. Cement Squeeze Operations (List all)			Squeeze Interval (ft)		No. of Sacks		Top of Cement (ft)	
8/2016, remedial cmt sq prior to liner			231-252 ft		100 C		Sq HIC, TOC @ surf	
25. Multiple Completion? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			26. Downhole Water Separation? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			NOTE: If the answer is "Yes" to Item 25 or 26, provide a Wellbore Sketch.		
27. Fluid Type Produced Saltwater			28. Maximum daily injection volume for each fluid type (rate in bpd or mcf/d) 9500 BHPD			29. Estimated average daily injection volume for each fluid type (rate in bpd or mcf/d) 4000 BHPD		
30. Maximum Surface Injection Pressure: for Liquid 2197 psig for Gas _____ psig.								
8. Well No.	9. API No.	10. UIC No.	11. Total Depth	12. Date Drilled	13. Base of Usable Quality Water (ft)			
14. (a) Legal description of well location, including distance and direction from survey lines:								
(b) Latitude and Longitude of well location, if known (optional): Lat. _____ Long. _____								
15. New Injection Well <input type="checkbox"/> or Injection Well Amendment <input type="checkbox"/>				Reason for Amendment: Pressure <input type="checkbox"/> Volume <input type="checkbox"/> Interval <input type="checkbox"/> Fluid Type <input type="checkbox"/>				
Other (explain) _____								
Casing	Size	Setting Depth	Hole Size	Casing Weight	Cement Class	# Sacks of Cement	Top of Cement	Top Determined by
16. Surface								
17. Intermediate								
18. Long string								
19. Liner								
20. Tubing size	21. Tubing depth		22. Injection tubing packer depth			23. Injection interval _____ to _____		
24. Cement Squeeze Operations (List all)			Squeeze Interval (ft)		No. of Sacks		Top of Cement (ft)	
FILED FOR RECORD								
25. Multiple Completion? Yes <input type="checkbox"/> No <input type="checkbox"/> DEC 7 2020			26. Downhole Water Separation? Yes <input type="checkbox"/> No <input type="checkbox"/>			NOTE: If the answer is "Yes" to Item 25 or 26, provide a Wellbore Sketch		
27. Fluid Type			28. Maximum daily injection volume for each fluid type (rate in bpd or mcf/d)			29. Estimated average daily injection volume for each fluid type (rate in bpd or mcf/d)		
COUNTY CLERK, FIDELITY COUNTY, TEXAS								
30. Maximum Surface Injection Pressure: for Liquid _____ psig for Gas _____ psig.								

FORM H-1A INSTRUCTIONS

05/2004

1. File as an attachment to Form H-1 to provide injection well data for each application for a new injection well permit or to amend an injection well permit.
2. Complete the current field name and number (Items 3 and 4) with the current field designation in Commission records.
3. Complete the current lease name and number (Items 5 and 6) with the current lease identification in Commission records for each well in the application. Use separate H-1A Forms for each lease.
4. Provide the current well number(s) for existing wells in Item 8. Provide the proposed well numbers for wells that have not yet been drilled.
5. ~~Check in Item 15 the appropriate box for a new injection well permit or an amendment to an injection well permit. If an amendment, check the appropriate boxes for the reason(s) for the application(s) for amendment. If "other" is checked, provide a brief explanation.~~
6. Provide complete well construction information (Items 16 through 26), including all proposed re-completion (e.g. liner, cement squeeze, tubing, packer). Attach additional sheets if necessary. For Item 19, if the liner was not to the surface, indicate both the top and the bottom depth of the liner as the "Setting Depth."

STATE OF TEXAS
COMMISSION ON CREATION OF A NEW INJECTION WELL PERMIT OR AMENDMENT TO AN INJECTION WELL PERMIT
FORM H-1A INSTRUCTIONS
APPLICANT'S NAME: _____
APPLICANT'S ADDRESS: _____
APPLICANT'S PHONE NUMBER: _____
APPLICANT'S E-MAIL ADDRESS: _____
APPLICANT'S SIGNATURE: _____
DATE: _____