

**STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION**

**IN THE MATTER OF THE HEARING CALLED BY
THE OIL CONSERVATION DIVISION FOR THE
PURPOSE OF CONSIDERING:**

**CASE NO. 21130
ORDER NO. R-21348**

**APPLICATION OF TEXLAND PETROLEUM-HOBBS L.L.C. FOR APPROVAL OF A
WATERFLOOD UNIT AGREEMENT, AUTHORIZATION TO INJECT INTO THE
MURPHY #1 WELL, AND TO QUALIFY FOR THE RECOVERED OIL TAX RATE, LEA
COUNTY, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 am on March 5, 2020, at Santa Fe, New Mexico, before Examiner Kathleen Murphy.

NOW, on this 10th day of June, 2020 the Division Director, having considered the testimony, the record, and the recommendations of the Examiner,

FINDS THAT:

(1) Due public notice has been given, and the Division has jurisdiction of this case and its subject matter.

(2) No other party appeared at the hearing or otherwise opposed the application.

(3) The Applicant, Texland Petroleum- Hobbs L.L.C, (“Texland”), (OGRID 113315) seeks approval for its Knowles Garrett Waterflood Unit (“Unit”) and establishment of its waterflood project within the Drinkard formation. Applicant also seeks to convert its Murphy #1 well to injection, and to covert future wells within the Unit area to injection administratively. Applicant further seeks to qualify the project for an incentive tax rate under the Enhanced Oil Recovery Act.

(4) The proposed area for the Knowles Garrett Unit consists of 240 acres of Fee mineral land, situated in Lea County, New Mexico:

Township 16 South, Range 38 East, NMPM

Section 30: SE/4 NW/4, S/2 NE/4

Section 29: SW/4 NW/4, E/2 NW/4

- (5) Applicant is proposing to convert an existing producing oil well to an injector well within the unit for use in the waterflood operation:
- (a) **Murphy #1 Well**
(API 30-025-37372)
1705 FNL, 2220 FEL
Unit letter G, Section 30-16S-38E
- (6) Applicant appeared at the hearing through counsel and presented the following testimony:
- (a) The vertical limits of the Unitized Formation to be included within the proposed Unit area shall mean that stratigraphic interval “constituting a continuous interval beginning one hundred feet above the top of the Drinkard formation and continuing to one hundred feet below the base of the Drinkard formation, more particularly described as correlative to the interval between 8,145 feet and 8,748 feet beneath the surface of the ground as shown on the Gamma Ray Compensated Neutron-Density Log in Yates Petroleum's Lazarus ARV No. 1 well, located 2,100 feet from the North line and 990 feet from the East line of Section 30, Township 16 South, Range 38 East, N.M.P.M., Lea County, New Mexico.”
- (b) The Unit is located entirely in the Garrett; Drinkard Pool (Pool Code 27130). The Drinkard Formation in this area has been defined by development of existing wells and plugged and abandoned wells.
- (c) Enhanced recovery by waterflooding has been successful in similar units to the northeast in Texas, which are also located in the Drinkard formation.
- (d) Applicant has described the proposed injection zone in the Drinkard formation at a depth of approximately 8,212 to 8,451 feet. The proposed injector, the Murphy #1 is currently perforated at these approximate depths.
- (e) The reservoir units in the Drinkard formation were deposited as complex of shoals near the Drinkard shelf margin. The shelf margin is part of a regional trend that extends 80 miles into Texas, with good production and the same depositional systems. The dolomites reservoir rocks experienced secondary dolomitization from exposure, which enhanced their porosity and permeability. The units are dominated by packstones with vuggy porosity. Porosity ranges from 2% to as much as 12%. Permeability varies from 1 to 3 mD. The targeted interval is continuous and persistent throughout the proposed unit.
- (f) The unit is confined laterally due to changes in lithology due to depositional processes. The shoal units were bisected by pervasive tidal channels during

regression of sea level. These tidal channels disrupted the shoaling lithology and defined lithologic units within the larger regional area. Lower porosity siltstone was deposited in these tidal channels. These smaller units will be the target reservoir of the waterflood unit.

- (g) The reservoir is confined immediately above by lower porosity siltstone deposited during regression, and below by anhydrite and dolomites in the lower Drinkard formation, which will prevent migration of injected fluids out of the injection interval. There are no faults or other geologic structures that would allow migration of the injected fluids out of the injection interval.
- (h) The injector well will be properly constructed to prevent migration of the injected fluid upward to any underground source of drinking water or other hydrocarbon-producing formation.
- (i) Applicant requests a maximum surface injection pressure of 1,642 psig, with an average surface injection pressure of 1,500 psig. The average daily injection rate will be 300 barrels per day, and the maximum will be 750 barrels per day in the initial project.
- (j) Applicant testified there are approximately 16 wells within one half mile of the proposed unit that penetrate the proposed injection interval. Of these, 10 are plugged and abandoned.
- (k) Applicant was able to compile sufficient completion or plugged and abandoned information for all of the 10 wells. Based on the available information and the assessment of the wellbore plugging, Applicant contends that each of the wells in the AOR is properly plugged and abandoned so that it will not become a conduit to allow migration of injected fluids out of the injection zone.
- (l) The source of injection fluids will be from the White #1, a disposal well that Texland operates. The White #1 was originally a Drinkard oil well that has been converted into a San Andres SWD which disposes Drinkard water into the San Andres formation. Texland will convert the SWD to a water supply well for the waterflood. Produced water analyses from a Drinkard well (the Stoval #1) and a San Andres well (the Sinai #1, a Texas well) have water quality of approximately 95,294 and 32,018 parts per million of Total Dissolved Solids (ppm TDS) respectively. The Sinai #1 was used for a sample as there were no San Andres production wells nearby to collect a water sample. When the White #1 is converted to a water supply well, the water compatibility analyses will be redone. No fluid compatibility issues are expected.

- (m) Applicant did locate one agriculture water well, the Stovall, within a one-mile radius (0.15 mi) of the Murphy #1 well. A second fresh water well, the Shelton, was located 0.7 miles from the Murphy #1 well. Chemical analyses from these two water wells were included in the C-108 application. Applicant testified there is no known hydrologic connection between the injection zone and any underground source of drinking water.
- (n) Applicant provided the required notices to affected persons pursuant to Subsection C of Division Rule 19.15.26.8 NMAC.
- (o) Applicant has 99 percent commitment of the working interest owners, ORRI and the royalty interest owners to the unit. There are five tracts in the proposed unit.

The Division concludes that:

(7) The proposed project should, in reasonable probability, result in production of substantially more hydrocarbons from the project area than would otherwise be produced therefrom, will prevent waste, and will not impair correlative rights.

(8) This application and proposed project should be approved.

IT IS THEREFORE ORDERED THAT:

(1) The Knowles Garrett Waterflood Unit Agreement executed by Texland Petroleum-Hobbs L.L.C (“Texland”), is hereby approved and designated the Knowles Garrett Unit for the following described 240 acres of fee mineral land in Township 16 South, Range 38 East, NMPM. Lea County NM

Township 16 South, Range 38 East, NMPM

Section 30: SE/4 NW/4, S/2 NE/4

Section 29: SW/4 NW/4, E/2 NW/4

(2) The application of Texland for authorization to inject produced water into the Knowles Garrett Unit is hereby approved. Texland is authorized to inject produced water into the Drinkard Pool (Pool Code 27130) through existing perforations in the proposed injection well from approximately 8,212 to 8,451 feet.

(3) The “Unitized Formation” as defined in the Unit Agreement for the Knowles Garrett Unit is the stratigraphic interval “constituting a continuous interval beginning one hundred feet above the top of the Drinkard formation and continuing to one hundred feet below the base of the Drinkard formation, more particularly described as correlative to the interval between 8,145 feet and 8,748 feet beneath the surface of the ground as shown on the Gamma Ray Compensated

Neutron-Density Log in Yates Petroleum's Lazarus ARV No. 1 well, located 2,100 feet from the North line and 990 feet from the East line of Section 30, Township 16 South, Range 38 East, N.M.P.M., Lea County, New Mexico.”

- (4) The following proposed well is approved for injection under this Order:
 - (a) Murphy #1 Well
(API 30-025-37372)
1705 FNL, 2220 FEL
Unit letter G, Section 30-16S-38E
- (5) Texland Petroleum- Hobbs L.L.C is hereby designated the Operator of the Unit.
- (6) Operator shall take all steps necessary to ensure that the injected fluid enters only the injection interval and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.
- (7) Injection shall be accomplished through plastic-lined tubing installed in a packer set in the casing within 100 feet of the uppermost injection perforations. The casing-tubing annulus shall be filled with an inert fluid, and a gauge or approved leak-detection device shall be attached to the annulus in order to detect leakage in the casing, tubing or packer.
- (8) Each injection well shall pass a mechanical integrity test prior to initial commencement of injection and prior to resumption of injection each time the injection packer is unseated. All testing procedures and schedules shall conform to the requirements of Division Rule 19.15.26.11.A NMAC. The Division Director retains the right to require at any time wireline verification of completion and packer setting depths.
- (9) The maximum surface injection pressure for the initial well of this waterflood project shall be limited to no more than 1,642 psi (calculated using the gradient of 0.2 psi per foot and the depth to the shallowest perforation). Each injection well shall be equipped with a pressure limiting device in workable condition which shall, at all times, limit surface tubing pressure to the maximum surface injection pressure for that well. The Director may authorize an increase in surface tubing pressure upon a proper showing by the Operator of this initial well that such higher pressure will not result in migration of the injected fluid from the approved injection interval or impact correlative rights. Such proper showing shall be demonstrated by sufficient evidence including but not limited to an acceptable Step-Rate Test.
- (10) The Division Director may administratively authorize an increase in the maximum injection pressure upon a showing by the Operator that such higher pressure will not result in fracturing of the injection formation or confining strata.
- (11) The Division Director may administratively authorize additional injection wells within the Unit as provided in Division Rule 19.15.26.8G.(5) NMAC without the necessity for further hearings.

(12) For each injection well, the Operator shall give at least 72 hours advance notice to the supervisor of the Division's Hobbs District Office of the date and time (i) injection equipment will be installed, and (ii) the mechanical integrity pressure tests will be conducted, so that these operations may be witnessed.

(13) The operator shall provide written notice of the date of commencement of injection operations into each well to the Hobbs District Office.

(14) The Knowles Garrett Unit Waterflood Project is hereby certified to the New Mexico Taxation and Revenue Department as an "Enhanced Oil Recovery Project" pursuant to the "Enhanced Oil Recovery Act" (NMSA 1978 Sections 7-29A-1 through 7-29A-5).

(15) The area to be affected by the enhanced oil recovery project shall consist of the area within the Knowles Garrett Unit; however, the area and/or the producing wells eligible for the enhanced oil recovery (EOR) tax rate may be contracted or expanded based upon the evidence presented by the unit operator in its demonstration of a positive production response.

(16) At such time as a positive production response occurs, and within five years from the date the project was certified to the New Mexico Taxation and Revenue Department, the unit Operator must apply to the Division for certification of a "positive production response." This application for "positive production response" shall identify the area benefiting from enhanced oil recovery operations and the specific wells eligible for the EOR tax rate.

(17) The Division may review the application administratively or set it for hearing. Based upon the evidence presented, the Division will certify to the New Mexico Taxation and Revenue Department those wells that are eligible for the EOR tax rate.

(18) The injection authority granted under this Order is not transferable except upon Division approval. The Division may require the operator to demonstrate mechanical integrity of any injection well that will be transferred prior to approving transfer of authority to inject.

(19) The operator shall immediately notify the supervisor of the Division's Hobbs District Office of the failure of the tubing, casing or packer in any of the injection wells, or the leakage of water, oil, gas or other fluid from or around any producing or abandoned well within one-half mile of the injection well, and shall take all steps as may be timely and necessary to correct such failure or leakage.

(20) The Project shall be governed by applicable provisions of Division Rules 19.15.26.8 through 26.15 NMAC. Operator shall submit monthly reports of the injection operations on Division Form C-115, in accordance with Division Rules 19.15.26.13 and 19.15.7.28 NMAC.

(21) The injection authority granted herein shall terminate two years after the effective date of this order if the operator has not commenced injection operations; provided, however, the

Division, upon written request by the Operator filed prior to the expiration of the two-year time period, may grant an extension for good cause.

(22) In accordance with Division Rule 19.15.26.12.C NMAC, the injection authority granted herein shall terminate, if after injection commences, any continuous period of one year elapses without reported injection into any authorized injection well in the project area occurring; provided, however, the Division, upon written request by Operator filed prior to the expiration of the one-year period of non-injection, may grant an extension for good cause.

(23) Operator shall provide written notice to the Division upon permanent cessation of injection into the Project.

(24) This Order does not relieve Operator of responsibility should its operations cause any actual damage or threat of damage to protectable fresh water, human health or the environment; nor does it relieve the operator of responsibility for complying with applicable Division rules or other state, federal or local laws or regulations.

(25) Upon failure of the operator to conduct operations (1) in such manner as will protect fresh water, or (2) in a manner consistent with the requirements in this order, the Division may, after notice and hearing, (or without notice and hearing in event of an emergency), terminate the injection authority granted herein.

(26) Jurisdiction of this case is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

A handwritten signature in black ink, appearing to read 'AS', is positioned above the printed name and title of the signatory.

ADRIENNE SANDOVAL
Director