

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. 14552  
ORDER NO. R-153-A

APPLICATION OF BOPCO, L.P. FOR  
APPROVAL OF A PILOT WATERFLOOD  
PROJECT IN THE DELAWARE  
FORMATION IN THE POKER LAKE UNIT,  
EDDY COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on October 28, 2010, at Santa Fe, New Mexico, before Examiner David K. Brooks.

NOW, on this 12th day of January, 2011, the Division Director, having considered the testimony, the record and the recommendations of the Examiners,

FINDS THAT:

- (1) Due notice has been given, and the Division has jurisdiction of the subject matter of this case.
- (2) By this application, BOPCO, L.P. ("Applicant") seeks approval of a pilot waterflood project in the Nash Draw-Delaware/Bone Spring (Avalon Sand) Pool (81560), within the Poker Lake Unit Area in Eddy County, New Mexico.
- (3) Applicant proposes to inject water into the lower Brushy Canyon Y Zone, within a depth interval from 6,950 to 7,300 feet below the surface, through five injection wells, as follows:

Poker Lake Unit Well No. 188Y  
API No. 30-015-33776  
695 feet FNL and 1880 feet FWL  
Lot 3, Section 5, Township 24 South, Range 30 East

The Poker Lake Unit Well No. 188Y is an existing salt water disposal well, permitted for injection pursuant to Administrative Order SWD-1065-A, issued on November 2, 2007. The permitted disposal interval for this well is 7320 feet to 7330 feet, with a pressure limit of 1,464 psi surface injection pressure.

Poker Lake Unit Well No. 150  
API No. 30-015-31538  
760 feet FNL and 330 feet FEL  
Unit A, Section 6, Township 24 South, Range 30 East

Poker Lake Unit Well No. 151  
API No. 30-015-31595  
510 feet FNL and 1980 feet FEL  
Unit B, Section 6, Township 24 South, Range 30 East

Poker Lake Unit Well No. 162  
API No. 30-015-35522  
660 feet FNL and 1855 feet FWL  
Unit C, Section 6, Township 24 South, Range 30 East

Poker Lake Unit Well No. 166  
API No. 30-015-31695  
660 feet FNL and 660 feet FWL  
Lot 4, Section 5, Township 24 South, Range 30 East

The Poker Lake Unit Wells Nos. 150, 151, 162 and 166 are existing producing wells which Applicant seeks to permit for injection by this application.

(4) At the hearing, Applicant appeared through counsel and presented testimony and exhibits to the effect that:

(a) All of the injection wells, and all of the spacing units adjacent thereto, are included in the Poker Lake Unit Area. Applicant is the operator and the sole working interest owner of the Poker Lake Unit. All of the proposed injection wells are located on federal surface lands.

(b) The Poker Lake Unit Well No. 188Y is an existing salt water disposal well which was placed on injection in 2007. Applicant has injected 2.3 million barrels of water into the proposed injection interval through this well.

(c) Since injection was commenced into the Well No. 188Y, production has increased from wells located to the southwest of that well.

(d) The Lower Brushy Canyon Y Zone is continuous across the area of contemplated operations. The fracture plane of the formation is northeast to southwest.

(e) Applicant now proposes to inject up to 250 barrels of water per day, per well, into the Well No. 188Y and each of the proposed additional injection wells, at injection pressures not to exceed 5200 psi bottomhole injection pressure (or a bottomhole injection pressure which corresponds to a surface injection pressure that does not exceed 0.2 psi per foot of depth to the highest perforation). The injection fluid will be produced water from the Delaware formation in the Unit Area.

(f) Applicant anticipates that additional production from the Unit Area of 72 million barrels of oil over a period of 15 to 25 years. Estimated total project costs are \$667,678. Additional operating costs due to implementation of the project are expected to be insignificant. The project is technically and economically feasible.

(g) The proposed injection wells will be completed so that injected fluids will be confined to the injection zone and will not move into other formations.

(h) The Rustler formation is a known source of fresh water throughout this geologic area, but is encountered at depths less than 600 feet subsurface. There are no fresh water wells within one mile of any of the proposed injection wells.

(i) Applicant has examined the available geologic and engineering data and has found no evidence of open faults or other hydrologic connection between the disposal zone and any underground source of drinking water.

(j) There are no plugged or abandoned wells within the one-half mile area of review (AOR) of any of the proposed injection wells.

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

The Division concludes that:

(6) The Poker Lake Unit is an existing voluntary unit that was approved by the Oil Conservation Commission by Order No. R-153, issued on May 1, 1952.

(7) Pursuant to Rule 26.13.G(2) and the evidence presented in this case, the project area for the proposed pilot waterflood project should initially comprise the following lands in Eddy County, New Mexico:

**Township 23 South, Range 30 East**

Section 31: SE/4 SW/4 and S/2 SE/4

Section 32: SW/4 SW/4

**Township 24 South, Range 30 East**

Section 5: Lots 3 and 4 (N/2 NW/4) and SW/4 NW/4

Section 6: NE/4 and E/2 NW/4

(8) No remedial work on wells in the AOR need be required prior to commencement of injection.

(9) Applicant should be authorized to inject fluids at a surface injection pressure not to exceed 0.2 psi times the depth of the shallowest perforation in each permitted injection well; provided that Applicant may apply to the Division for a higher injection pressure upon satisfactorily demonstrating that an increase in injection pressure will not result in fracturing of the injection formation or confining strata.

(10) The proposed project will, in reasonable probability, prevent waste, and will not impair correlative rights.

(11) Accordingly, the application should be approved.

**IT IS THEREFORE ORDERED THAT:**

(1) BOPCO, L.P. [OGRID 260737] ("BOPCO" or "Operator") is hereby authorized to inject produced water from the Delaware formation into the Brushy Canyon member of the Delaware formation through injection intervals at depths from approximately 6950 feet to 7300 feet below the surface.

(2) This project is hereby designated the Poker Lake Unit Delaware Pilot Waterflood Project. BOPCO is designated operator of the project.

(3) The Poker Lake Unit Delaware Pilot Waterflood Project shall initially comprise the following lands in Eddy County, New Mexico:

**Township 23 South, Range 30 East**

Section 31: SE/4 SW/4 and S/2 SE/4

Section 32: SW/4 SW/4

**Township 24 South, Range 30 East**

Section 5: Lots 3 and 4 (N/2 NW/4) and SW/4 NW/4

Section 6: NE/4 and E/2 NW/4

(4) The Division Director may expand the project area, and/or authorize permit additional injection wells, by administrative order.

(5) Applicant is authorized to inject into the Poker Lake Unit Wells Nos. 150, 151, 162 and 166, described in Finding Paragraph (3) of this Order, subject to the terms and conditions herein provided.

(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 2-7/8 inch, plastic-lined steel tubing installed in a packer set in the intermediate casing below the top of the injection formation and 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) Prior to commencing injection operations into any of the injection wells except the already permitted Poker Lake Unit Well No. 188Y, the casing in the injection well shall be pressure tested throughout the interval from the surface down to the packer setting depth to assure the integrity of such casing.

(9) Each injection well shall be initially equipped with a pressure control device or acceptable substitute that will limit the surface injection pressure to not to exceed 1,390 psi.

(10) The Division Director shall have the authority to administratively authorize an increase in 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) For each injection well, the operator shall give at least 72 hours advance notice to the supervisor of the Division's Artesia District Office of the date and time (i) injection equipment will be installed, and (ii) the mechanical integrity pressure tests will be conducted, so these operations may be witnessed.

(12) The operator shall provide written notice of the date of commencement of injection into each well to the Division's Artesia District Office.

(13) The operator shall immediately notify the supervisor of the Division's Artesia 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 ½ mile of the injection well, and shall timely take all steps as may be necessary to correct such failure or leakage.

(14) The project shall be governed by Division Rules 26.8 through 26.15. The operator shall submit monthly reports of the injection operations on Division Form C-115, in accordance with Division Rules 26.13 and 7.28.

(15) In accordance with Rule 26.12.C, the injection authority granted herein shall terminate one year 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, may grant an extension for good cause.

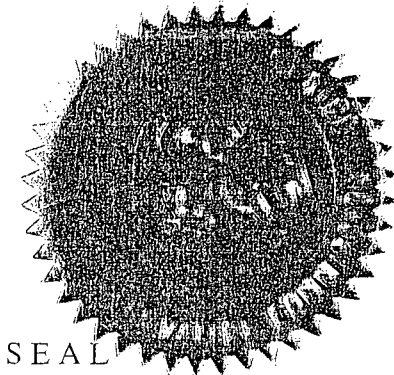
(16) Operator shall provide written notice to the Division upon permanent cessation of injection into the project.

(17) This order does not relieve Operator of responsibility should its operations cause any actual damage or threat of damage to protectible 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.

(18) 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, subject to the provisions of NMSA 1978 Section 70-2-23), terminate the injection authority granted herein.

(19) 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 dark ink, appearing to read "Daniel Sanchez", with a long horizontal flourish extending to the right.

DANIEL SANCHEZ  
Acting Director