

**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. 15036
ORDER NO. R-4697-B**

**APPLICATION OF CAPSTONE NATURAL RESOURCES
LLC FOR REINSTATEMENT OF AUTHORIZATION TO
INJECT FOR WATERFLOOD OPERATIONS,
EDDY COUNTY, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on September 5, 2013, at Santa Fe, New Mexico, before Examiner David K. Brooks.

NOW, on this 29th day of October, 2013, the Division Director, having considered the testimony, the record and the recommendations of the examiner,

FINDS THAT:

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

(2) By this application, ("Applicant") seeks reinstatement of a lease waterflood project in the Grayburg and San Andres formations (Grayburg-Jackson-San Andres Pool [28509]) within the proposed project area described below, in Eddy County, New Mexico.

Township 17 South, Range 31 East, NMPM
Section: 11: All

(3) Applicant proposes to reinstate waterflood operations to support production from this project area by resuming injection into three formerly authorized injection wells identified below, utilizing them for injection of water through a closed system into the Grayburg and San Andres formations through perforations at depths of

3,407 to 3,682 feet below the surface (Grayburg). and through perforations, or open hole, at depths of 3,700 to 4,014 feet (San Andres).

- (4) The proposed injection wells are the following:

Lea C Well No. 4
API No. 30-015-05132
1980 FSL & 1980 FEL
Unit J, Section 11-17S-31E

Lea C Well No. 7
API No. 30-015-20627
1980 FNL & 1980 FWL
Unit F, Section 11-17S-31E

Lea C Well No. 15
API No. 30-015-20706
1980 FNL & 660 FEL
Unit H, Section 11-17S-31E

- (5) At the hearing, Applicant presented testimony and exhibits to the effect that:

(a) Injection for waterflood into the project area through these same three injection wells was initially authorized by Order No. R-4697, issued in Case No. 5139 on January 15, 1974.

(b) Injection commenced in 1974, and production from the project area increased from 70 to 80 barrels of oil per day, up to 180 barrels of oil per day. A total of seven injectors were permitted by 1977. However, in 1994 all injectors were temporarily abandoned. Applicant acquired the property in April of 2012, and now seeks reinstatement of injection authority.

(c) Applicant proposes a maximum surface injection pressure of 681 psig and an average injection rate of 100 barrels of water per day, with a maximum of 300 barrels of water per day. Applicant may subsequently request higher injection pressures, and accordingly requests that the Director be authorized to approve injection pressure increases by administrative order.

(d) The water that will be injected is produced water from wells in the vicinity and has a quality of approximately 81,000 parts per million Total Dissolved Solids (ppm TDS). There are no fluid compatibility issues.

(e) The Grayburg and San Andres in this area have been totally defined by development.

(f) The entire project area consists of a single federal oil and gas lease. Applicant owns 100% of the working interest.

(g) Applicant estimates recovery of another 58,000 barrels of oil from secondary recovery operations on this lease.

(h) Anhydrites above the top of the Grayburg form a barrier that will prevent upward migration of injected fluids out of the injection zone. There are no faults or other geologic structures that would allow migration of the injected fluids out of the injection zone.

(i) Each of the three injection wells is properly constructed to prevent migration of the injected fluid upward to any underground source of drinking water or other hydrocarbon producing formation.

(j) Most of the wells in the one-half mile area of review (AOR) surrounding each of the proposed injection wells are currently producing. There are three wells in the AOR that are plugged and abandoned. Each is properly plugged so that it will not become a conduit to allow migration of injected fluids out of the injection zone.

(k) There are no fresh water wells within the AOR, and there is no known hydrologic connection between the injection interval and any underground source of drinking water.

(6) No other party appeared at the hearing or otherwise opposed the application, except that the United States Bureau of Land Management sent the Division a letter of opposition to this Application, which it subsequently withdrew.

The Division concludes that:

(7) The proposed project will, 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, and should be authorized.

(8) All of the plugged and abandoned wells in the AOR appear to be adequately plugged, so that none of them will become a conduit for the escape of injected fluid from the permitted injection formation.

(9) The expired Temporarily Abandoned Lea C Federal Well No. 11 (API No. 30-015-20679) should be worked over and returned to production, or properly abandoned before commencement of injection operations into the injection wells.

(10) Applicant should be authorized to inject fluids at a surface injection pressure not to exceed 681 psi; 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.

(11) Accordingly, the application should be approved.

IT IS THEREFORE ORDERED THAT:

(1) The application of Capstone Natural Resources, LLC ("Capstone" or "Operator") for reinstatement of a Lease Waterflood Project is hereby approved. Capstone is authorized to inject produced water into the Grayburg and San Andres formations, Grayburg-Jackson-San Andres Pool (28509) through the following existing formerly permitted injection wells:

Lea C Well No. 4
API No. 30-015-05132
1980 FSL & 1980 FEL
Unit J, Section 11-17S-31E

Lea C Well No. 7
API No. 30-015-20627
1980 FNL & 1980 FWL
Unit F, Section 11-17S-31E

Lea C Well No. 15
API No. 30-015-20706
1980 FNL & 660 FEL
Unit H, Section 11-17S-31E

(2) Injection shall be through perforated intervals from 3,407 feet to 3,682 feet, 3,700 feet to 4,014 feet.

(3) This project is hereby designated the **Lea C San Andres Waterflood Project**, and shall comprise the following lands in Eddy County, New Mexico:

Township 17 South; Range 31 East, NMPM
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(4) Capstone Natural Resources LLC (OGRID 289372) is designated operator of the project.

(5) 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.

(6) The injection well(s) shall be cased with 8 5/8ths-inch surface casing set at approximately 610 to 894 feet below the surface and cemented to the surface, and 5 1/2

-inch injection string casing set at the levels shown in the wellbore diagrams on Pages 5, 6 and 7 of the attachments to the Form C-108 admitted in evidence.

(7) Injection shall be accomplished through plastic-lined steel tubing installed in a packer set in the 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) The 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 injection well shall be initially equipped with a pressure control device or acceptable substitute that will limit the surface injection pressure to no more than 681 psi.

(10) The Division Director shall have the authority to 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) For each injection well, the operator shall give at least 72 hours advance notice to the supervisor of the Division's 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 Artesia District Office of the Division.

(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 one-half mile of the injection well, and shall take all steps as may be timely and necessary to correct such failure or leakage.

(14) 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.

(15) 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.

(16) 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.

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

(18) 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.

(19) 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.

(20) 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

JAMI BAILEY
Director