

**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 THE:**

**APPLICATION OF ENDURANCE RESOURCES LLC FOR APPROVAL OF A
PRESSURE MAINTENANCE PROJECT, EDDY COUNTY, NEW MEXICO**

**CASE NO. 14800
ORDER NO. R-13616**

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on March 15, 2012, at Santa Fe, New Mexico before Examiner David K. Brooks.

NOW, on this 13th day of August, 2012, 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) Endurance Resources LLC ("Endurance" or "applicant"), seeks approval to institute a lease Pressure Maintenance Project into the Brushy Canyon formation, South Carlsbad-Delaware Pool (Pool Code 9692), within its Baseball Park Lease, through conversion to injection of one well, the Baseball Park Well No. 1 (API No. 30-015-24974) located 1980 feet from the South line and 660 feet from the East line, Unit letter I of Section 24, Township 22 South, Range 26 East, NMPM, Eddy County, New Mexico.
- (3) Endurance submitted to the Division in July of 2011 an administrative application for salt water disposal into this well. The Division directed Endurance to set the matter for hearing due to (among other things) the presence of producing wells within one half mile of the proposed well in the proposed disposal interval. The case was heard March 15, 2012, but the decision was delayed until August 2012 due to bonding requirements of 19.15.5.9 NMAC.
- (4) The Baseball Park Lease covers the following lands within Eddy County, New Mexico:

Township 22 South, Range 26 East, NMPM

Section 24: SE/4, S/2 NE/4

Township 22 South, Range 27 East, NMPM

Section 19: NW/4 SW/4

(5) Endurance requests permission to convert the Baseball Park Well No. 1 (the "proposed well") from a depleted, inactive oil well to injection of oil field produced water into the Brushy Canyon member of the Delaware Mountain Group from perforated depths of 4052 feet to 4690 feet.

(6) Endurance presented exhibits and testimony from a geologist and engineer indicating the following:

(a) Endurance operates the Baseball Park lease where the disposal costs of produced water have risen to almost uneconomic levels.

(b) The proposed injection well is needed to handle lease produced waters and is expected to easily take this volume of produced water.

(c) The proposed well was spud in 1984 and has been largely depleted in the Cherry Canyon and Brushy Canyon formations. It has the highest water-cut of adjacent producers. The Cherry Canyon perforations must be squeezed in order to use this well for injection into the Brushy Canyon formation.

(d) Endurance needs this well primarily for water disposal purposes; however, Endurance expects a small positive effect on its producers from water injection into the proposed well.

(e) The previous disposal well located nearby to the southwest was used for many years but finally pressured up and has been plugged.

(f) This reservoir seems to have a water drive but not bottom water or high initial water saturations.

(g) There are fresh water wells within one mile of the proposed well. Any fresh waters will be protected by surface casing and cement.

(h) The fresh water bearing Capitan Reef is located laterally to the northwest and in part vertically uphole in this well.

(7) Endurance did not present testimony from a Landman, but has represented at the hearing that it is the operator of the Baseball Park lease. Endurance has indicated the proposed well located in Unit letter I of Section 24 is the only well it intends to use for injection purposes and did not present proposed or prospective waterflood patterns over the extent of this lease.

(8) Within one half mile from the proposed injection well, there are 11 total wells drilled to this depth. Four of those are plugged and abandoned. Division records indicate that one of the plugged and abandoned wells, the Chi Merland Well No. 1 (API No. 30-015-26266) located in Unit letter M of Section 19 was drilled to 4550 feet and plugged without running pipe. The first plug was set with bottom of plug at 2785 feet from surface, so the interval from 4550 feet up to 2785 feet is open in that well. This plugged, dry hole should be re-entered and re-plugged so as to confine the equivalent depths of the proposed disposal interval. All other Area of Review wells seem to be adequately cased and cemented so as to protect any underground fresh waters and to adequately isolate the intended injection interval within the Brushy Canyon formation.

(9) The Merland Well No. 1 (API No. 30-015-22980) located in Unit letter O of Section 24 was previously used for water disposal into the Cherry Canyon formation from 3670 feet to 3720 feet. This disposal was permitted by Order No. R-8569 issued in Case No. 9189 on December 22, 1987. The testimony presented in that case indicates the possibility of Capitan Reef fingering into the upper Delaware in this area at depths of approximately 2300 feet. The Merland Well No. 1 disposal interval was below these depths and was successfully used for disposal for many years.

(10) Notice was provided by Endurance in this case of its intent to inject. Endurance provided notice to operators OXY and Kaiser Francis Oil Co., and also to Merland Inc. as the surface owner at the well site. Endurance did not provide testimony from a Landman, but its engineer stated that it had complied with the notice requirements of 19.15.26.7A. NMAC. After review of the administrative application, Endurance had been asked by the Division to notice the City of Carlsbad. At the hearing, Endurance did not provide proof of notice to the City of Carlsbad, but stated that the City of Carlsbad did not object to this application.

(11) No other parties appeared in this case or otherwise opposed this application.

(12) Endurance Resources LLC (OGRID 270329) is the operator of record of the wells located on this lease. Endurance is now in compliance with Division Rule 5.9 and therefore eligible for approval of disposal and injection permits.

(13) The proposed secondary recovery injection project or waterflood within this lease is feasible and should result in the recovery of additional oil and gas that would not otherwise be recovered.

(14) The estimated additional costs of the proposed secondary recovery operations will not exceed the estimated value of the additional oil and gas recovered plus a reasonable profit.

(15) The proposed project will prevent waste, protect correlative rights, and should be approved and called the **Baseball Park Pressure Maintenance Project**. The

Project Area to be affected by this secondary recovery operation should consist of the entire Baseball Park lease area as described above.

(16) As proposed, Endurance should be approved to inject into the Baseball Park Well No. 1 (API No. 30-015-24974) located within Unit letter I of Section 24 into the Brushy Canyon formation from depths of 4052 feet to 4690 feet.

(17) Due to this project area being inside the Carlsbad city limits and the presence nearby, laterally and possibly vertically, of the fresh water bearing Capitan Reef, additional or alternative injection wells within this project area should only be approved after notice (with additional notice to the City of Carlsbad) and hearing.

IT IS THEREFORE ORDERED THAT:

(1) Endurance Resources LLC ("operator", OGRID 270329) is hereby authorized to implement secondary recovery operations within the project area of its Baseball Park Lease by water injection into the Brushy Canyon member of the Delaware Mountain Group, South Carlsbad-Delaware Pool (Pool Code 9692).

(2) The project shall be called the **Baseball Park Pressure Maintenance Project** and the Project Area shall consist of the entire Baseball Park Lease as described below:

Township 22 South, Range 26 East, NMPM

Section 24: SE/4, S/2 NE/4

Township 22 South, Range 27 East, NMPM

Section 19: NW/4 SW/4

All in Eddy County, New Mexico.

(3) Subject to requirements of Ordering Paragraph (5) below, injection is approved within the Baseball Park Well No. 1 (API No. 30-015-24974), located 1980 feet from the South line and 660 feet from the East line, Unit letter I of Section 24, Township 22 South, Range 26 East, NMPM, Eddy County, New Mexico.

(4) Injection shall be through perforations in that well from a maximum depth range from 4052 feet to 4690 feet, and through lined tubing and a packer set no higher than 100 feet above the approved injection interval. The Cherry Canyon open perforations shall be squeezed prior to conversion for injection.

(5) Prior to commencing disposal, the Chi Merland Well No. 1 (API No. 30-015-26266) located in Unit letter M of Section 19 shall be re-entered to at least a depth of 4050 feet and re-plugged back to surface so as to isolate the approved disposal interval and prevent upward migration of disposed waters. The permission specified herein to use the Baseball Park Well No. 1 for disposal is not effective until the required re-entry and re-plugging is successfully completed as determined by the Division's Artesia district

supervisor.

(6) Injection into this project area is limited to only the Baseball Park Well No. 1. The approval of alternate or additional injection well(s) shall only be done after hearing accompanied by notice to the City of Carlsbad and notice to affected persons as per 19.15.16.7A NMAC.

(7) The operator shall take all steps necessary to ensure that the injected water enters only the permitted injection intervals and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

(8) 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 any leakage in the casing, tubing, or packer.

(9) The injection well or pressurization system shall be equipped with a pressure control device or acceptable substitute that will limit the maximum surface injection pressure to 810 psi.

(10) The Division Director may administratively authorize a pressure limitation in excess of the above, after notice and opportunity for hearing in case of objection, upon a showing by the operator supported by approved Step Rate Test that such higher pressure will not result in the fracturing of the injection formation or confining strata or damage to the reservoir. The certified notices shall be provided to the City of Carlsbad and other "affected persons" as defined in 19.15.26.7A NMAC with 15 day opportunity for protest.

(11) As per Division Rule 19.15.26.11A., the operator shall test this injection well for mechanical integrity prior to commencing injection into that well and prior to resuming injection each time the packer is unseated. All MIT testing procedures and schedules shall follow the requirements in Division Rule 19.15.26.11A. NMAC. The Division Director retains the right to require at any time wireline verification of completion and packer setting depths in this well.

(12) The operator shall provide notice, at least 72 hours in advance, to the supervisor of the Division's district office of the date and time of the installation of injection equipment and of any mechanical integrity test so that the same may be inspected and witnessed.

(13) The operator shall provide written notice of the date of commencement of injection to the Division's district office. In accordance with Division rules, the operator shall submit monthly reports of the injection operations on Division Form C-115.

(14) Without limitation on the duties of the operator as provided in Division rules, or otherwise, the operator shall immediately notify the Division's district office of any failure of the tubing, casing or packer in the well, or of any leakage or release of

water, oil or gas from or around any producing or plugged and abandoned well in the area, and shall take such measures as may be timely and necessary to correct such failure or leakage.

(15) 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.

(16) The Division may revoke this injection permit after notice and hearing if the operator is in violation of 19.15.5.9 NMAC.

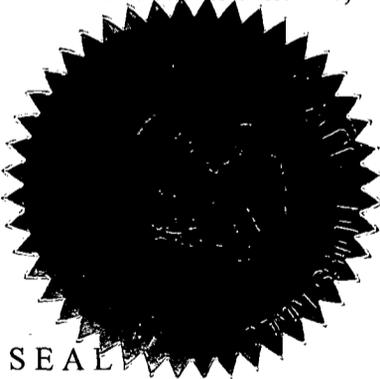
(17) The injection authority granted herein shall terminate two years after the effective date of this order if the operator has not commenced injection operations into the permitted injection well, provided however, the Division, upon written request, mailed by the operator prior to the termination date, may grant an extension thereof for good cause.

(18) One year after all injection into the project area has ceased (or not reported), the Division shall consider the project abandoned, and the authority to inject will terminate *ipso facto*. The Division, upon written request mailed by the operator prior to that termination date, may grant an extension thereof for good cause.

(19) Compliance with this order does not relieve the operator of the obligation to comply with other applicable federal, state or local laws or rules, or to exercise due care for the protection of fresh water, public health and safety and the environment.

(20) Jurisdiction is retained by the Division for the entry of such further orders as may be necessary for the prevention of waste and/or protection of correlative rights or upon failure of the operator to conduct operations (1) to protect fresh or protectable waters or (2) consistent with the requirements in this order, whereupon the Division may, after notice and hearing (or without prior notice and hearing in case of emergency), terminate the injection authority granted herein.

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



SEAL

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JAMI BAILEY
Director