

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. 11982
ORDER NO. R-11046

**APPLICATION OF POGO PRODUCING COMPANY FOR A PRESSURE
MAINTENANCE PROJECT AND QUALIFICATION FOR THE RECOVERED OIL
TAX CREDIT PURSUANT TO THE "NEW MEXICO ENHANCED OIL
RECOVERY ACT," LEA COUNTY, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on June 11, 1998 at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 2nd day of September, 1998, 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) The applicant, Pogo Producing Company ("Pogo"), is the operator of two Federal oil and gas leases in Sections 22, 26, and 27, all in Township 22 South, Range 32 East, NMPM, Lea County, New Mexico: (a) the Red Tank "26" Federal Lease (U. S. Government Lease No. NM-86149), covering the W/2 of Section 26; and (b) the Prize Federal Lease (U. S. Government Lease No. NM-81272), covering the E/2 of Section 22 and the E/2 of Section 27. Pogo seeks authority to institute a cooperative leasehold pressure maintenance project by the injection of produced water into the Cherry Canyon and Brushy Canyon Members of the Delaware Mountain Group within the West Red Tank-Delaware Pool through the perforated interval from approximately 6,832 feet to 8,388 feet in its existing Prize Federal Well No. 4 (API No. 30-025-32436), located 1880 feet from the North line and 760 feet from the East line (Unit H) of Section 27.

(3) Within the proposed cooperative leasehold pressure maintenance project area that encompasses the two above-described Federal leases there is undeveloped Delaware acreage that Pogo has requested not be made a part of the initial pressure maintenance project. Therefore, this initial cooperative leasehold pressure maintenance project area, for allowable and tax credit purposes, is to be reduced to the following described 360 acres, more or less, in Lea County, New Mexico:

TOWNSHIP 22 SOUTH, RANGE 32 EAST, NMPM

Section 26: W/2 NW/4 and NW/4 SW/4
Section 27: NE/4 and N/2 SE/4.

(4) All of Sections 26 and 27 are within the horizontal limits of the West Red Tank-Delaware Pool, which is currently governed by the Division's General Rules with development on 40-acre spacing units each having a top unit depth bracket allowable of 230 barrels of oil per day and a gas/oil ratio of 2,000 cubic feet of gas per barrel of oil, which results in a casinghead gas allowable of 460 MCF per day.

(5) There are currently eight West Red Tank-Delaware producing oil wells that will be initially affected by the proposed injection well, all of which are located in Township 22 South, Range 32 East, NMPM, Lea County, New Mexico:

Well Name and Number	Footage Location (Unit)	Section	API Number
Red Tank "26" Federal Well No. 2	330' FNL & 660' FWL (D)	26	30-025-32462
Red Tank "26" Federal Well No. 3	1980' FNL & 330' FWL (E)	26	30-025-32463
Red Tank "26" Federal Well No. 4	2310' FSL & 330' FWL (L)	26	30-025-32386
Prize Federal Well No. 3	1980' FSL & 660' FEL (I)	27	30-025-32143
Prize Federal Well No. 5	660' FN & EL (A)	27	30-025-32437
Prize Federal Well No. 6	990' FNL & 2310' FEL (B)	27	30-025-32656
Prize Federal Well No. 7	2310' FNL & 1980' FEL (G)	27	30-025-32657
Prize Federal Well No. 8	1980' FS & EL (J)	27	30-025-32685

(6) At the time of the hearing Pogo presented geological evidence which shows that:

(a) the Delaware reservoir in this area trends northeast-southwest, with the lower

Delaware being a deep water sand environment;

(b) the main producing zone, identified by Pogo as the Lower Brushy Canyon "BC-4" interval, is continuous across the project area, and all of the wells in the proposed project area are currently producing from this zone; and

(c) there are numerous productive or potentially productive intervals in the Delaware in this area.

(7) Further, Pogo presented engineering evidence which shows that:

(a) the producing rates of the wells in the project area vary, but overall are not in the "stripper" category;

(b) although the injection well has perforations in the Cherry Canyon and the Brushy Canyon intervals, the vast bulk of the injected water will be injected into the lower Brushy Canyon "BC-4" interval, because that zone has been fracture treated, while the other zones have only been acidized;

(c) because of the fracture treatments of the Brushy Canyon "BC-4" zone in each producing well, and because the wells are on pump, the bottomhole pressure will be less than the reservoir pressure, and cross-flow between different Delaware zones will not occur;

(d) the injection of water into the Delaware formation should retard the dissipation of reservoir energy;

(e) all Delaware zones should serve to

benefit from injection; and

(f) with the pressure maintenance project, the wells in the project area will recover approximately 255,000 barrels of additional incremental oil production from the "BC-4" zone through the expenditure of an estimated \$160,000.00 to convert the Prize Federal Well No. 4 to injection, the addition of injection and production facilities, and the removal of bridge plugs in certain producing wells.

(8) The applicant owns 100% of the operating rights of the two subject leases, and thus will bear the full cost of the project.

(9) The proposed pressure maintenance project should result in the recovery of otherwise unrecoverable oil thereby preventing waste, promotes sound engineering practices, is in the best interest of conservation, and will not impair correlative rights.

(10) The applicant submitted data on the proposed injection well and all other wells which penetrate the zone of interest within the one-half mile "area of review" of the proposed injection well. The data shows that wells in the area are cased and cemented so as to protect fresh water and prevent fluid migration from the injection zone, and includes testimony indicating no evidence of open faults or any other hydrologic connection between the injection zone and any fresh water resources in the area.

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

(12) Injection into the proposed injection well should be accomplished through 2-7/8 inch plastic lined tubing installed in a packer set no higher than 100 feet above the uppermost perforation; the casing-tubing annulus should be filled with an inert fluid; and a pressure gauge or approved leak detection device should be attached to the annulus in order to determine leaks in the casing, tubing, or packer.

(13) The injection well should be initially equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure at the wellhead to no more than 1360 psi.

(14) The Division Director should have the authority to administratively authorize

a pressure limitation in excess of the limitation described above upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata.

(15) Prior to commencing injection operations, the casing in the injection well should be pressure tested throughout the interval from the surface down to the proposed packer setting depth to assure the integrity of such casing.

(16) The operator should give advance notice to the supervisor of the Division's Hobbs District Office of the date and time of the installation of injection equipment and of the mechanical integrity pressure test in order that these operations may be witnessed.

(17) The subject application should be approved and the pressure maintenance project should be governed by the provisions of Division Rules 701 through 708.

(18) The project allowable should be equal to the top unit allowable for the West Red Tank-Delaware Pool (230 barrels of oil per day) times the number of developed (production or injection) proration units within the project area. Unless the project area is subsequently expanded, the allowable should be established at 2,070 barrels of oil per day (230 BOPD times nine 40-acre units).

(19) The transfer of allowable between wells within the project area should be permitted.

(20) The applicant further requests that the subject pressure maintenance project be approved by the Division as a qualified "Enhanced Oil Recovery ("EOR") Project" pursuant to the "Enhanced Oil Recovery Act" (Sections 7-29A-1 through 7-29A-5, NMSA 1978).

(21) No offset operator or mineral interest owner or other interested party appeared at the hearing in opposition to the subject application.

(22) The evidence presented indicates that the pressure maintenance project meets all Division criteria for approval.

(23) The approved project area should be designated the "**Red Tank/Prize Federal Cooperative Leasehold Pressure Maintenance Project**" and should be comprised of the 360 acres described above in Finding Paragraph (3).

(24) To be eligible for the EOR tax rate, prior to commencing operations the operator must request from the Division a Certificate of Qualification, which certificate must

specify the proposed project area described above.

(25) At such time as a positive production response occurs, and within five years from the date of the Certificate of Qualification, the applicant must apply to the Division for certification of a positive production response, which application is to identify the area actually benefitting from enhanced recovery operations and the specific wells which the operator believes are eligible for the tax rate. The Division may review the application administratively or set it for hearing. Based upon evidence presented, the Division will certify to the Taxation and Revenue Department those lands and wells which are eligible for the EOR tax rate.

(26) The injection authority granted for the proposed injection well should terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject well; provided, however, the Division, upon written request of the operator, may grant an extension thereof for good cause shown.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Pogo Producing Company ("Pogo"), is hereby authorized to institute a cooperative leasehold pressure maintenance project on its Red Tank "26" Federal Lease (U. S. Government Lease No. NM-86149), covering the W/2 of Section 26, and its Prize Federal Lease (U. S. Government Lease No. NM-81272), covering the E/2 of Section 22 and the E/2 of Section 27, all in Township 22 South, Range 32 East, NMPM, Lea County, New Mexico, by the injection of produced water into the Cherry Canyon and Brushy Canyon Members of the Delaware Mountain Group within the West Red Tank-Delaware Pool through the perforated interval from approximately 6,832 feet to 8,388 feet in its existing Prize Federal Well No. 4 (API No. 30-025-32436), located 1880 feet from the North line and 760 feet from the East line (Unit H) of Section 27.

(2) This cooperative leasehold pressure maintenance project is designated the ***"Red Tank/Prize Federal Cooperative Leasehold Pressure Maintenance Project."*** The initial project area for allowable and tax credit purposes is to include the following described 360 acres, more or less, in Lea County, New Mexico:

TOWNSHIP 22 SOUTH, RANGE 32 EAST, NMPM

Section 26: W/2 NW/4 and NW/4 SW/4

Section 27: NE/4 and N/2 SE/4.

(3) As necessary, this project area may be expanded administratively to include that entire area that comprises both the Red Tank "26" Federal and Prize Federal leases.

(4) The project allowable shall be equal to the top unit allowable for the West Red Tank-Delaware Pool (230 barrels of oil per day) times the number of developed (production or injection) proration units within the project area. Unless the project area is subsequently expanded, the initial project allowable should be established at 2,070 barrels of oil per day.

(5) The transfer of allowable between wells within the project area is hereby permitted.

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

(7) Injection into the Prize Federal Well No. 4 shall be accomplished through 2-7/8 inch plastic lined tubing installed in a packer set within 100 feet of the uppermost injection perforation, and the casing-tubing annulus shall be filled with an inert fluid and equipped with a pressure gauge or attention-attracting leak detection device.

(8) The injection well shall be equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure at the wellhead to no more than 1,360 psi.

(9) The Division Director shall have the authority to administratively authorize an increase in the injection pressure limitation upon a showing by the operator that such higher pressure will not result in the migration of injected water from the injection interval or fracturing of the injection formation or confining strata.

(10) Prior to commencing injection operations, the casing in the injection well shall be pressure tested throughout the interval from the surface down to the proposed packer setting depth to ensure the integrity of such casing.

(11) The operator shall give advance notice to the supervisor of the Division's Hobbs District Office of the date and time of the installation of injection equipment and of the mechanical integrity pressure test in order that they may be witnessed.

(12) The operator shall immediately notify the supervisor of the Division's Hobbs District Office of the failure of the tubing, casing, or packer in the injection well; the leakage of water, oil, or gas from or around any producing well within the project area; or the leakage of oil, water, or gas from any plugged and abandoned well within the project area; and shall take such steps as may be timely and necessary to correct such failure or leakage.

(13) Should it be necessary, the supervisor of the Division's Hobbs District Office or the Director may at any time order a decrease in the injection pressure on the injection well.

(14) The operator of the Red Tank/Prize Federal Cooperative Leasehold Pressure Maintenance Project shall conduct injection operations in accordance with all applicable Division Rules, including Rules 701 through 708, and shall submit monthly progress reports in accordance with Rules 706 and 1115.

IT IS FURTHER ORDERED THAT:

(15) The subject pressure maintenance project is hereby approved as a qualified "Enhanced Oil Recovery ("EOR") Project" pursuant to the "Enhanced Oil Recovery Act" (Sections 7-29A-1 through 7-29A-5, NMSA 1978).

(16) The approved project area shall initially be limited to the 360-acre area described above in Ordering Paragraph (2).

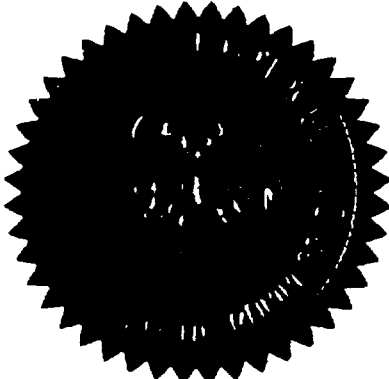
(17) To be eligible for the EOR tax rate, prior to commencing operations the operator must request from the Division a Certificate of Qualification, which certificate will specify the proposed project area described above.

(18) At such time as a positive production response occurs and within five years from the date of the Certificate of Qualification, the applicant must apply to the Division for certification of a positive production response, which application shall identify the area actually benefitting from enhanced recovery operations and the specific wells which the operator believes are eligible for the tax rate. The Division may review the application administratively or set it for hearing. Based upon evidence presented, the Division will certify to the Taxation and Revenue Department those lands and wells which are eligible for the EOR tax rate.

(19) The injection authority granted herein for the proposed injection well shall terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject well; provided, however, the Division, upon written request of the operator, may grant an extension thereof for good cause shown.

(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.



SEAL

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

Lori Wrotenbery

LORI WROTENBERY
Director