

**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:**

**APPLICATION OF YATES PETROLEUM CORPORATION
FOR A PRESSURE MAINTENANCE PROJECT, EDDY
COUNTY, NEW MEXICO.**

Case No. 11161

**APPLICATION OF YATES PETROLEUM CORPORATION
FOR QUALIFICATION OF A PRESSURE MAINTENANCE
PROJECT FOR THE RECOVERED OIL TAX CREDIT
PURSUANT TO THE "NEW MEXICO OIL RECOVERY
ACT", EDDY COUNTY, NEW MEXICO.**

Case No. 11185

Order No. R-10329

ORDER OF THE DIVISION

BY THE DIVISION:

The matter in Case No. 11161 came on for hearing at 8:15 a.m. on December 15, 1994 and on January 5, 1995, at Santa Fe, New Mexico, before Examiners Michael E. Stogner and David R. Catanach, respectively. However, Case No. 11185 came on for hearing only at the January 5, 1995 hearing before Examiner David R. Catanach.

NOW, on this 9th day of March, 1995, the Division Director, having considered the testimony, the record and the recommendations of the Examiners, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) In Case No. 11161 the applicant, Yates Petroleum Corporation ("Yates"), seeks authority to institute a cooperative pressure maintenance pilot project on portions of its Hill View "AHE" Federal, Saguaro "AGS" Federal, and Senita "AIP" Federal leases underlying the E/2

SW/4 and SE/4 of Section 14 and the NE/4, E/2 NW/4, NE/4 SW/4 and N/2 SE/4 of Section 23, both in Township 20 South, Range 24 East, NMPM, Eddy County, New Mexico, by the injection of water into the Canyon formation of the South Dagger Draw-Upper Pennsylvanian Associated Pool through the following three existing wells to be converted to water injection wells:

- a) the Saguaro "AGS" Federal Com Well No. 8 (**API No. 30-015-26517**), located 660 feet from the South line and 1980 feet from the East line (Unit O) of said Section 14 is currently a producing oil well in the subject pool (perforations from 7624 feet to 7748 feet), this well is to be converted from a producing oil well to a water injection well with no change in the perforated interval;
- b) the Hill View "AHE" Federal Com Well No. 6 (**API No. 30-015-26601**), located 660 feet from the North line and 1980 feet from the East line (Unit B) of said Section 23 is currently a producing oil well in the subject pool (perforations from 7566 feet to 7799 feet), this well is to be converted from a producing oil well to a water injection well with no change in the perforated interval; and,
- c) the Hill View "AHE" Federal Com Well No. 2 (**API No. 30-015-23541**), located 1650 feet from the North line and 1780 feet from the East line (Unit G) of said Section 23 is currently a producing oil well in the subject pool (perforations from 7576 feet to 7794 feet), this well is to be converted from a producing oil well to a water injection well with no change in the perforated interval.

(3) In Case No. 11185, Yates further requests that the subject pressure maintenance pilot project be approved by the Division as a qualified "Enhanced Oil Recovery Project" pursuant to New Mexico's "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(4) A single order is appropriate in this instance since both Case Nos. 11161 and 11185 are companion cases and the subject matter in both are dependent upon the other.

(5) Of the two cases being considered in this order, Case No. 11161 was the only application on the December 15, 1994 docket, the applicant however presented additional evidence at the time to support the subject matter requested in Case No. 11185.

(6) At the January 5, 1995 hearing both cases were called and taken under advisement.

(7) Within the proposed cooperative area Yates is the operator of the three federally owned leases involved. In the S/2 of said Section 23 Yates owes 100 percent of the working interest, within that portion of the project area located in Section 14 Yates owns 37.5 percent and Santa Fe Operating Partners L. P. ("Santa Fe") owns 62.5 percent. At the time of the hearings Santa Fe was still considering the actual letter of agreement for the pilot "waterflooding" of the reservoir. Further, Yates has approached the United States Bureau of Land Management ("BLM") about the possibility of forming a unit for the proposed project. At the time of the hearings Yates and the BLM were still negotiating.

(8) The South Dagger Draw-Upper Pennsylvanian Associated Pool is a well defined highly developed prolific dolomite reservoir that has both a gas cap and a water drive mechanism. Yates is proposing a "pilot water injection" project within a segment of the pool in the south that would not adversely effect either the gas cap nor the water drive.

(9) Using numerical reservoir modeling simulation, Yates predicted an additional recovery of approximately 395,000 stock tank barrels of oil with its proposed "line-drive" injection configuration. Evidence presented indicated this injection pattern would yield the best recoveries from this reservoir.

(10) The applicant testified the additional capital costs associated with the implementation of this project would total approximately \$602,000.

(11) Current production levels from the fifteen producing wells within the proposed pilot project area are not in an advanced state of depletion and therefore cannot be classified as "stripper wells".

(12) Produced water from the subject Canyon formation in surrounding leases would be the initial source of injection water into the proposed pilot project.

(13) Pursuant to General Rule 701.E, the proposed project should be classified as a pressure maintenance project and governed accordingly.

(14) The proposed cooperative lease pilot pressure maintenance project should result in the recovery of otherwise unrecoverable oil thereby preventing waste, exhibits sound engineering practices, is in the best interest of conservation, and, if Santa Fe Operating Partners L. P. agrees to Yates' proposal for this project, should not impair correlative rights.

(15) The area for said project should incorporate portions of the applicant's Hill View "AHE" Federal, Saguaro "AGS" Federal, and Senita "AIP" Federal leases as described in Finding Paragraph No. (2), above. Subsequent to the December 15, 1994 hearing Yates

proposed said project be designated the "*Sawbuck Cooperative (Lease) Pressure Maintenance Pilot Project*".

(16) The project allowable should be equal to the top unit oil allowable for the South Dagger Draw-Upper Pennsylvanian Associated Pool times the number of developed (production or injection) proration units within the project area.

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

(18) The applicant submitted data on the proposed injection wells, water wells in the area, and all other wells (including plugged wells) which penetrate the zone of interest within 1/2-mile of each of the proposed injection wells. This data shows that wells in the area are cased and plugged 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 the fresh water resources in the area.

(19) The operator should take all steps necessary to ensure that the injected water only enters and remains confined to 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.

(20) Injection into each well should be accomplished through 3 1/2-inch plastic-lined tubing installed in a packer set no higher than 100 feet above the uppermost perforation; the casing-tubing annulus in each well 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.

(21) The injection wells or pressurization system for each well should be so equipped as to limit injection pressure at the wellhead to no more than 1500 psi. Any additional increase in pressure on any of said wells should be permitted only after notice and hearing. Further, should it become necessary, the supervisor of the Artesia District Office of the Division or the Director may order a decrease of the injection pressure on any of the above injection wells.

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

(23) The operator should give advance notice to the supervisor of the Artesia District Office of the Division of the date and time of the installation of injection equipment and of the mechanical integrity pressure-test in order that the same may be witnessed.

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

(25) The evidence presented by the applicant indicates that the subject pressure maintenance pilot project meets all the criteria for approval by the Division as a qualified "Enhanced Oil Recovery Project" pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(26) The approved "pilot project area" should initially comprise that area described in Finding Paragraph No. (2) above.

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

(28) 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 positive production response, which application shall identify the area actually benefitting from enhanced recovery operations, and identifying the specific wells which the operator believes are eligible for the credit. The Division may review the application administratively or set it for hearing. Based upon evidence presented, the Division will certify to The Department of Taxation and Revenue those lands and wells which are eligible for the credit.

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

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Yates Petroleum Corporation ("Yates"), is hereby authorized to institute a cooperative pressure maintenance pilot project on portions of its Hill View "AHE" Federal, Saguaro "AGS" Federal, and Senita "AIP" Federal leases by the injection of water into the Canyon formation of the South Dagger Draw-Upper Pennsylvanian Associated Pool through the following three existing wells, which will be converted from producing oil wells to injection wells, all located in either Section 14 or 23, of Township 20 South, Range 24 East, NMPM, Eddy County, New Mexico:

| Well Name and Number (API Number) | Footage Location (Unit Letter) | Section | Perforated Injection Interval (feet) |
|--|-----------------------------------|---------|---|
| Saguaro "AGS" Federal Com Well No. 1 (30-015-26517) | 660' FSL & 1980' FEL (O) | 14 | 7624 - 7748 |
| Hill View "AHE" Federal Com Well No. 6 (30-015-26601) | 660' FNL & 1980' FEL (B) | 23 | 7566 - 7799 |
| Hill View "AHE" Federal Com Well No. 2 (30-015-23541) | 1650' FNL & 1780' FEL (G) | 23 | 7576 - 7794 |

(2) The pressure maintenance pilot project, hereby designated the "*Sawbuck Cooperative (Lease) Pressure Maintenance Pilot Project*", shall be comprised of the following described area in Eddy County, New Mexico:

TOWNSHIP 20 SOUTH, RANGE 24 EAST, NMPM

Section 14: E/2 SW/4 and SE/4
Section 23: NE/4, E/2 NW/4, NE/4 SW/4, and N/2 SE/4

(3) The operator of said project must take all steps necessary to ensure that the injected water only enters and remains confined to the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

(4) The allowable for the project area shall be any amount up to and including a volume equal to the top unit allowable for the South Dagger Draw-Upper Pennsylvanian Pool times the number of proration units (producing or injection) within the project area.

FURTHER: The allowable assigned to the subject pilot project area may be produced from any well or wells therein and in any proportion.

(5) Injection into each well shall be accomplished through 3 1/2-inch plastic-lined tubing installed in a packer set no higher than 100 feet above the uppermost perforation.

(6) The casing-tubing annulus in each injection well shall be filled with an inert fluid; and a pressure gauge shall be attached to the annulus or the annulus shall be equipped with an approved leak-detection device in order to determine leakage in the casing, tubing or packer.

(7) Prior to commencing injection operations, the casing in each of the subject wells shall be pressure tested to assure the integrity of such casing in a manner that is satisfactory to the supervisor of the Division's Artesia District Office.

(8) Each injection well or pressurization system for each well shall be equipped with a pressure-limiting switch or other acceptable device which will limit the wellhead pressure on the injection well to no more than 1500 psi.

(9) Any increase in the injection pressure on any of the said wells shall be permitted only after notice and hearing.

(10) The operator shall notify the supervisor of the Artesia District Office of the Division in advance of the date and time of the installation of injection equipment and of the mechanical integrity pressure-test in order that the same may be witnessed.

(11) 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 said injection wells or the leakage of water or oil from any plugged and abandoned, producing, or injection well within the project area and shall take such timely steps as may be necessary or required to correct such failure or leakage.

(12) Should it become necessary, the supervisor of the Artesia District Office of the Division or the Director may at any time order a decrease of the injection pressure on any of the subject injection wells.

(13) Said pressure maintenance pilot project shall be governed by the applicable provisions of Rules 701 through 708 of the Division Rules and Regulations.

(14) Monthly progress reports shall be submitted to the Division in accordance with Rules 706 and 1115.

IT IS FURTHER ORDERED THAT:

(15) The subject pressure maintenance pilot project is hereby approved as an "Enhanced Oil Recovery Project" pursuant to New Mexico's "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(16) The approved "project area" shall initially comprise that area described in Decretory Paragraph No. (2) above.

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

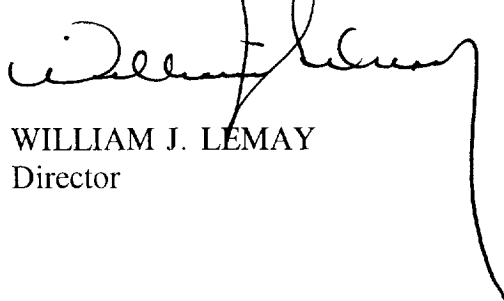
(18) At such time as a positive production response occurs and within five years from the date of the Certificate of Qualification, the applicant must apply to the Division for certification of positive production response, which application shall identify the area actually benefitting from enhanced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

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

(20) Jurisdiction of this cause 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



WILLIAM J. LEMAY
Director

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