

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. 11113  
ORDER NO. R-10251*

**APPLICATION OF GREAT WESTERN DRILLING COMPANY FOR A WATERFLOOD  
PROJECT AND TO QUALIFY FOR THE RECOVERED OIL TAX RATE, LEA  
COUNTY, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on October 13, 1994 at Santa Fe, New Mexico, before Examiner Jim Morrow.

NOW, on this 21st day of November, 1994 the Division Director, having considered the testimony, the record and the recommendations of the Examiner, 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) At the time of the hearing, this case was consolidated with Division Case No. 11114 for the purpose of testimony. Case No. 11114 is a companion case concerning statutory unitization.
- (3) The applicant, Great Western Drilling Company (Great Western), seeks approval to institute a waterflood project in its proposed South Carter (San Andres) Unit comprising portions of Sections 5, 6, 7 and 8, Township 18 South, Range 39 East, by the injection of water into the South Carter-San Andres Pool, through five existing wells to be converted. The applicant also seeks to qualify this project for the recovered Oil Tax Rate pursuant to the New Mexico "Enhanced Oil Recovery Act" (Law 1992, Chapter 38, Sections 1 through 5).
- (4) It is proposed that the waterflood project area coincide with the boundary of the South Carter (San Andres) Unit Area in Lea County, New Mexico, as further described below:

TOWNSHIP 18 SOUTH, RANGE 39 EAST, NMPM, LEA COUNTY, NEW MEXICO

- Section 5: (irregular sized section)  
Lots 4, 5 & 6;  
S/2NW/4; E/2SW/4; and  
W/2SW/4
- Section 6: SE/4SE/4
- Section 7: NE/4NE/4
- Section 8: (irregular sized section)  
Lot 1; N/2NW/4; and  
North 120 acres of 318.7 acre tract; said 318.7 acre tract being  
Lots 2, 3, 4, S/2NW/4 & SW/4

The above area includes 624 acres, more or less.

(5) The wells within the proposed waterflood area have reached an advanced stage of depletion. The eight active producers are currently producing a total of 60 barrels of oil and 60 barrels of water per day. Approximately 85% of the primary reserves has been recovered.

(6) The project is expected to recover 1,300,000 barrels of secondary oil and cost an estimated \$955,000. It would be developed in two stages. Initially there would be five injection wells injecting a total of 2,500 barrels of water per day. One new producing well would be drilled in stage one. In stage two, two additional producing wells would be converted to injection and two new injection wells would be drilled. Also five new producers would be drilled resulting in a total of nine injection and nine producing wells.

(7) Injection would be into the San Andres formation interval correlative to the interval between the depths of 4,820 feet and 5,610 feet as identified on the Halliburton Radioactivity Log for the Moore & Turner McQueen Well No. 1, dated January 5, 1955, located 1980 feet from the North line and 435 feet from the East line of Section 8, Township 18 South, Range 39 East, NMPM, Lea County, New Mexico.

(8) Great Western proposed a maximum injection pressure limitation of 0.2 psi per foot calculated on an individual well basis and requested an administrative procedure for increasing injection pressures based on step rate tests.

(9) An administrative procedure for amending well locations was also requested. Since Division General Rules currently authorize such administrative procedures, special rules are needed.

(10) Great Western plans to inject water through 2 3/8-inch PVC lined tubing set on a packer within 100 feet of the injection interval. Injection water would be San Andres produced water and Ogallala make up water. Compatibility studies indicate no problems as long as a closed system is maintained and oxygen is kept out of the system.

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

(12) Great Western submitted data concerning water wells and ground water resources in the area. Information was also submitted to show that producing and plugged wells in the area are completed in a manner which will protect ground water.

(13) Data was submitted for each well within 1/2 mile of each of the proposed injection wells. Production casing is cemented and/or cement plugs are set in each of the wells to prevent migration of injection fluids out of the proposed injection interval.

(14) Great Western submitted a unit area production performance curve showing that oil production began in 1957 and peaked that year at approximately 15,000 barrels per month. Production decline has been fairly constant to the current rate of nearly 2000 barrels per month (60 barrels per day) for the eight wells currently producing. Based on the data submitted, the proposed project qualifies as an enhanced recovery project as defined in Division rules (Order No. R-9708) and the New Mexico Enhanced Oil Recovery Act. The project should be approved and should be designated the South Carter (San Andres) Unit Waterflood Project.

(15) To be eligible for the EOR tax credit, prior to commencing operations, the operator must request from the Division a Certificate of Qualification specifying the proposed project area as described in this order.

(16) 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.

(17) 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 operations 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, Great Western Drilling Company is hereby authorized to institute a waterflood project in its South Carter (San Andres) Unit Area (Division Case No. 11114), Lea County, New Mexico by the injection of water into a stratigraphic interval of the South Carter-San Andres Pool, equivalent to that interval between 4,820 feet and 5,610 feet as identified on the Halliburton Radioactive Log for the Moore & Turner McQueen Well No. 1, dated January 5, 1955, located 1980 feet from the North line and 435 feet from the East line of Section 8, Township 18 South, Range 39 East, NMPM, Lea County, New Mexico. Injection is authorized through five injection wells as further described in Exhibit "A" attached hereto and made a part hereof.

(2) The waterflood project area, hereby designated the South Carter (San Andres) Unit Waterflood Project, shall coincide with the boundary of the South Carter (San Andres) Unit Area as further described below:

TOWNSHIP 18 SOUTH, RANGE 39 EAST, NMPM, LEA COUNTY, NEW MEXICO

Section 5: (irregular sized section)  
Lots 4, 5 & 6;  
S/2NW/4; E/2SW/4; and  
W/2SW/4  
Section 6: SE/4SE/4  
Section 7: NE/4NE/4  
Section 8: (irregular sized section)  
Lot 1; N/2NW/4; and  
North 120 acres of 318.7 acre tract; said 318.7 acre tract being  
Lots 2, 3, 4, S/2NW/4 & SW/4

(3) The applicant must take all steps necessary to ensure that the injected water enters and remains confined to or produced from 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) Injection shall be accomplished through 2 3/8-inch PVC-lined tubing installed in a packer set approximately within 100 feet of the uppermost injection perforation or open hole interval, the casing-tubing annulus in each well shall be filled with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak detection device.

(5) The injection wells or pressurization system for each injection well shall be so equipped as to initially limit injection pressure at the wellhead to no more than 0.2 psi multiplied by the depth to the top of the injection interval.

(6) Any additional increase in the injection pressure for any well in the project area shall only be approved by the Santa Fe Office of the Division using the procedures set out in Division General Rule 704C.

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

(8) The operator shall give advance notification to the supervisor of the Hobbs 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.

(9) The applicant shall immediately notify the supervisor of the Hobbs District Office of the Division of the failure of the tubing, casing or packer in any of the injection wells, the leakage of water or oil from or around any producing well, or the leakage of water or oil 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.

(10) The applicant shall conduct injection operations in accordance with Division Rule Nos. 701 through 708 and shall submit monthly progress reports in accordance with Division Rules.

(11) The subject waterflood project is hereby approved as an "Enhanced Oil Recovery Project" pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

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

(13) 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.

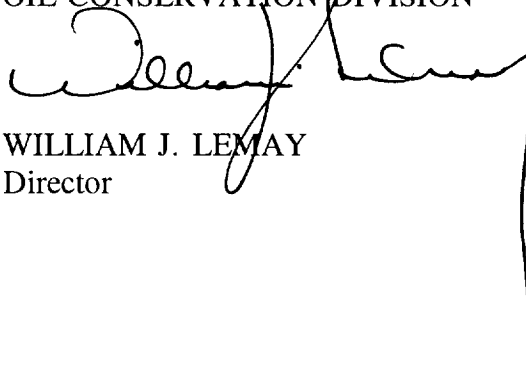
(14) At such time as a positive production response occurs and within five years from the date of the Certificate of Qualification, the applicant must apply to the Division for certification of positive production response, which application shall identify the area actually benefitting from enhanced 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.

(15) 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 operations into the subject wells, provided however, the Division, upon written request by the operator, may grant an extension thereof for good cause shown.

(16) 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

A handwritten signature in black ink, appearing to read 'William J. Lemay', is written over the printed name and title. The signature is fluid and cursive, with a long vertical line extending downwards from the end of the signature.

WILLIAM J. LEMAY  
Director

S E A L

Exhibit "A"  
Case No. 11113  
Order No. R-10251  
Great Western Drilling Company  
State 1 Injection Wells  
South Carter (San Andres) Unit Waterflood Project  
Township 18 South, Range 39 East, NMPM  
Lea County, New Mexico

<u>Well Name and Number</u>	<u>Footage Location</u>	<u>Section</u>	<u>Proposed Injection Interval Feet</u>
Effie Carter No. 2	330' FSL & 2310' FWL	5	5129-5210
Effie Carter No. 3	1650' FSL & 1980' FWL	5	5094-5235
S.P. Johnson No. 2	990' FSL & 990' FWL	5	5097-5246
McQuein No. 2	1650' FNL & 2310' FWL	8	5046-5270
Sylvester-Johnson	330' FNL & 990' FWL	8	5108-5233