

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. 11520*  
*ORDER NO. R-9737-B*

**APPLICATION OF MEWBOURNE OIL COMPANY TO INCREASE INJECTION  
PRESSURE, LEA COUNTY, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on May 2, 1996, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 8th day of July, 1996, the Division Director, having considered 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) By Division Order No. R-9737-A, issued in Case 10762 and dated October 13, 1993, Mewbourne Oil Company ("Mewbourne") was authorized to institute its Querecho Plains Bone Spring Sand Unit Waterflood Project comprising the following described area in Lea County, New Mexico, by the injection of water into the designated and Undesignated Querecho Plains-Upper Bone Spring Pool through fifteen certain wells, as further described in Exhibit "A" attached hereto and made a part hereof, all located within said project area:

TOWNSHIP 18 SOUTH, RANGE 32 EAST, NMPM

Section 13: S/2 SW/4  
Section 14: SE/4  
Section 22: NE/4 SE/4 and S/2 SE/4  
Section 23: All

Section 24: W/2 NW/4 and SW/4 SW/4  
 Section 26: N/2  
 Section 27: All  
 Section 28: E/2.

(3) Order No. R-9737-A contained a provision limiting wellhead pressure on each of the fifteen wells to no more than 2,000 psi. Any additional pressure increase would require an amendment to this order, which would necessitate a hearing before such increase could be considered.

(4) The QPBSSU 3 Well No. 5, formerly the Federal "L" Well No. 5, (API No. 30-025-30341), located 660 feet from the North and East lines (Unit A) of said Section 23, currently serves as a producing oil well within the project area and was never converted into an injection well as originally proposed. This well should therefore be deleted as a proposed injection well at this time.

(5) At the time of the hearing the applicant requested that Decretory Paragraph No. (10) of said Order No. R-9737-A, which contained provision that required pressure increases to come to hearing, be amended so that any additional pressure increases could be considered administratively pursuant to Division General Rule 704.C.

(6) Evidence presented by the applicant indicates that the reservoir fracture gradient has increased since initial water injection commenced in 1993. The applicant performed step-rate tests on the following five injection wells all located in Township 18 South, Range 32 East, NMPM, Lea County, New Mexico:

Well Name and Number	API No.	Footage Location (Unit)	Section	Unit	Step-Rate Test Results (psi)
QPBSSU 12-B Well No. 3	30-025-30570	1980'FS & EL	14	J	2330
QPBSSU 11 Well No. 1	30-025-29482	660'FNL - 2310'FEL	26	B	2240
QPBSSU 12-D Well No. 2	30-025-24564	660'FNL - 1980'FWL	26	C	2250
QPBSSU 12-E Well No. 1	30-025-29227	660'FN & WL	26	D	2530
QPBSSU 7-A Well No. 10	30-025-29252	2310'FN & EL	27	G	2250

(7) The average results from these five tests, being 2320 psi is 0.73 psi/foot, equals the average frac gradient of 0.74 psi/foot determined by the initial shut-in pressures (ISIP) of 17 fracture stimulations that the applicant has conducted on wells within the

Querecho Plains-Upper Bone Spring Pool. Therefore, the reservoir should be able to accept a surface pressure of 2,300 psi without propagating any existing fracture stimulation out of the injection interval.

(8) An increase in injection pressure of 2330 psi for the QPBSSU 12-B Well No. 3, 2240 psi for the QPBSSU 11 Well No. 1, 2250 psi for the QPBSSU 12-D Well No. 2, 2530 psi for the QPBSSU 12-E Well No. 1, 2250 psi for the QPBSSU 7-A Well No. 10, and 2300 psi for the remaining nine wells should enable the applicant to increase water injection volumes which will in turn accelerate oil production from the subject project.

(9) Any future injection pressure increases for wells within this project should be processed administratively as long as any such request has the proper technical support data. Decretory Paragraph No. (10) of said Order No. R-9737-A should therefore be amended to include said administrative process.

**IT IS THEREFORE ORDERED THAT:**

(1) Decretory Paragraph No. (9) on pages 8 and 9 of Division Order No. R-9737-A, issued in Case No. 10762 and dated October 13, 1993, being one and the same, is hereby amended to read in its entirety as follows:

"(9) The injection wells or pressurization system for each of the following fourteen injection wells shall be so equipped as to limit injection pressure at the wellhead as shown:

<u>Well Name and Number</u>	<u>Injection Pressure</u>
QPBSSU 12-C Well No. 4	2300
QPBSSU 12-B Well No. 3	2350
QPBSSU 3 Well No. 4	2300
QPBSSU 3 Well No. 7	2300
QPBSSU 3 Well No. 2	2300
QPBSSU 4 Well No. 2	2300
QPBSSU 10 Well No. 3	2300
QPBSSU 2-A Well No. 1	2300
QPBSSU 11 Well No. 2	2300
QPBSSU 11 Well No. 1	2240
QPBSSU 12-D Well No. 2	2250
QPBSSU 12-E Well No. 1	2530
QPBSSU 7-A Well No. 11	2300
QPBSSU 7-A Well No. 10	2250."

(2) Decretory Paragraph No. (10) on page 9 of said Division Order No. R-9737-A is hereby amended to read in its entirety as follows:

"(10) The Division Director shall have the authority to administratively authorize an increase in the injection pressure limitation placed upon any well upon a proper showing by the operator that such higher pressure will not result in the migration of the injected water from its respective interval or fracture the confining strata."

(3) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

WITNE 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 typed name and title.

WILLIAM J. LEMAY  
Director

**EXHIBIT "A"**

CASE NO. 11520  
ORDER NO. R-9737-B

**Mewbourne Oil Company  
Current Injection Wells  
Querecho Plains Bone Spring Sand Unit Waterflood Project Area  
Township 18 South, Range 32 East, NMPM,  
Lea County, New Mexico**

Well Name and Number	API No.	Footage Location	Section	Unit	Authorized Injection Interval (Feet)
QPBSSU 12-C Well No. 4	30-025-30643	1980'FSL - 660'FEL	14	I	8412 - 8490
QPBSSU 12-B Well No. 3	30-025-30570	1980'FS & EL	14	J	8478 - 8504
QPBSSU 3 Well No. 5 <small>(the former Federal "L" Well No. 5)</small>	30-025-30341	660' FN & EL	23	A	8430 -8574
QPBSSU 3 Well No. 4	30-025-30129	660'FNL - 1650'FEL	23	B	8431 - 8506
QPBSSU 3 Well No. 7	30-025-24861	2310'FSL - 990'FEL	23	I	8485 - 8552
QPBSSU 3 Well No. 2	30-025-29770	2130'FSL - 2030'FEL	23	J	8458 - 8531
QPBSSU 4 Well No. 2	30-025-29749	1950'FSL - 1980'FWL	23	K	8343 - 8515
QPBSSU 10 Well No. 3	30-025-29828	1980'FSL - 990'FWL	23	L	8362 - 8436
QPBSSU 2-A Well No. 1	30-025-30583	660'FN & WL	24	D	8473 - 8545
QPBSSU 11 Well No. 2	30-025-29557	660'FN & EL	26	A	8515 - 8584
QPBSSU 11 Well No. 1	30-025-29482	660'FNL - 2310'FEL	26	B	8512 - 8572
QPBSSU 12-D Well No. 2	30-025-24564	660'FNL - 1980'FWL	26	C	8542 - 8574
QPBSSU 12-E Well No. 1	30-025-29227	660'FN & WL	26	D	8507 - 8532
QPBSSU 7-A Well No. 11	30-025-29516	660'FNL - 530'FEL	27	A	8360 - 8388
QPBSSU 7-A Well No. 10	30-025-29252	2310'FN & EL	27	G	8501 - 8530