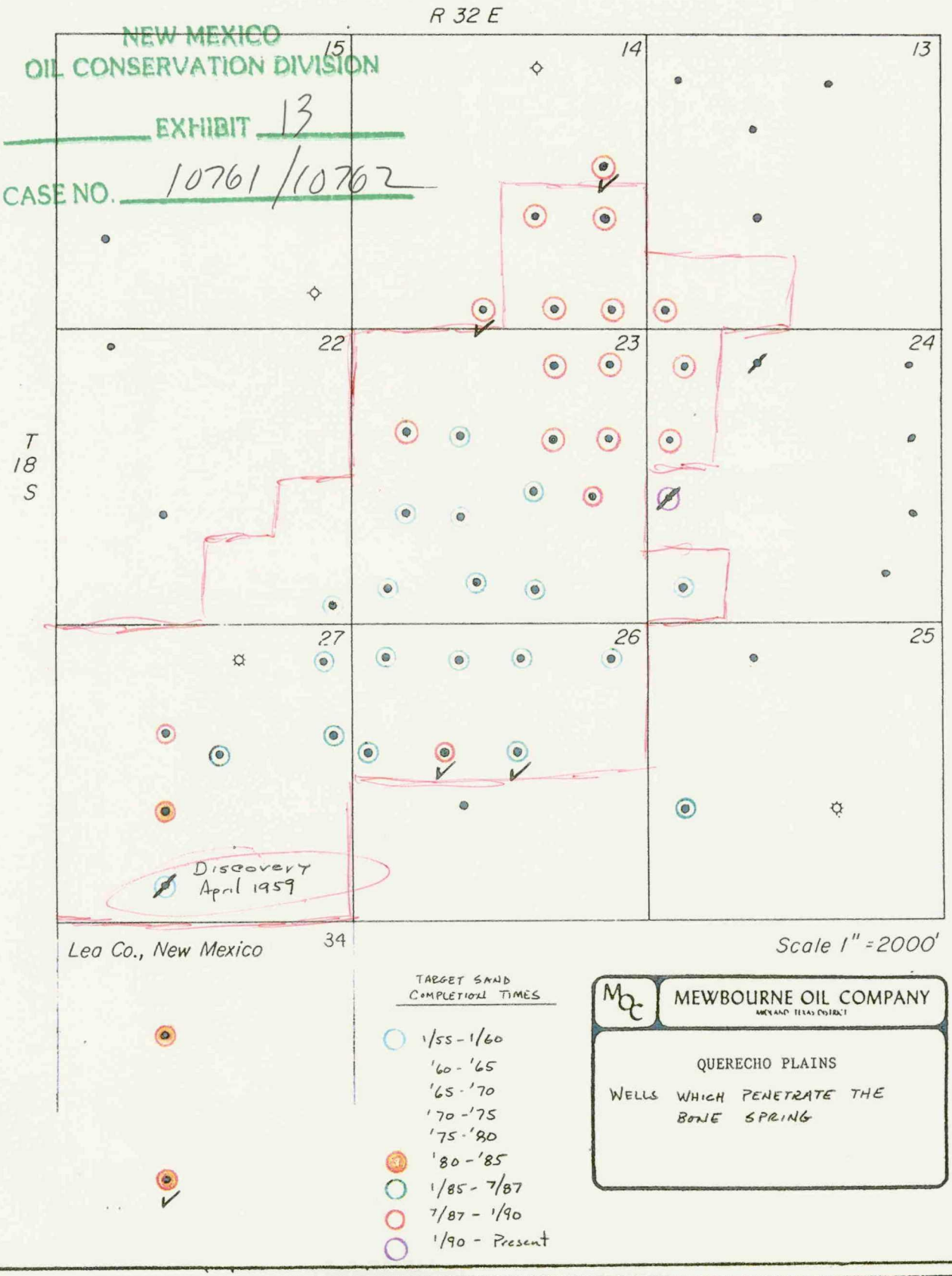
NEW MEXICO
OIL CONSERVATION DIVISION
EXHIBIT 13
CASE NO. 10761 / 10762



✓ = 1st Bone Spring Abandoned

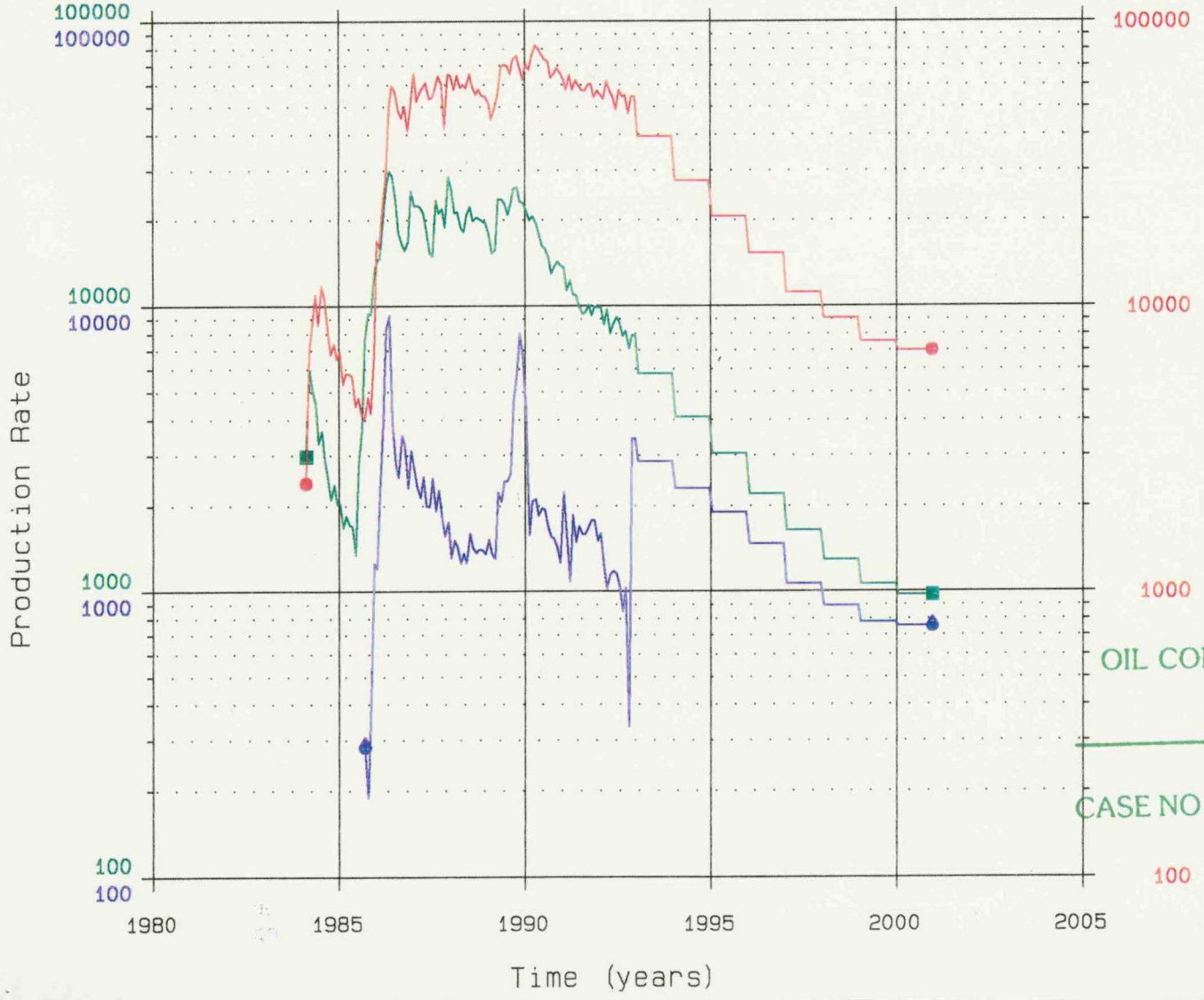
MEWBOURNE OIL CO.

Multiphase Curve Analysis

Rate vs Time

6/07/1993

Project:
UNIT-PRIMARY



Production Curves

OIL: ■ OIL DATA
0 History 2/84 - 10/92
1 List Mode 11/92 - 12/00

GAS: ● GAS DATA
0 History 2/84 - 10/92
1 List Mode 11/92 - 12/00

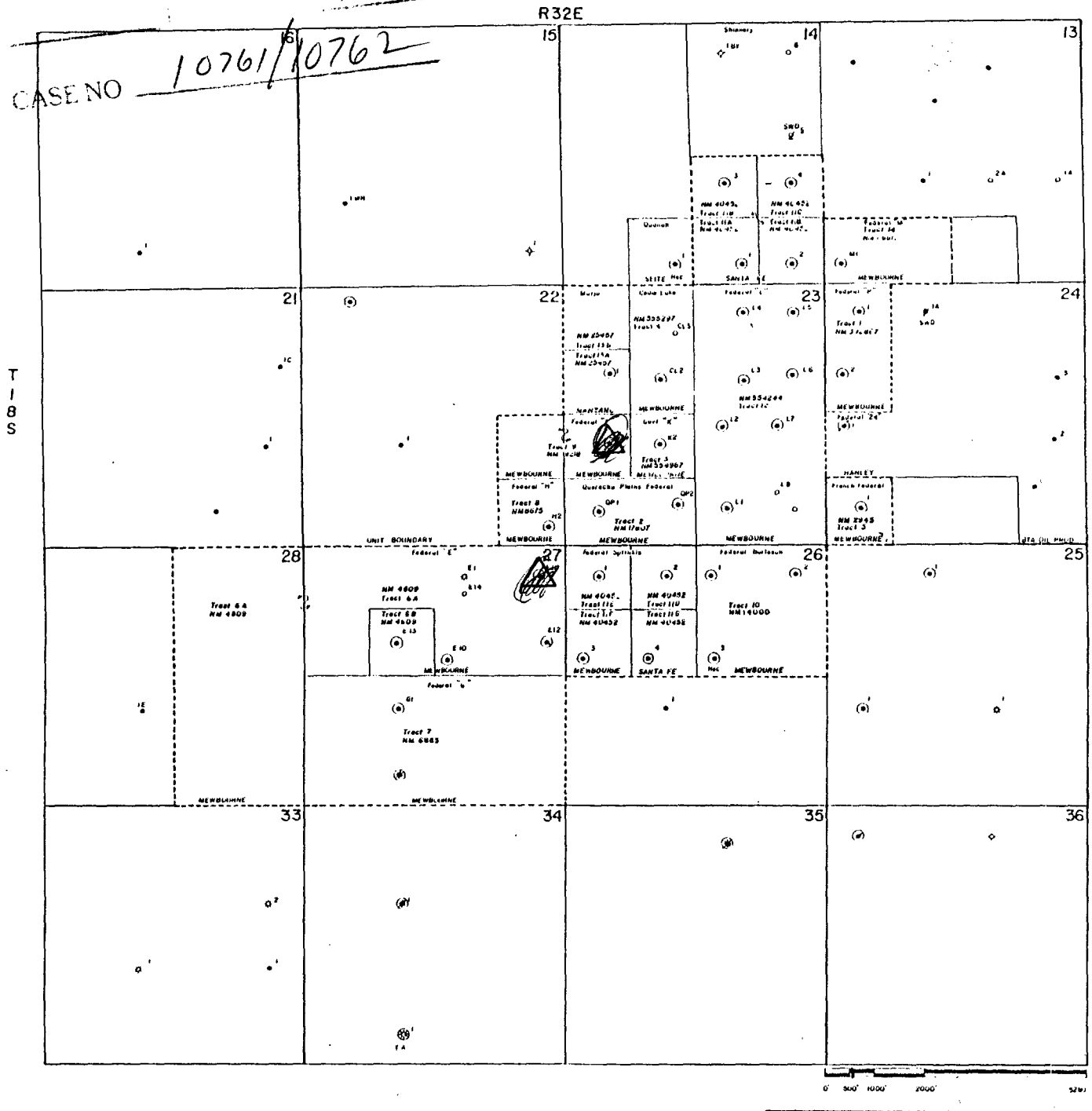
WTR: ◆ WATER DATA
0 History 9/85 - 10/92
1 List Mode 11/92 - 12/00

NEW MEXICO
OIL CONSERVATION DIVISION
EXHIBIT 14
CASE NO. 10761 10762

NEW MEXICO
OIL CONSERVATION DIVISION

16

CASE NO 10761/10762



△ TEST INJECTORS

MOC MEWBOURNE OIL CO
TYLER, TEXAS

QUERECHO PLAINS
LEA COUNTY, NEW MEXICO

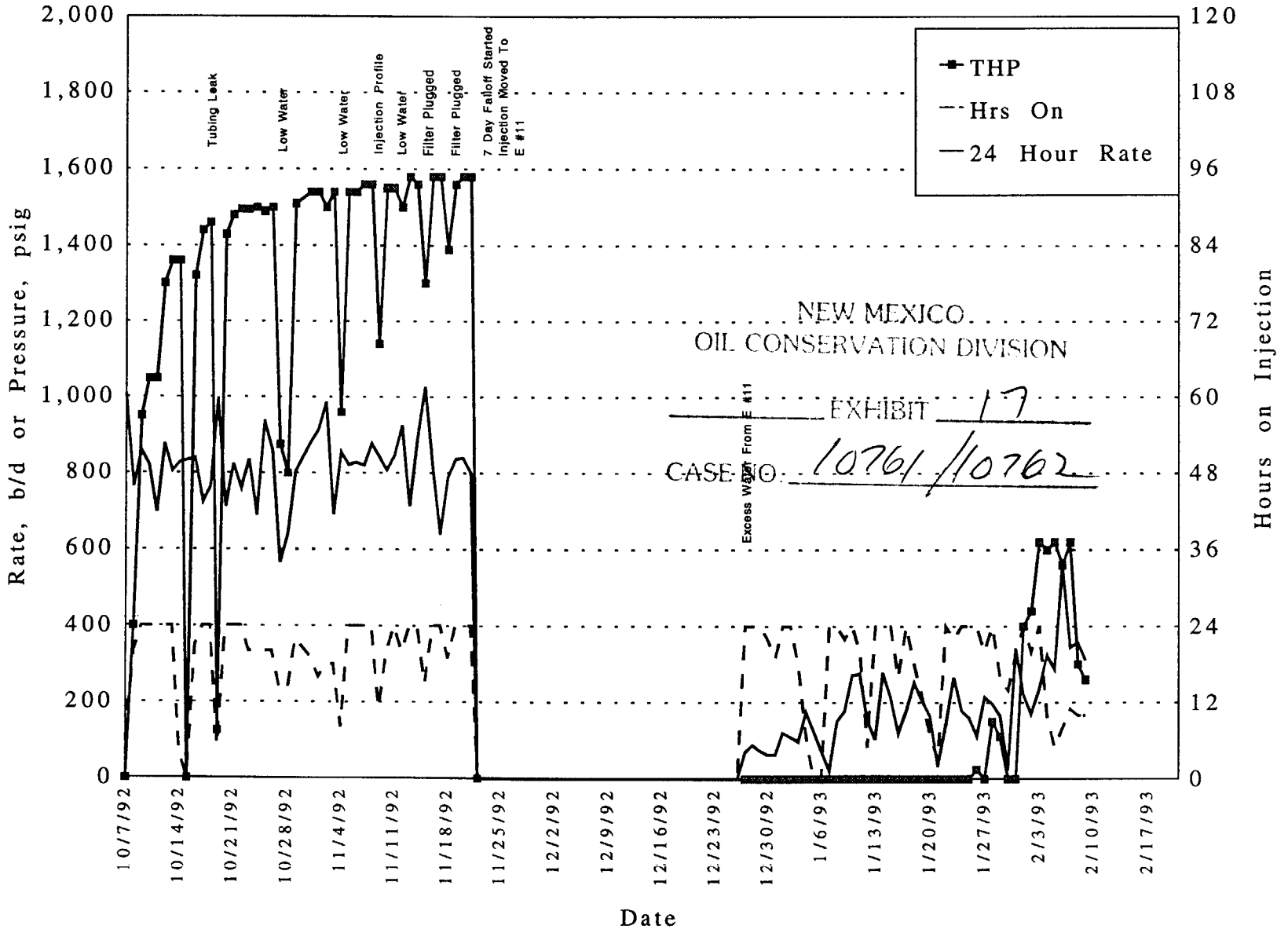
QUERECHO PLAINS BONE SPRING
EXHIBIT "A" UNIT AGREEMENT

REVISED 11-30-92

GOVERNMENT "K" 2

Injection Well Test Performance

Querecho Plains (Bone Spring) Field



NEW MEXICO
OIL CONSERVATION DIVISION
EXHIBIT 17
CASE NO. 10761 / 10762

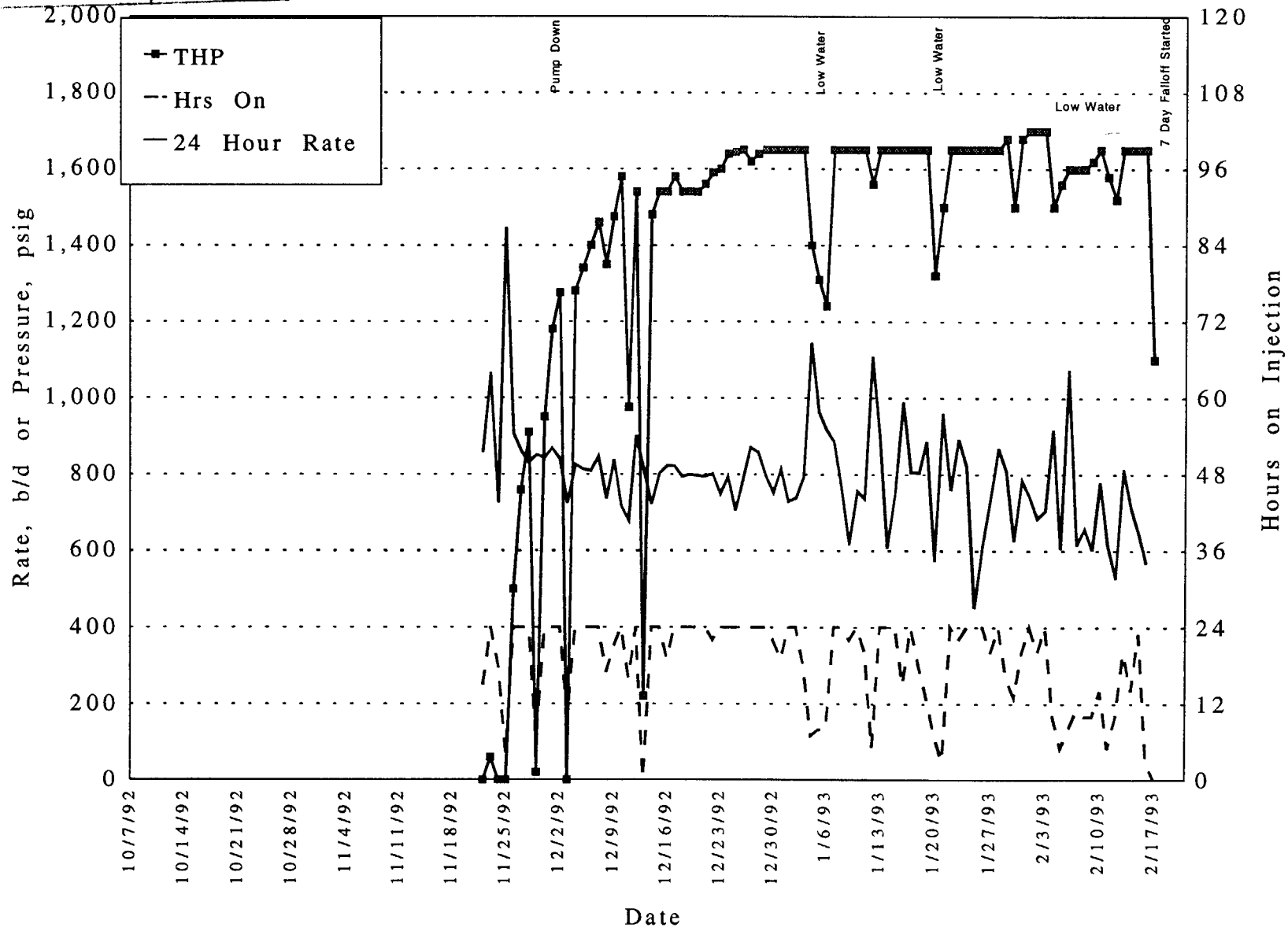
NEW MEXICO
OIL CONSERVATION DIVISION

EXHIBIT 18

CASE NO. 10761/10762

FEDERAL "E" 11

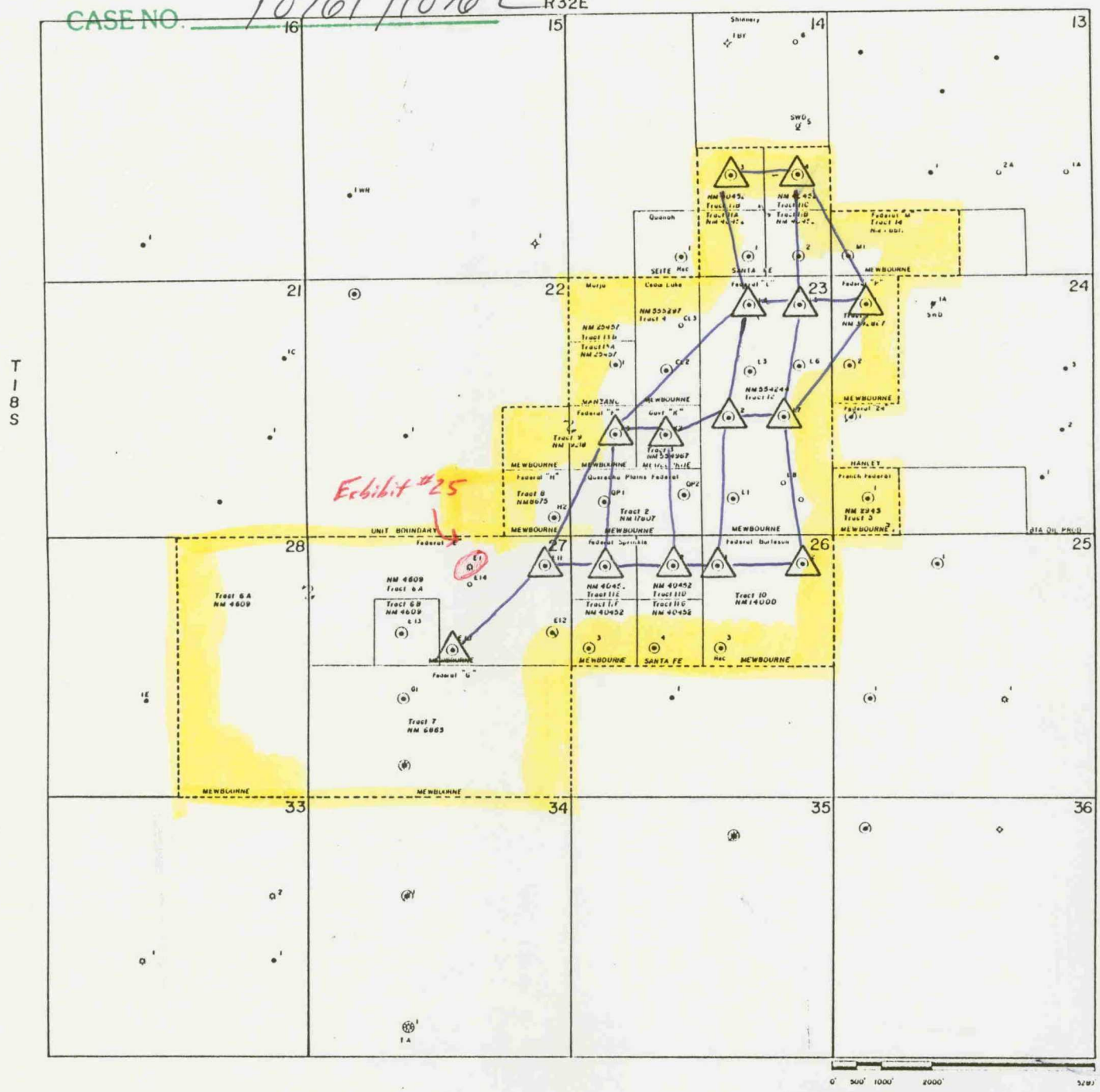
Injection Well Test Performance
Querecho Plains (Bone Spring) Field



NEW MEXICO
OIL CONSERVATION DIVISION

EXHIBIT 19

CASE NO. 10761/10762



△ FULL FLOOD INJECTION PATTERN

MOC MEWBOURNE OIL CO.
TYLER, TEXAS

QUERECHO PLAINS
LEA COUNTY, NEW MEXICO

QUERECHO PLAINS BONE SPRING
EXHIBIT "A" UNIT AGREEMENT

NM 9-91 REVISED 11-30-92 SH 6 3-9-

File:new23a.wq1

NEW CASE 23A WITH INJECTION AND PRODUCTION RATES ADJUSTED FOR TESTS
Production for Proposed Unit Area Only

		DAILY AVERAGE FOR YEAR						ANNUAL VOLUME					CUMULATIVE VOLUME			
ENDING DATE	YEAR	OIL STB/D	GAS MSCF/D	WATER STB/D	INJ WATER STB /D	GOR SCF/ STB	WATER CUT FRAC.	OIL MSTB	GAS MMSCF	PROD WATER MSTB	INJ WATER MSTB	MAKE-UP WATER MSTB	OIL MSTB	GAS MMSCF	PROD WATER MSTB	INJ WATER MSTB
PRIOR													1516.3	4529.4	375.4	0.0
31/12/92	1992(3 m)	274.0	1874.6	118.2	648.1	6841	0.301	25.210	172.460	10.879	59.627		1541.5	4701.8	386.3	59.6
31/12/93	1993	190.3	1197.6	110.3	10038.9	6293	0.367	69.460	437.120	40.243	1847.151	1806.9	1611.0	5139.0	426.5	1906.8
31/12/94	1994	556.1	386.8	974.1	6914.8	696	0.637	202.970	141.180	355.550	2523.912	2168.4	1814.0	5280.1	782.0	4430.7
31/12/95	1995	821.2	275.6	2305.6	4674.2	336	0.737	299.730	100.580	841.544	1706.100	864.6	2113.7	5380.7	1623.6	6136.8
31/12/96	1996	673.6	240.8	2710.5	4172.4	357	0.801	245.880	87.880	989.330	1522.924	533.6	2359.6	5468.6	2612.9	7659.7
31/12/97	1997	526.0	198.3	2880.3	3929.1	377	0.846	192.000	72.380	1051.300	1434.112	382.8	2551.6	5541.0	3664.2	9093.8
31/12/98	1998	424.9	164.4	2979.8	3811.8	387	0.875	155.090	60.020	1087.620	1391.294	303.7	2706.7	5601.0	4751.8	10485.1
31/12/99	1999	351.5	138.7	3047.6	3731.4	394	0.897	128.290	50.610	1112.390	1361.960	249.6	2835.0	5651.6	5864.2	11847.1
31/12/00	2000	299.2	119.8	3106.0	3680.6	401	0.912	109.210	43.740	1133.700	1343.410	209.7	2944.2	5695.3	6997.9	13190.5
31/12/01	2001	258.1	104.9	3130.4	3622.8	407	0.924	94.190	38.290	1142.590	1322.330	179.7	3038.4	5733.6	8140.5	14512.8
31/12/02	2002	218.1	89.9	2773.5	3307.6	412	0.927	79.610	32.830	1012.310	1207.280	195.0	3118.0	5766.5	9152.8	15720.1
31/12/03	2003	174.0	81.4	2162.5	1901.1	468	0.926	63.510	29.720	789.330	693.900	-95.4	3181.5	5796.2	9942.2	16414.0
31/12/04	2004	166.8	70.4	2290.0	2527.1	422	0.932	60.870	25.680	835.840	922.380	86.5	3242.3	5821.9	10778.0	17336.4
31/12/05	2005	153.9	65.2	2293.2	2513.4	424	0.937	56.180	23.800	837.000	917.400	80.4	3298.5	5845.7	11615.0	18253.8
31/12/06	2006	140.6	60.4	2301.4	2514.2	430	0.942	51.320	22.060	840.000	917.700	77.7	3349.8	5867.7	12455.0	19171.5
31/12/07	2007	129.5	56.7	2304.1	2513.7	438	0.947	47.280	20.700	841.000	917.510	76.5	3397.1	5888.4	13296.0	20089.0
31/12/08	2008	114.8	51.3	2002.7	2365.3	447	0.946	41.900	18.710	731.000	863.320	132.3	3439.0	5907.1	14027.0	20952.3
31/12/09	2009	101.0	46.5	1742.5	1961.2	461	0.945	36.860	16.990	636.000	715.840	79.8	3475.9	5924.1	14663.0	21668.2
31/12/10	2010	88.4	42.5	1446.6	1740.6	481	0.942	32.260	15.510	528.000	635.310	107.3	3508.1	5939.6	15191.0	22303.5
31/12/11	2011	80.5	39.8	1328.8	1498.8	494	0.943	29.400	14.520	485.000	547.050	62.0	3537.5	5954.2	15676.0	22850.5
31/12/12	2012	75.0	37.5	1287.7	1470.1	500	0.945	27.360	13.680	470.000	536.600	66.6	3564.9	5967.8	16146.0	23387.1
31/12/13	2013	68.3	34.6	1211.0	1371.6	506	0.947	24.920	12.620	442.000	500.640	58.6	3589.8	5980.5	16588.0	23887.8
31/12/14	2014	64.1	32.6	1208.2	1351.7	508	0.950	23.400	11.890	441.000	493.360	52.4	3613.2	5992.3	17029.0	24381.1
31/12/15	2015	60.7	30.9	1202.7	1341.3	509	0.952	22.140	11.280	439.000	489.590	50.6	3635.4	6003.6	17468.0	24870.7

NEW MEXICO
OIL CONSERVATION DIVISION
EXHIBIT 20
CASE NO. 10761 / 10762

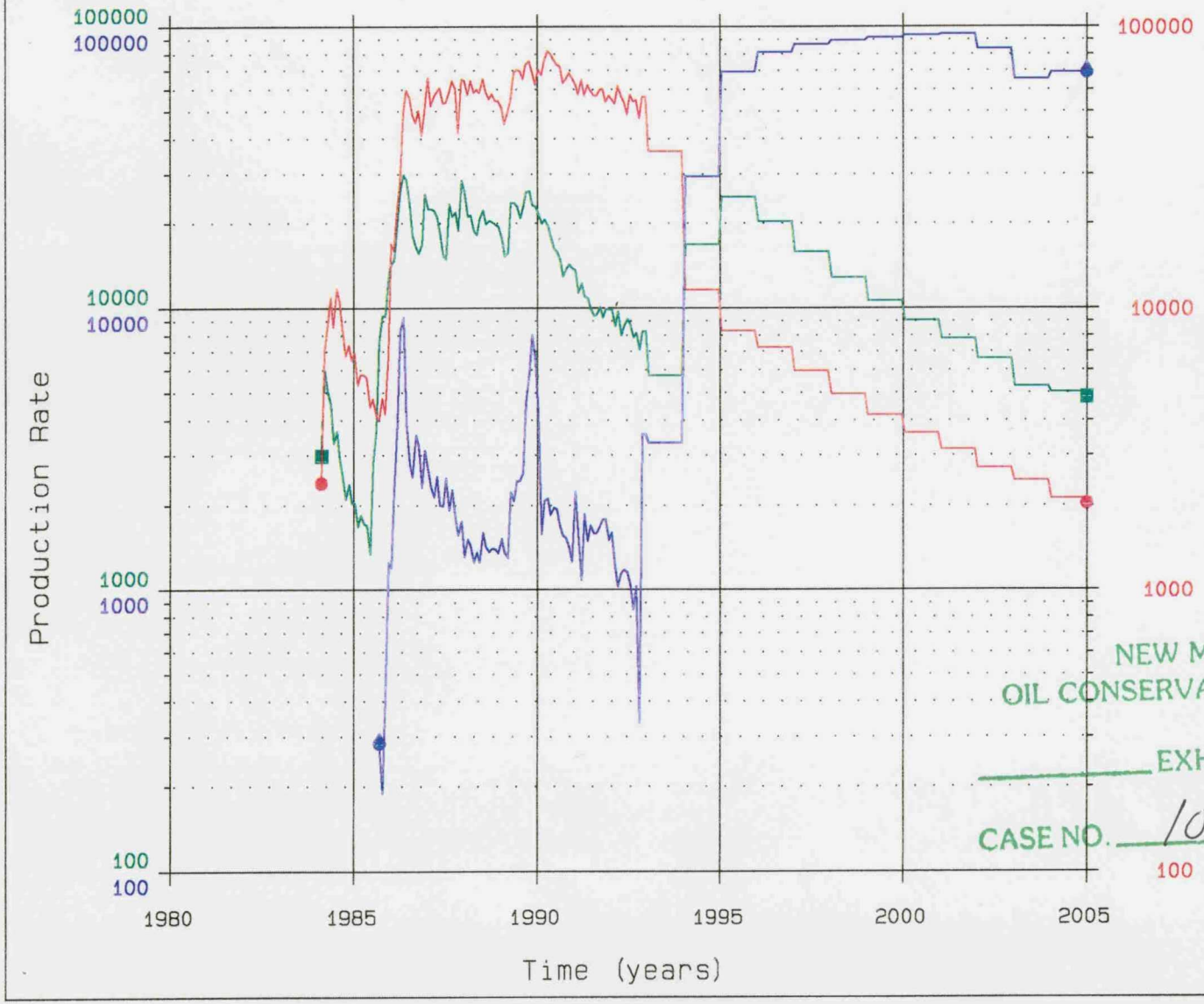
MEWBOURNE OIL CO.

Multiphase Curve Analysis

Rate vs Time

6/07/1993

Project:
UCASE23A



Production Curves

OIL: ■ OIL DATA
0 History 2/84 - 10/92
1 List Mode 11/92 - 12/15

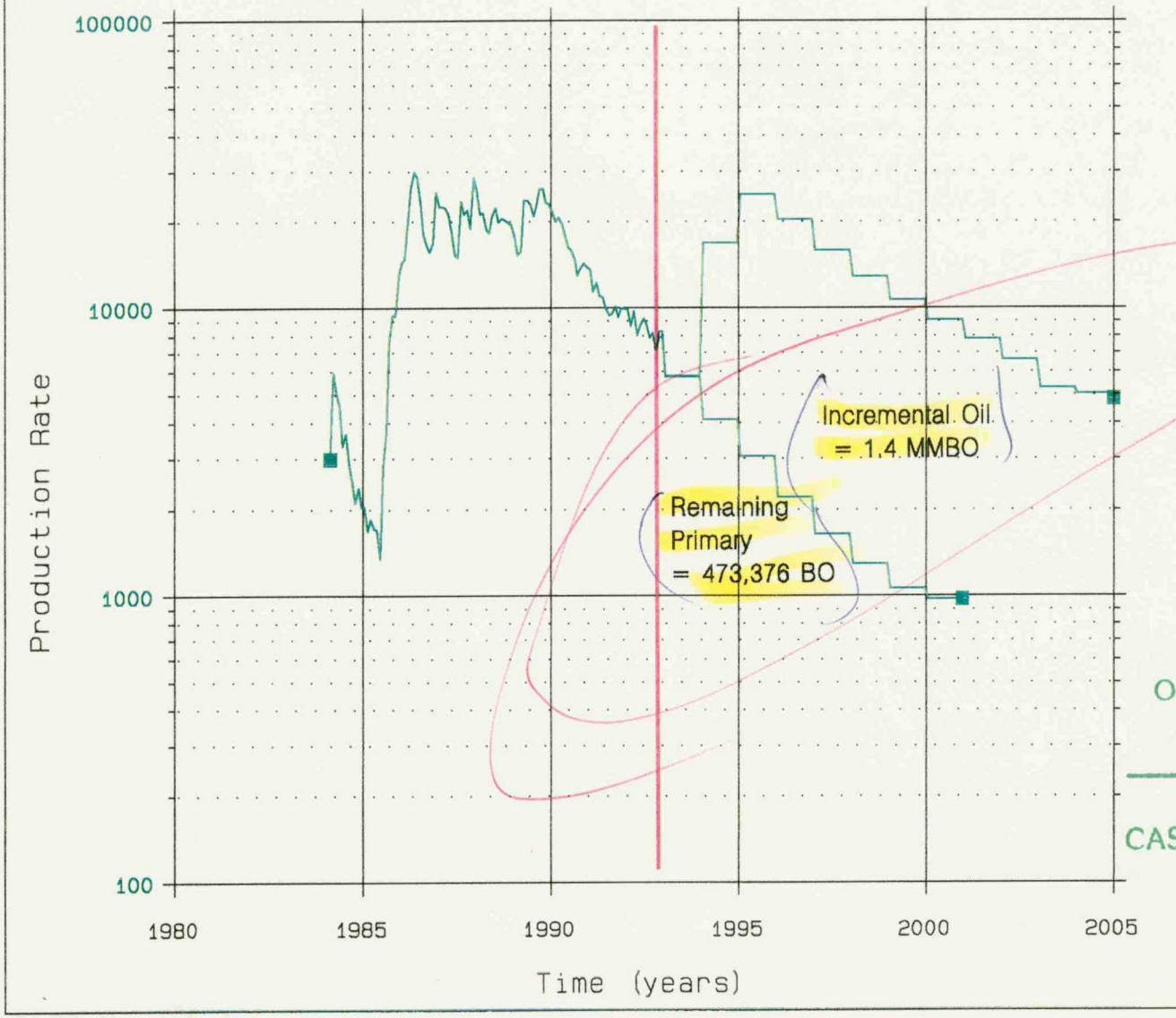
GAS: • GAS DATA
0 History 2/84 - 10/92
1 List Mode 11/92 - 12/15

WTR: • WATER DATA
0 History 9/85 - 10/92
1 List Mode 11/92 - 12/15

NEW MEXICO
OIL CONSERVATION DIVISION
EXHIBIT 21
CASE NO. 10761/10762

MEWBOURNE OIL CO.
Multiphase Curve Analysis
Rate vs Time

6/07/1993
Project:



Production Curves

OIL: ■ OIL DATA
0 History 2/84 - 10/92
1 List Mode 11/92 - 12/08

NEW MEXICO
OIL CONSERVATION DIVISION
EXHIBIT 22
CASE NO. 10761/10762

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

May 5, 1998

Mewbourne Oil Company
P.O. Box 7698
Tyler, Texas 75711-7698

Attn: Mr. K.M. Calvert

RE: Injection Pressure Increase Quercho Plains Bone Spring Sand Unit EOR Waterflood Project Lea County, New Mexico.

Dear Mr. Calvert:

Reference is made to your request dated September 26, 1997 and revised April 22, 1998, to increase the surface injection pressure on twelve wells in the above referenced project. This request is based on step rate tests conducted on these wells immediately prior to your original request, and additional information supplied on April 22, 1998. The results of the tests and additional data have been reviewed by my staff and we feel an increase in injection pressures on these wells is justified at this time.

You are therefore authorized to increase the surface injection pressure on the following wells:

Well and location	*Maximum Surface Injection Pressure*
QPBSSU Well No.3-2, UL 'J' of Section 23	2325 PSIG
QPBSSU Well No.3-4, UL 'B' of Section 23	2425 PSIG
QPBSSU Well No.4-2, UL 'K' of Section 23	2450 PSIG
QPBSSU Well No.7A-10, UL 'G' of Section 27	2450 PSIG
QPBSSU Well No.7A-11, UL 'A' of Section 27	2450 PSIG
QPBSSU Well No.10-3, UL 'L' of Section 23	2450 PSIG
QPBSSU Well No.11-1, UL 'B' of Section 26	2450 PSIG
QPBSSU Well No.11-2, UL 'A' of Section 26	2420 PSIG

Well and location	***Maximum Surface Injection Pressure***
QPBSSU Well No.12B-3, UL 'J' of Section 14	2450 PSIG
QPBSSU Well No.12C-4, UL 'I' of Section 14	2400 PSIG
QPBSSU Well No.12D-2, UL 'C' of Section 26	2420 PSIG
QPBSSU Well No.16-1, UL 'L' of Section 24	2450 PSIG
All wells located in Lea County, New Mexico.	

The Division Director may rescind any injection pressure increase if it becomes apparent that the injected water is not being confined to the injection zone or is endangering any fresh water aquifers.

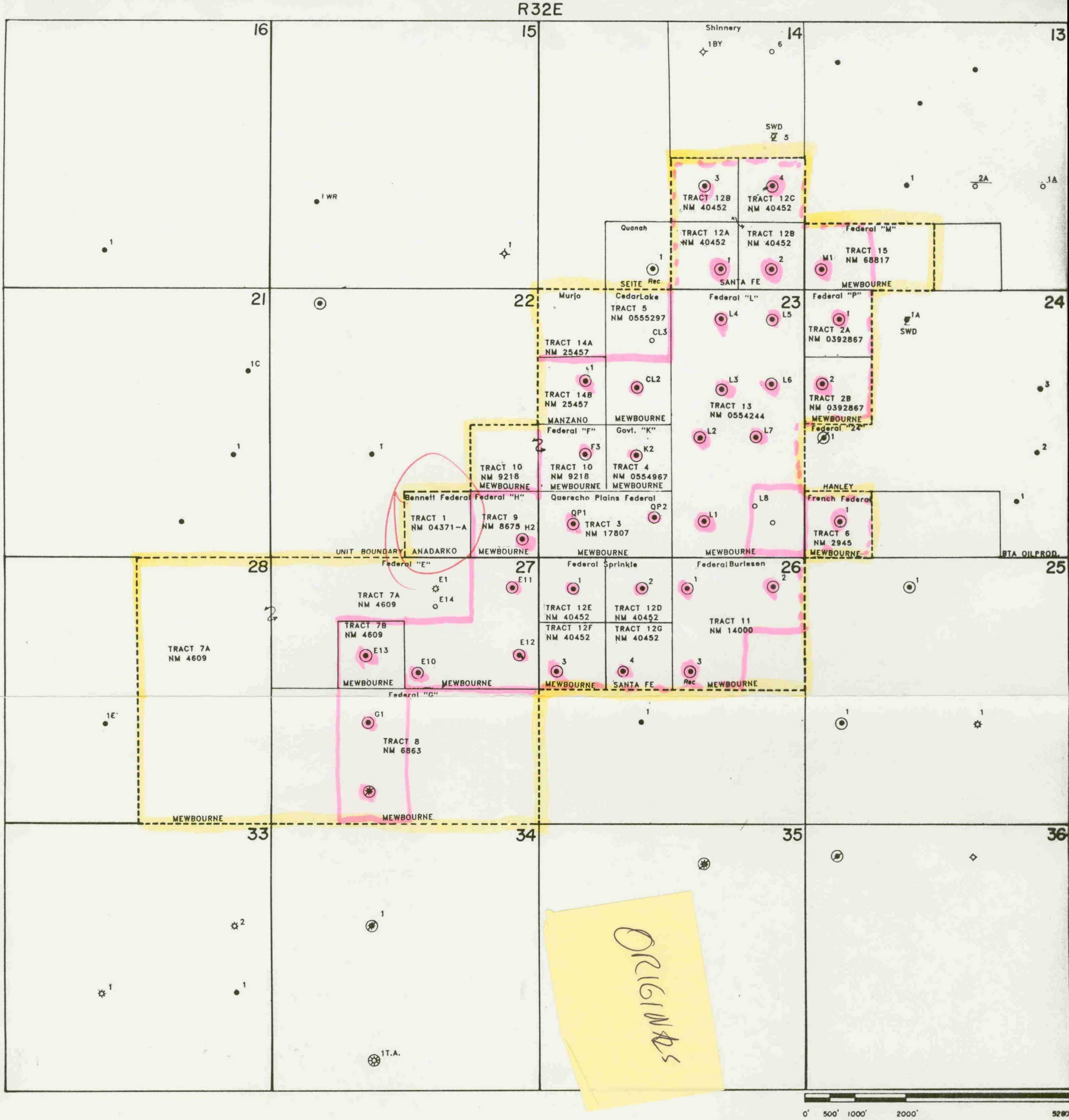
Sincerely,

Lori Wrotenbery

Lori Wrotenbery
Director

LW/BES/kv

cc: Oil Conservation Division - Hobbs
Files: Case File No.10762; EOR-9; PSI-X 4th QTR 98


R32E
T 18 S
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33
34
35
36
Shinnery
SWD
Quanah
SEITE
Murjo
CedarLake
Federal "L"
Federal "P"
Federal "M"
TRACT 12B NM 40452
TRACT 12C NM 40452
TRACT 12A NM 40452
TRACT 15 NM 68817
TRACT 5 NM 0555297
TRACT 14A NM 25457
TRACT 14B NM 25457
TRACT 2A NM 0392867
TRACT 2B NM 0392867
TRACT 13 NM 0554244
SANTA FE
MANZANO
MEWBOURNE
Federal "F"
Govt. "K"
Federal "24"
TRACT 10 NM 9218
TRACT 4 NM 0554967
Bennett Federal
Federal "H"
Querecho Plains Federal
HANLEY
French Federal
TRACT 1 NM 04371-A
TRACT 9 NM 8675
TRACT 3 NM 17807
TRACT 6 NM 2945
UNIT BOUNDARY
ANADARKO
BTA OILPROD.
Federal "E"
Federal
Sprinkle
Federal Burleson
TRACT 7A NM 4609
TRACT 7B NM 4609
TRACT 12E NM 40452
TRACT 12D NM 40452
TRACT 12F NM 40452
TRACT 12G NM 40452
TRACT 11 NM 14000
Federal "G"
TRACT 8 NM 6863
ORIGINALS
0' 500' 1000' 2000' 5280'

Tracts change 3 to 13 and vice versa

NEW MEXICO
OIL CONSERVATION DIVISION

~~10761/10762~~ EXHIBIT 1

CASE NO. 10761/10762

MEWBOURNE OIL CO.
TYLER, TEXAS

QUERECHO PLAINS
LEA COUNTY, NEW MEXICO

QUERECHO PLAINS BONE SPRING SAND UNIT

EXHIBIT "A" UNIT AGREEMENT
2,400 ACRE UNIT

KM 9-91

REVISED 6/10/93
REVISED 5/25/93
REVISED 11/30/92

SH 6-3-92

NEW MEXICO ENERGY, MINERALS and
NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

ADMINISTRATIVE ORDER NO. WFX-776

APPLICATION OF MEWBOURNE OIL COMPANY TO EXPAND ITS WATERFLOOD PROJECT IN THE QUERECHO PLAINS-UPPER BONE SPRING POOL IN LEA COUNTY, NEW MEXICO

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION

Under the provisions of Division Order No. R-9737-A, Mewbourne Oil Company has made application to the Division on July 31, 2001, for permission to expand its Querecho Plains Bone Spring Sand Unit Waterflood Project in the Querecho Plains-Upper Bone Spring Pool in Lea County, New Mexico.

THE DIVISION DIRECTOR FINDS THAT:

(1) The application has been filed in due form.

(2) Satisfactory information has been provided that all offset operators have been duly notified of the application.

(3) No objection has been received within the waiting period as prescribed by Rule 701(B).

(4) The proposed injection well is eligible for conversion to injection under the terms of Rule 701.

(5) The proposed expansion of the above referenced Querecho Plains Bone Spring Sand Unit Waterflood Project will not cause waste nor impair correlative rights.

(6) The application should be approved.

IT IS THEREFORE ORDERED THAT:

The applicant, Mewbourne Oil Company, is hereby authorized to inject water into the Upper-Bone Spring formation at approximately 8,459 feet to approximately 8,526 feet through 2 3/8-inch plastic lined tubing set in a packer located at approximately 8,359 feet in the following-described well for purposes of secondary recovery to wit:

Querecho Plains Bone Spring Sand Unit Well No. 13-2
API No. 30-025-29679
760' FSL & 2310' FWL, Unit N,
Section 23, Township 18 South, Range 32 East, NMPM
Lea County, New Mexico

IT IS FURTHER ORDERED THAT:

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 to other formations or onto the surface.

Prior to commencing injection operations into the well, the casing shall be pressure tested from the surface to the packer setting depth to assure the integrity of said casing.

The casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge at the surface or left open to the atmosphere to facilitate detection of leakage in the casing, tubing or packer.

The injection well or system shall be equipped with a pressure limiting device which will limit the wellhead pressure on the injection well to 1692 psi.

The Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the Upper-Bone Spring formation. Such proper showing shall consist of a valid step-rate test run in accordance with and acceptable to this office.

The operator shall notify 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 test so that the same may be inspected and witnessed.

The operator shall immediately notify the supervisor of the Hobbs district office of the Division of the failure of the tubing, casing or packer in said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

The subject well shall be governed by all provisions of Division Order No. R-9737-A and Rules 702-706 of the Division Rules and Regulations not inconsistent herewith.

PROVIDED FURTHER THAT, 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 water or (2) consistent with the requirements in this order, whereupon the Division may, after notice and hearing, terminate the injection authority granted herein.

The injection authority granted herein 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 by the operator, may grant an extension thereof for good cause shown.

DONE at Santa Fe, New Mexico, on this 24th day of August, 2001.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

Lori Wrotenbery by DRC

LORI WROTENBERY
Director

S E A L

LW/DRC

cc: Oil Conservation Division - Hobbs
Bureau of Land Management - Carlsbad
Case File No. 10762