

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



BRUCE KING
GOVERNOR

October 17, 1991

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

Shell Western E & P Inc.
P.O. Box 576
Houston, Texas 77001

Attention: W.F.N. Kelldorf

*RE: Injection Pressure Increase
N. Hobbs GISA Unit
Lea County, New Mexico*

Dear Mr. Kelldorf:

Reference is made to your request dated September 4, 1991, to increase the surface injection pressure on seven wells within the North Hobbs Grayburg San Andres Unit Pressure Maintenance Project. This request is based on step rate tests conducted on these wells during 1991. The results of the test have been reviewed by my staff and we feel an increase in injection pressure on these wells is justified at this time.

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

<u>WELL AND LOCATION</u>	<u>MAXIMUM INJECTION SURFACE PRESSURE</u>
NHGSAU No. 23-211 Unit C, Section 23, T-18S, R-37E, NMPM	1015 PSIG
NHGSAU No. 23-341 Unit O, Section 23, T-18S, R-37E, NMPM	1325 PSIG
NHGSAU No. 29-342 Unit O, Section 29, T-18S, R-37E, NMPM	1050 PSIG

Shell Western E & P Inc.

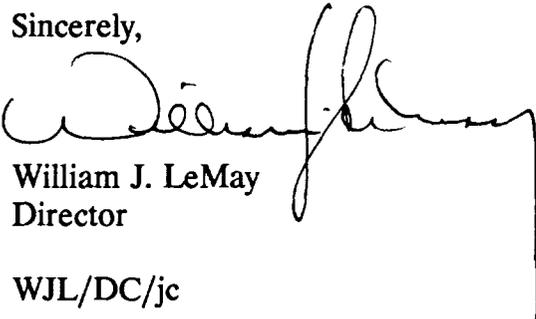
Page 2

October 16, 1991

NHGSAU No. 30-141 Unit M, Section 30, T-18S, R-38E, NMPM	1365 PSIG
NHGSAU No. 32-112 Unit E, Section 32, T-18S, R-38E, NMPM	1790 PSIG
NHGSAU No. 36-321 Unit G, Section 36, T-18S, R-37E, NMPM	1740 PSIG
NHGSAU No. 36-411 Unit A, Section 36, T-18S, R-37E, NMPM	1950 PSIG

The Division Director may rescind this 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,



William J. LeMay
Director

WJL/DC/jc

cc: Oil Conservation Division - Hobbs
File: Case No. 6653 ✓
D. Catanach
R. Brown

NO WAITING PERIOD

COMPANY: Shell Western E & P Inc.
ADDRESS: P.O. Box 576
CITY, STATE, ZIP: Houston, Texas 77001
ATTENTION: W. F. N. Keldorff

Re: Injection Pressure Increase
N. Hobbs GISA Unit
Lea County, New Mexico

Dear Sir:

Reference is made to your request dated September 4, 1991, to increase the surface injection pressure on Seven wells within the North Hobbs Grayburg San Andres Waterflood Project. This request is based on step rate tests conducted on these wells during, 1991. The results of the tests have been reviewed by my staff and we feel an increase in injection pressure on these wells is justified at this time.

Pressure Maintenance

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

<u>Well & Location</u>	<u>Maximum Injection Surface Pressure</u>
<u>NHGSAU No 23-211</u> <u>Unit C, Section 23, T-18N, R 37E.</u>	<u>1015 PSIG</u>
<u>NHGSAU No 23-341</u> <u>Unit O, Section 23, T-18N, R 37E</u>	<u>1325 PSIG</u>
<u>NHGSAU No 29-342</u> <u>Unit O, Secto 29, T-18N, R 37E</u>	<u>1050 PSIG</u>
<u>NHGSAU No. 30-141</u> <u>Unit M, Section 30, T-18N, R 38E</u>	<u>1365 PSIG</u>
<u>NHGSAU No. 32-112</u> <u>Unit E, Section 32, T-18N, R 38E</u>	<u>1795 PSIG</u>
<u>NHGSAU No 36-331</u> <u>Unit G, Section 36, T-18N, R 37E</u>	<u>1745 PSIG</u>
<u>NHGSAU No. 36-411</u> <u>Unit H, Section 36, T-18N, R 37E</u>	<u>1950 PSIG</u>

The Division Director may rescind this 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.

OIL CONSERVATION DIVISION
RECEIVED
Shell Western E&P Inc.
An Affiliate of Shell Oil Company
'91 SEP 10 AM 8 44



P.O. Box 576
Houston, TX 77001

September 4, 1991

Mr. David R. Catanach
New Mexico Oil Conservation Division
State Land Office Building
310 Old Santa Fe Trail
P. O. Box 2088
Santa Fe, New Mexico 87504-2088

Dear Mr. Catanach:

SUBJECT: REQUEST FOR INCREASED SURFACE INJECTION PRESSURE ON SELECTED
WELLS IN THE NORTH HOBBS (G/SA) UNIT
LEA COUNTY, NEW MEXICO 87503

SWEPI, as Unit operator of the North Hobbs (G/SA) Unit, requests that the surface injection pressure limit be increased for the seven injection wells listed in the attachment. The requested increases are based on step rate tests which are attached for your review.

The requested increases in surface injection pressure are necessary to maintain adequate injection rates to recover oil reserves. Continued optimum performance of the waterflood project can, thus, be assured.

Should you have any questions or require additional information, please contact me at (713) 870-3426.

Yours very truly,

A handwritten signature in black ink, appearing to read "W. F. N. Kelldorf".

W. F. N. Kelldorf
Division Environmental Engineer - HS&E
Western Division

WFNK:rlb

Attachments

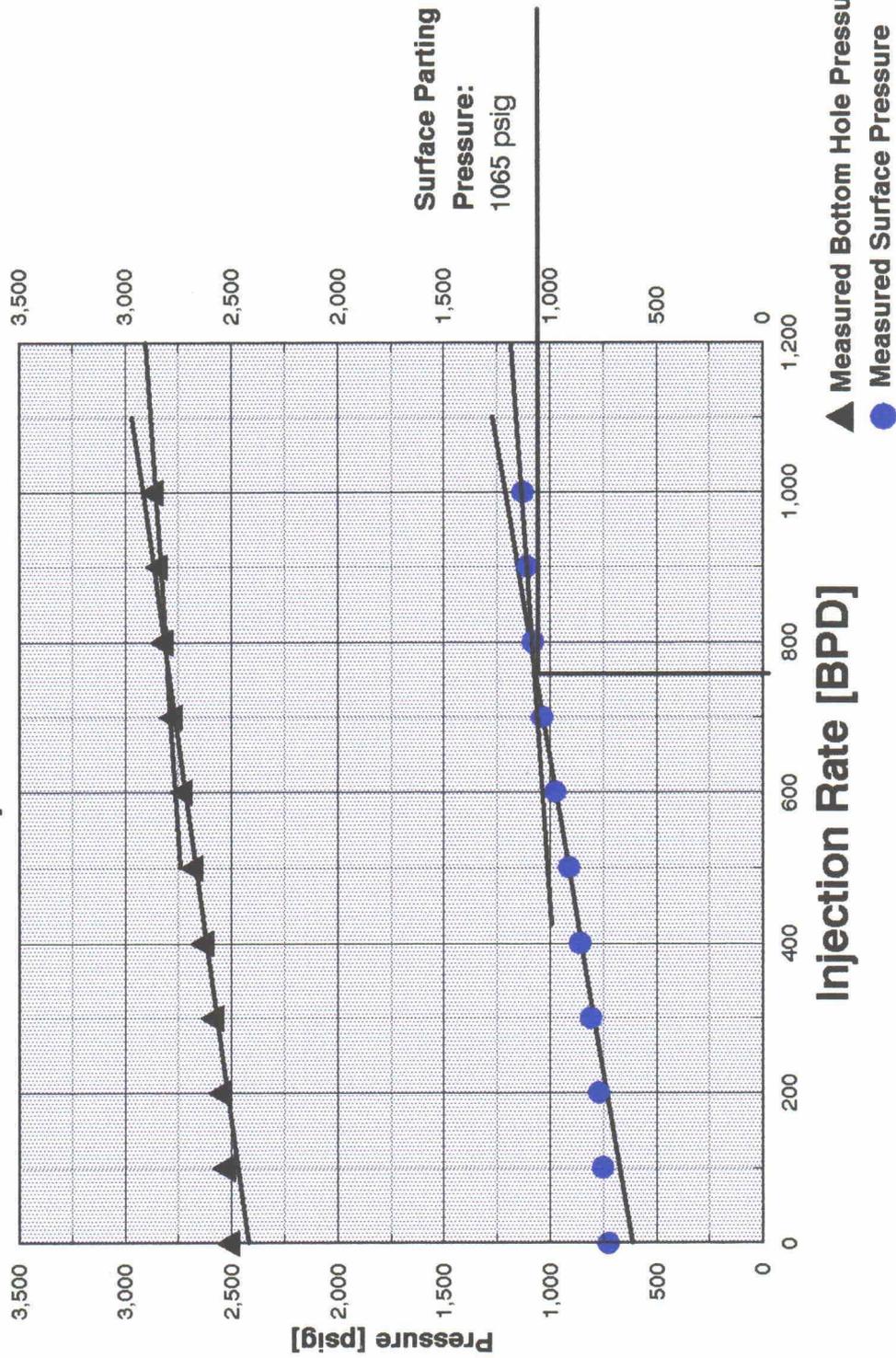
cc: Mr. Jerry Sexton
New Mexico Oil Conservation Division
P. O. Box 1980
Hobbs, New Mexico 88240

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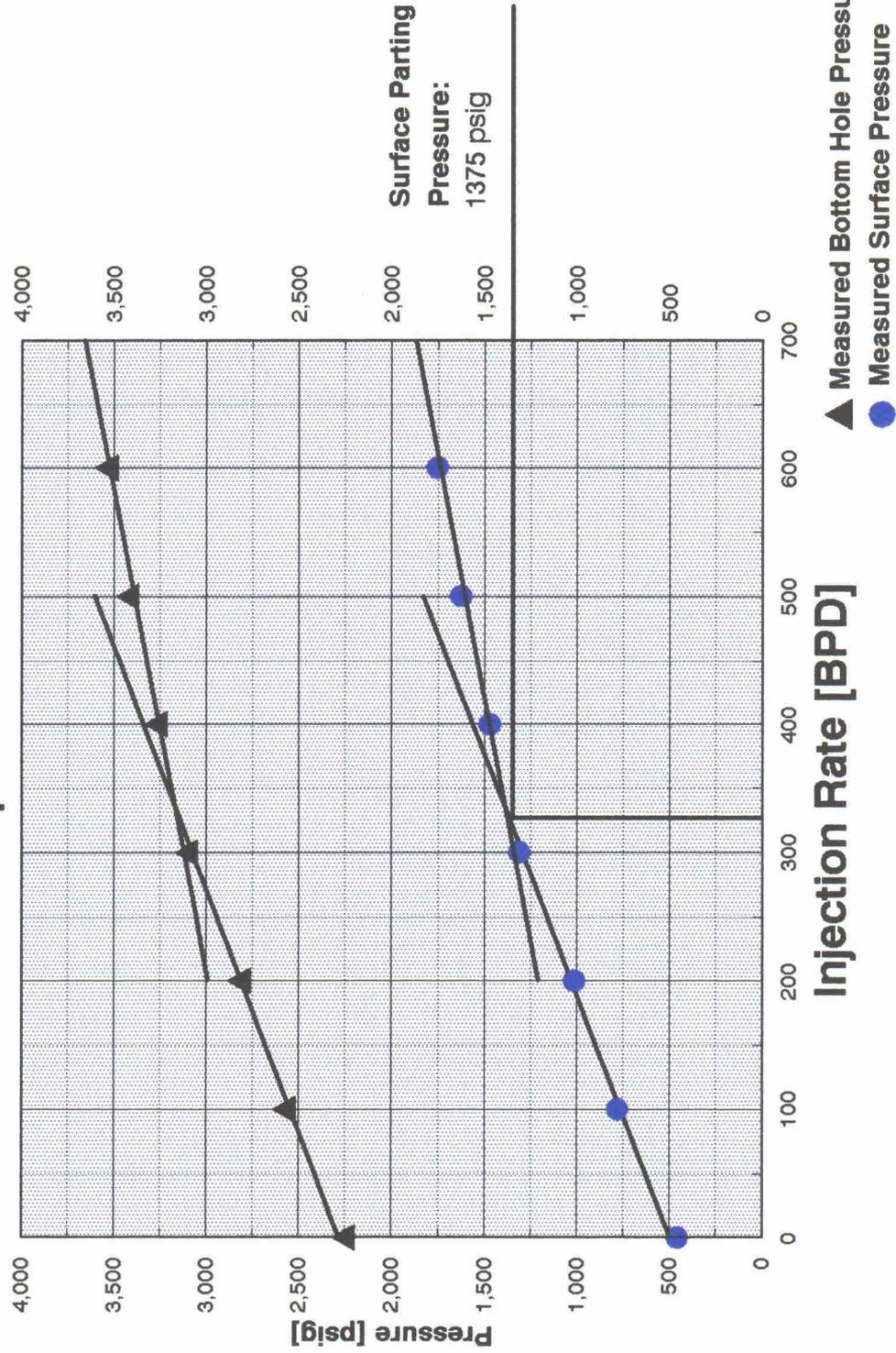
**North Hobbs Unit
Step Rate Tests**

Well	Surface Parting Pressure (psi)	Current Permit Pressure (psi)	Recommended Surface Pressure (psi)
23-211	1065	818	1040
23-341	1375	829	1350
29-342	1100	820	1080
30-141	1415	801	1390
32-112	1840	819	1820
36-321	1790	831	1770
36-411	2000	812	1980

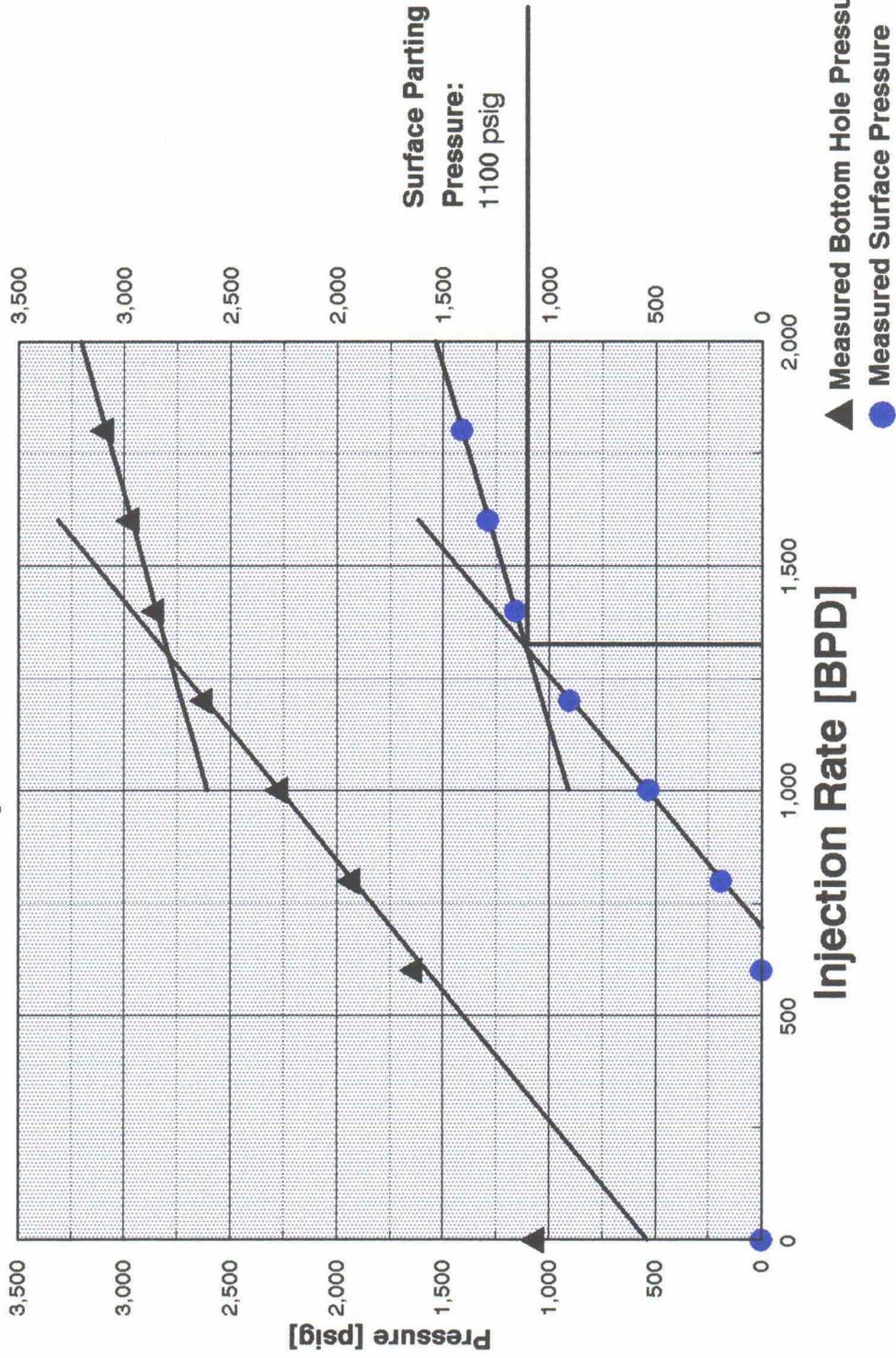
North Hobbs Unit 23-211 Step Rate Test



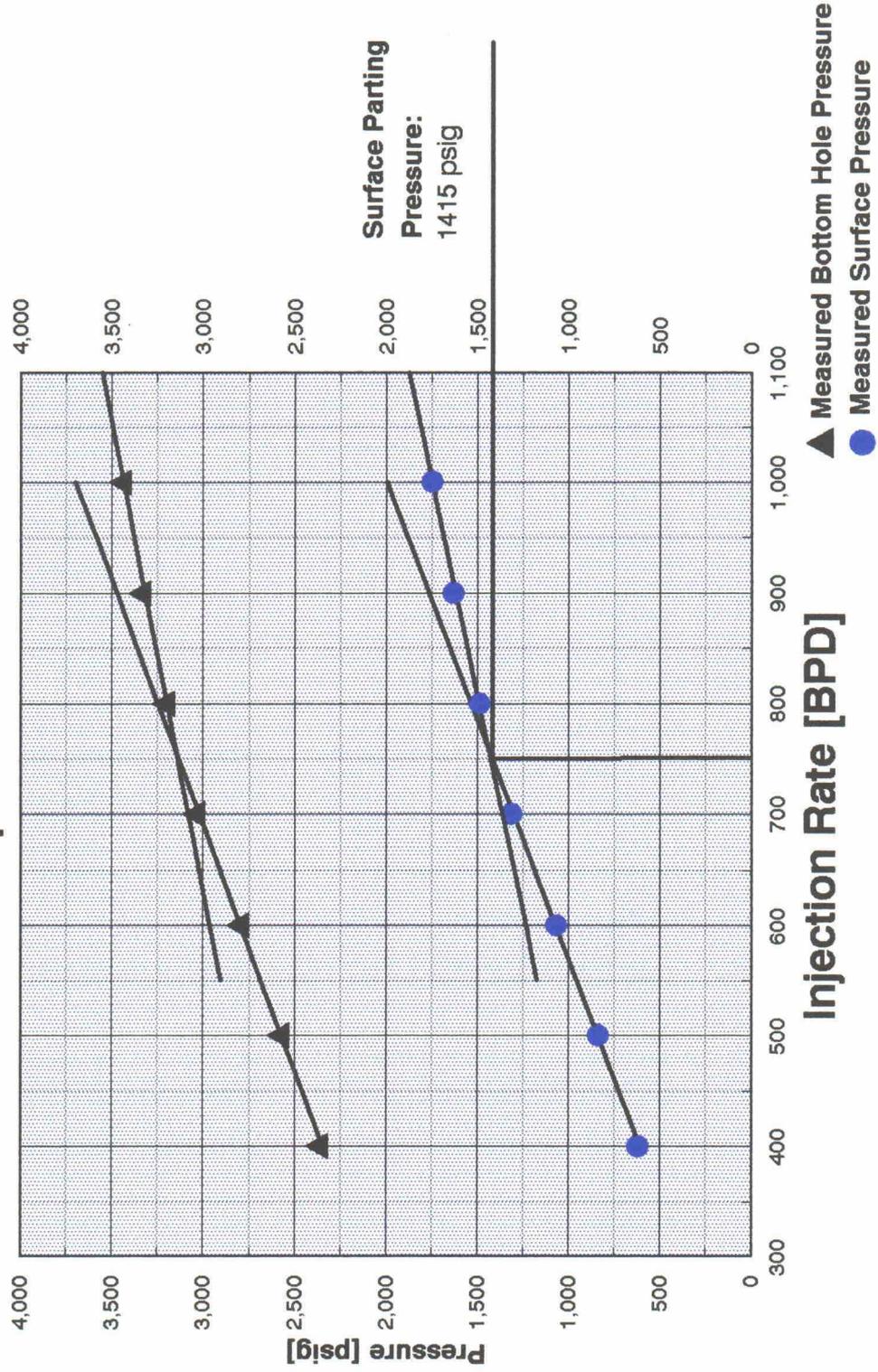
North Hobbs Unit 23-341 Step Rate Test



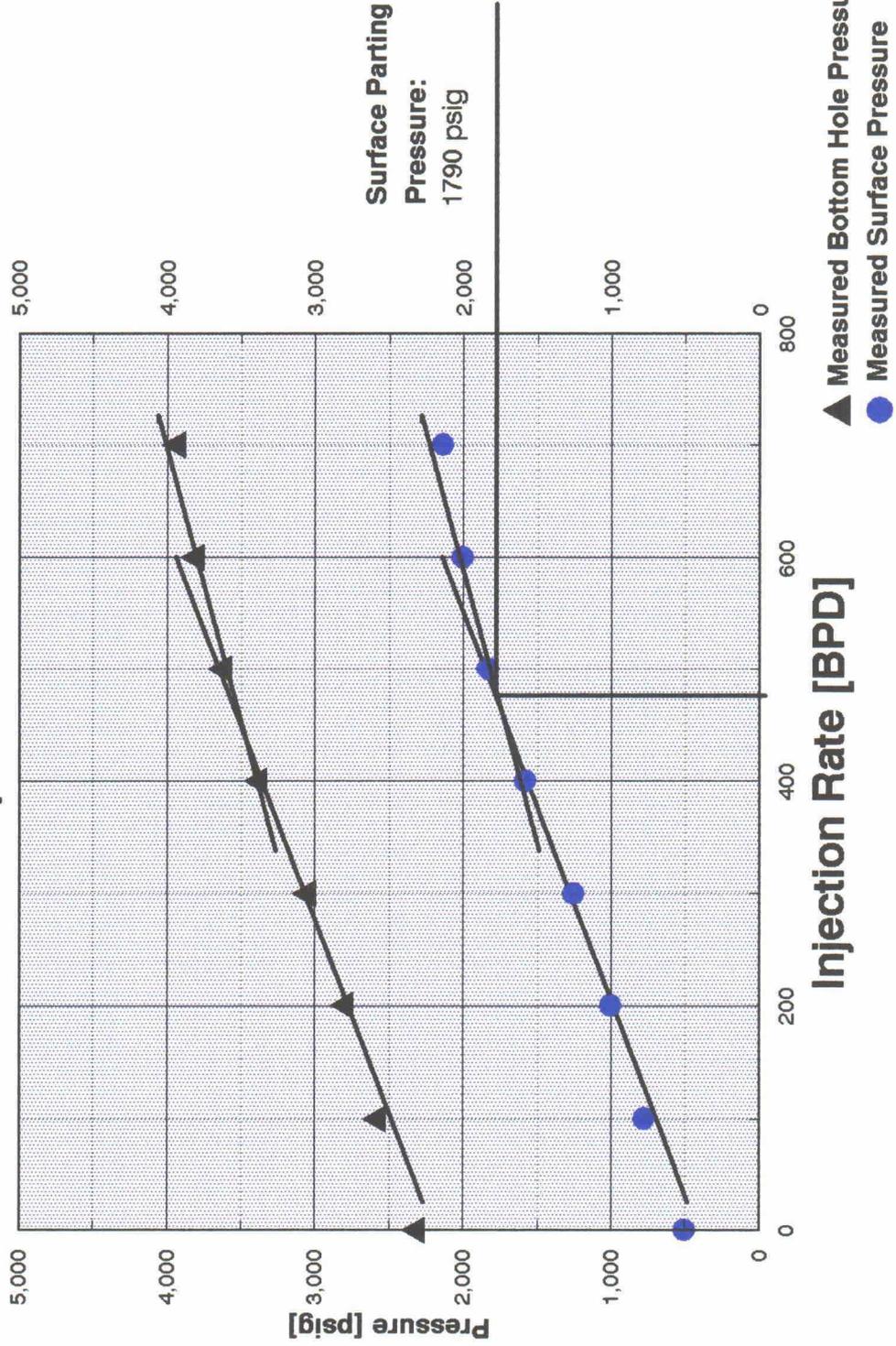
North Hobbs Unit 29-342 Step Rate Test



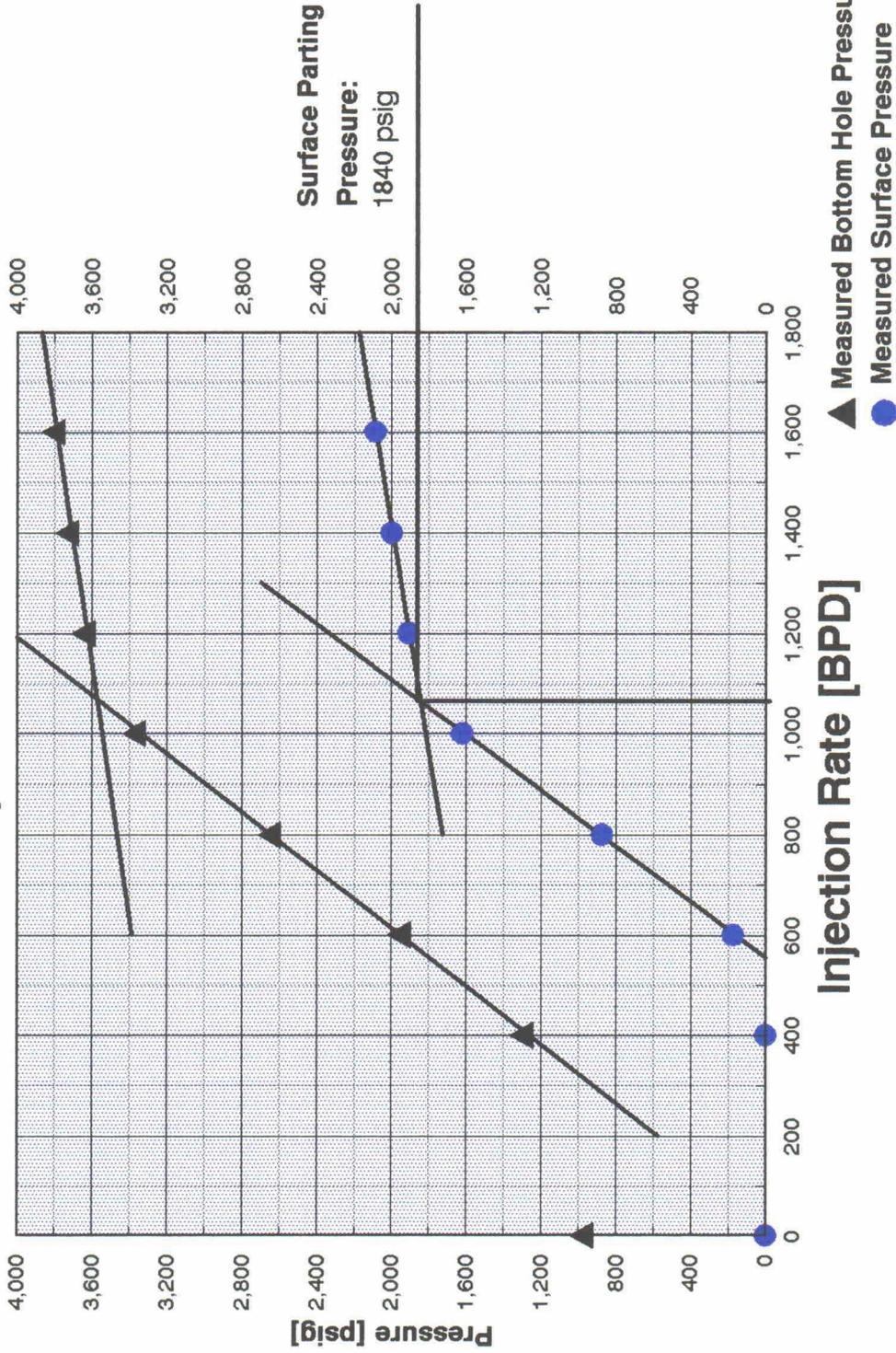
North Hobbs Unit 30-141 Step Rate Test



North Hobbs Unit 36-321 Step Rate Test



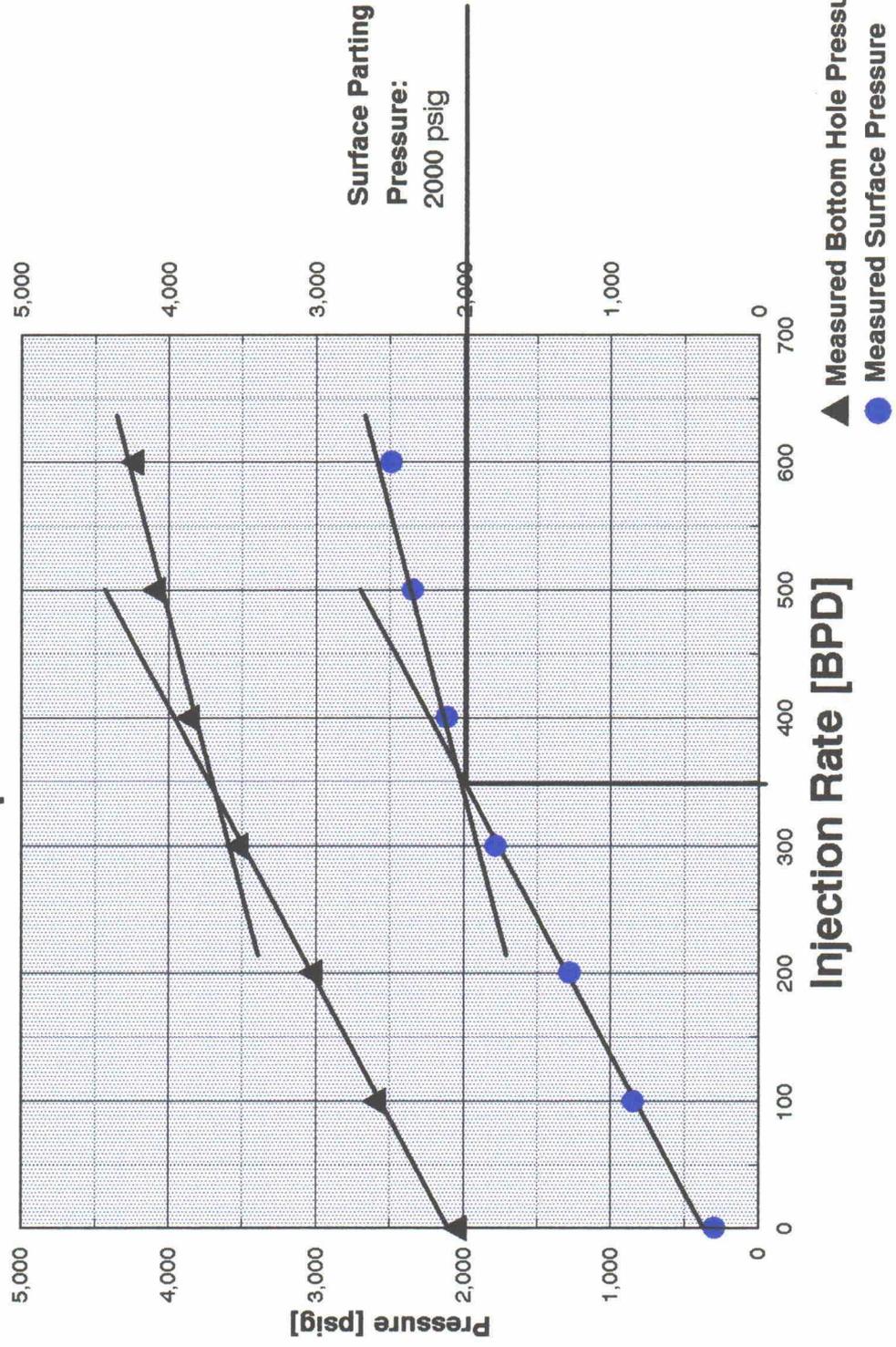
North Hobbs Unit 32-112 Step Rate Test



▲ Measured Bottom Hole Pressure
● Measured Surface Pressure

Surface Parting
Pressure:
1840 psig

North Hobbs Unit 36-411 Step Rate Test





STATE OF NEW MEXICO OIL CONSERVATION DIVISION
ENERGY AND MINERALS DEPARTMENT
 OIL CONSERVATION DIVISION SEP 24 10 07
 HOBBS DISTRICT OFFICE

September 20, 1991

BRUCE KING
GOVERNOR

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88240
(505) 393-6161

OIL CONSERVATION DIVISION
 P.O. BOX 2088
 SANTA FE, NEW MEXICO 87504-2088

RE: APPLICATION FOR PRESSURE LIMIT INCREASE FOR DISPOSAL & INJECTION WELLS

Gentlemen:

I have examined the step rate test for the:

Shell Western E & P Inc.	North Hobbs Unit Sec 30	141-M	30-18-38
Operator	Lease & Well No.	Unit	S-T-R

and my recommendations are as follows:

OK

ALL SHOULD BE

50 PSI BELOW
FRAC PRES

Very truly yours

Jerry Sexton
Supervisor, District I

/bp



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
 OIL CONSERVATION DIVISION
 HOBBS DISTRICT OFFICE

September 20, 1991

BRUCE KING
 GOVERNOR

POST OFFICE BOX 1980
 HOBBS, NEW MEXICO 88240
 (505) 393-6161

OIL CONSERVATION DIVISION
 P.O. BOX 2088
 SANTA FE, NEW MEXICO 87504-2088

RE: APPLICATION FOR PRESSURE LIMIT INCREASE FOR DISPOSAL & INJECTION WELLS

Gentlemen:

I have examined the step rate test for the:

Shell WEstern E & P Inc.	North Hobbs Unit Sec 29	342-0	29-18-38
Operator	Lease & Well No.	Unit	S-T-R

and my recommendations are as follows:

OK

Very truly yours

JS
 Jerry Sexton
 Supervisor, District I

/bp



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
 OIL CONSERVATION DIVISION
 HOBBS DISTRICT OFFICE

September 20, 1991

BRUCE KING
 GOVERNOR

POST OFFICE BOX 1980
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 (505) 393-6161

OIL CONSERVATION DIVISION
 P.O. BOX 2088
 SANTA FE, NEW MEXICO 87504-2088

RE: APPLICATION FOR PRESSURE LIMIT INCREASE FOR DISPOSAL & INJECTION WELLS

Gentlemen:

I have examined the step rate test for the:

Shell WEstern E & P Inc.	North Hobbs Unit Sec 23	341-0	23-18-37
Operator	Lease & Well No.	Unit	S-T-R

and my recommendations are as follows:

OK

Very truly yours

Jerry Sexton
 Supervisor, District I

/bp



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September 20, 1991

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OIL CONSERVATION DIVISION
 P.O. BOX 2088
 SANTA FE, NEW MEXICO 87504-2088

RE: APPLICATION FOR PRESSURE LIMIT INCREASE FOR DISPOSAL & INJECTION WELLS

Gentlemen:

I have examined the step rate test for the:

Shell WEstern E & P Inc.	North Hobbs Unit Sec 23	211-C	23-18-37
Operator	Lease & Well No.	Unit	S-T-R

and my recommendations are as follows:

OK

Very truly yours

Jerry Sexton
 Supervisor, District I

/bp



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September 20, 1991

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OIL CONSERVATION DIVISION
 P.O. BOX 2088
 SANTA FE, NEW MEXICO 87504-2088

RE: APPLICATION FOR PRESSURE LIMIT INCREASE FOR DISPOSAL & INJECTION WELLS

Gentlemen:

I have examined the step rate test for the:

Shell Western E & P Inc.	North Hobbs Unit Sec 36	411-A	36-18-37
Operator	Lease & Well No.	Unit	S-T-R

and my recommendations are as follows:

OK

Very truly yours

Jerry Sexton
 Supervisor, District I

/bp



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
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HOBBS DISTRICT OFFICE

September 20, 1991

BRUCE KING
GOVERNOR

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HOBBS, NEW MEXICO 88240
(505) 393-6161

OIL CONSERVATION DIVISION
P.O. BOX 2088
SANTA FE, NEW MEXICO 87504-2088

RE: APPLICATION FOR PRESSURE LIMIT INCREASE FOR DISPOSAL & INJECTION WELLS

Gentlemen:

I have examined the step rate test for the:

Shell Western E & P Inc.	North Hobbs Unit Sec 36	321-G	36-18-37
Operator	Lease & Well No.	Unit	S-T-R

and my recommendations are as follows:

Very truly yours

Jerry Sexton
Supervisor, District I

/bp



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ENERGY AND MINERALS DEPARTMENT
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 HOBBS DISTRICT OFFICE

September 20, 1991

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OIL CONSERVATION DIVISION
 P.O. BOX 2088
 SANTA FE, NEW MEXICO 87504-2088

RE: APPLICATION FOR PRESSURE LIMIT INCREASE FOR DISPOSAL & INJECTION WELLS

Gentlemen:

I have examined the step rate test for the:

Shell WEstern E & P Inc.	North Hobbs Unit Sec 32	112-	32-18-38
Operator	Lease & Well No.	Unit	S-T-R

and my recommendations are as follows:

OK

Very truly yours

Jerry Sexton
 Supervisor, District I

/bp