



STATE OF NEW MEXICO
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

Date: 12/4/92

Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504-2088

RE: Proposed MC _____ Proposed DHC _____
Proposed NSL _____ Proposed SWD _____
Proposed WFX _____ Proposed PMX _____
Proposed NSP _____ Proposed DD _____

INJECTION WELL PRESSURE INCREASE

Gentlemen:

I have examined the application received on 12/3/92

for the ROBERT L. BAYLESS SFPRR #41
OPERATOR LEASE & WELL NO.

P-20-16N-OGW and my recommendations are as follows:
UL-S-T-R

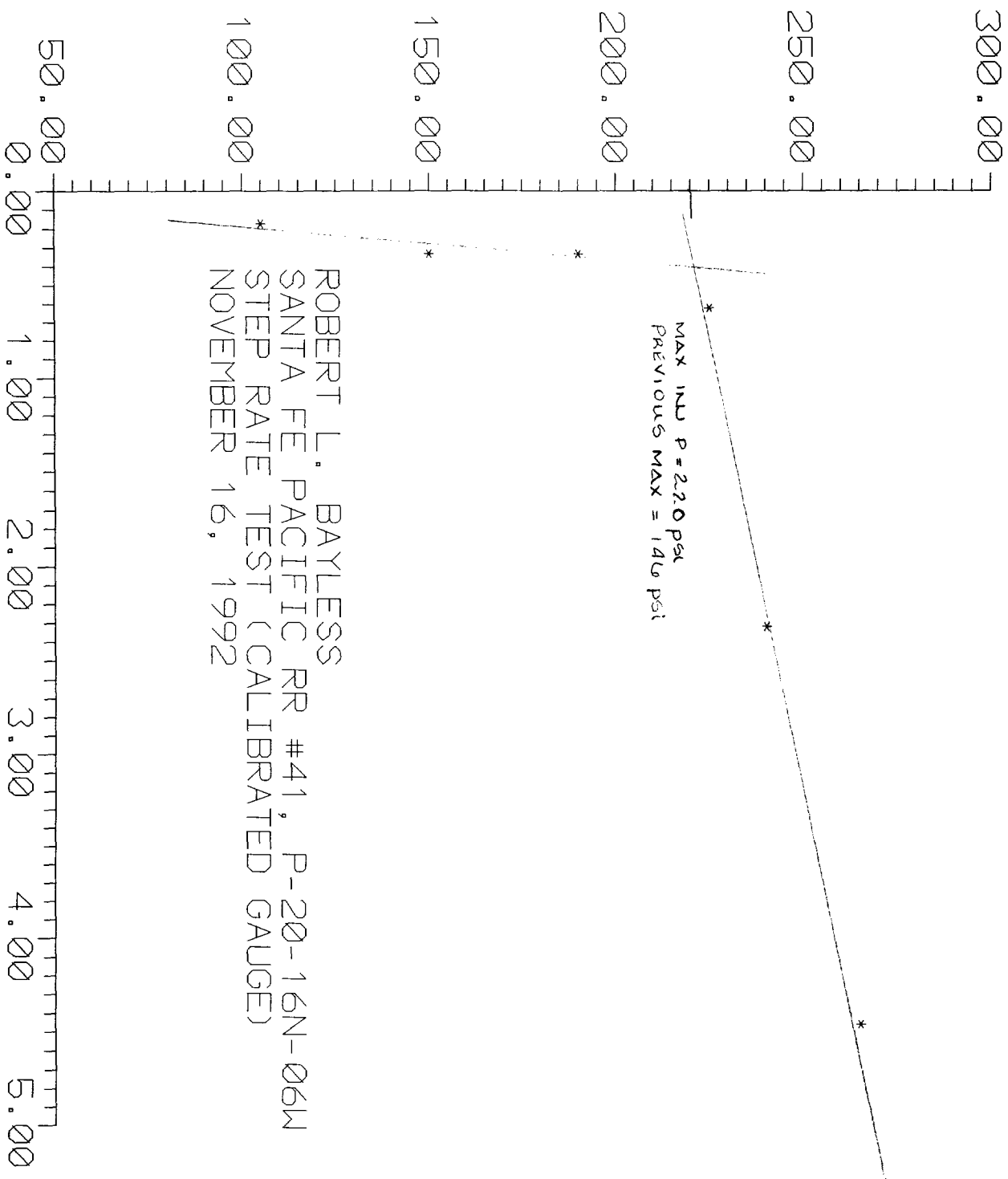
BASED ON A STEP RATE TEST ON NOVEMBER 16, 1992

I PROPOSE AN ALLOWABLE MAXIMUM INJECTION

PRESSURE OF 220 psi.

*NOTE: THE RESULTS ON THE GRAPH HAVE BEEN ADJUSTED
TO REFLECT RESULTS FROM A CALIBRATED GAUGE.
Yours truly,

Shirley J. Jarchert



ROBERT L. BAYLESS
SANTA FE PACIFIC RR #41, P-20-16N-06W
STEP RATE TEST (CALIBRATED GAUGE)
NOVEMBER 16, 1992

- SANTA FE PACIFIC RR #51, N-21-16N-06W

<u>TIME</u>	<u>FLOW (gal/min)</u>	<u>PRESSURE (psi)</u>
9:55	0.31	85
10:10	0.80	115
10:25	0.83	130
10:40	0.97	144
10:55	1.45	170
11:10	3.51	220
11:25	5.45	240

- SANTA FE PACIFIC RR #41, P-20-16N-06W

<u>TIME</u>	<u>FLOW (gal/min)</u>	<u>PRESSURE (psi)</u>	<u>CALIBRATED</u>
12:45	0.17	115	105
1:00	0.33	160	150
1:15	0.33	200	190
1:30	0.62	235	225
1:45	2.31	255	240
2:00	4.45	280	265

- SANTA FE PACIFIC RR #52, K-21-16N-06W

<u>TIME</u>	<u>FLOW (gal/min)</u>	<u>PRESSURE (psi)</u>
3:53	0.3125	235
4:08	0.52	300
4:23	0.775	350
4:38	0.833	410
4:53	1.25	540
5:08	1.84	680



STATE OF NEW MEXICO
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

Date: 12/4/92

Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504-2088

RE: Proposed MC _____ Proposed DHC _____
Proposed NSL _____ Proposed SWD _____
Proposed WFX _____ Proposed PMX _____
Proposed NSP _____ Proposed DD _____

INJECTION WELL PRESSURE INCREASE

Gentlemen:

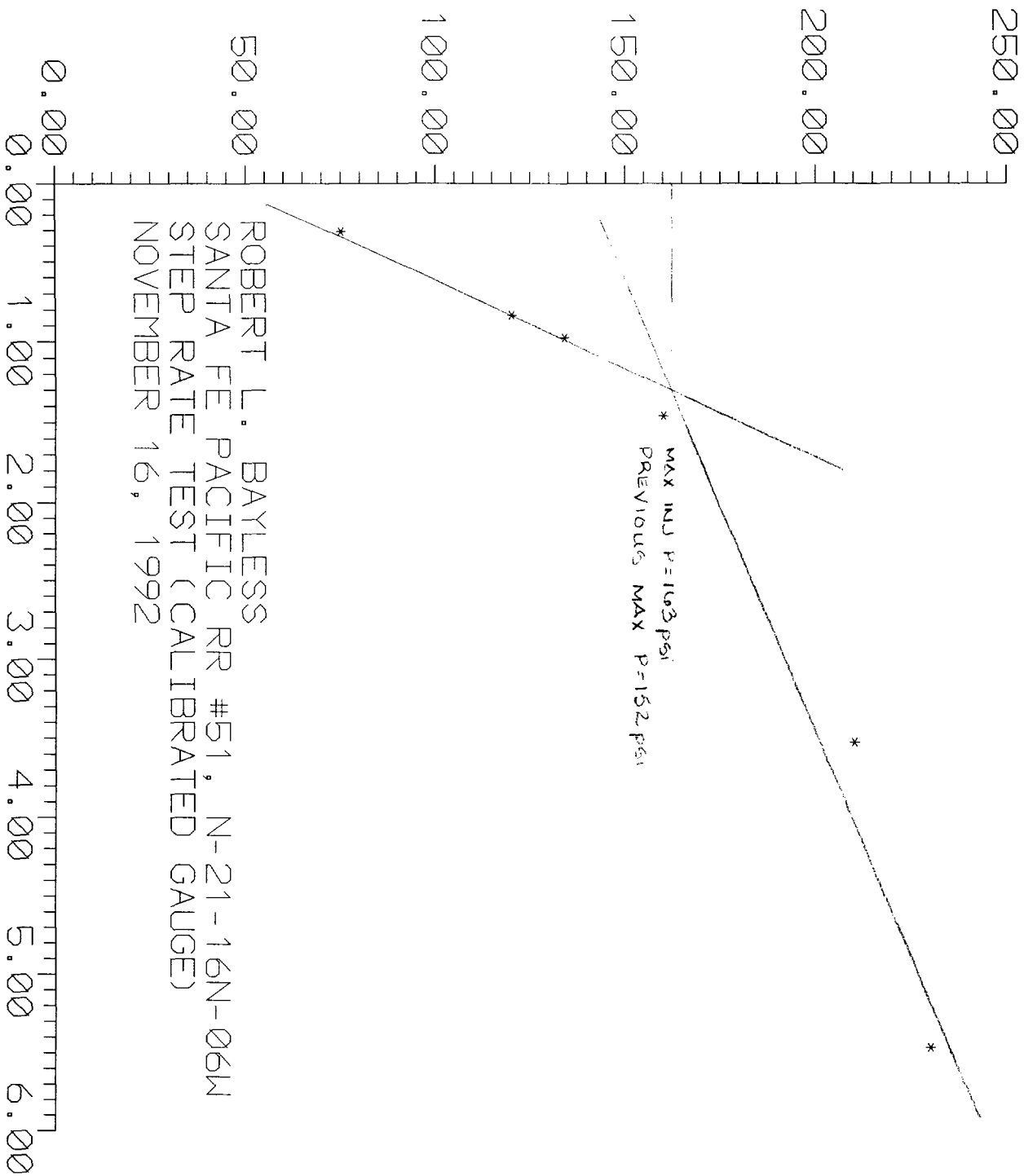
I have examined the application received on 12/3/92
for the ROBERT L. BAYLESS SFPRR # 51
OPERATOR LEASE & WELL NO.

N-21-16N-06W and my recommendations are as follows:
UL-S-T-R

BASED ON A STEP RATE TEST ON NOVEMBER 16, 1992
I PROPOSE AN ALLOWABLE MAXIMUM INJECTION
PRESSURE OF 1163 psi

* NOTE: THE RESULTS ON THE GRAPH HAVE BEEN ADJUSTED
TO REFLECT RESULTS FROM A CALIBRATED GAUGE.
Yours truly,

Diana Jankins



ROBERT L. BAYLESS
SANTA FE PACIFIC RR #51, N-21-16N-06W
STEP RATE TEST (CALIBRATED GAUGE)
NOVEMBER 16, 1992

- SANTA FE PACIFIC RR #51, N-21-16N-06W

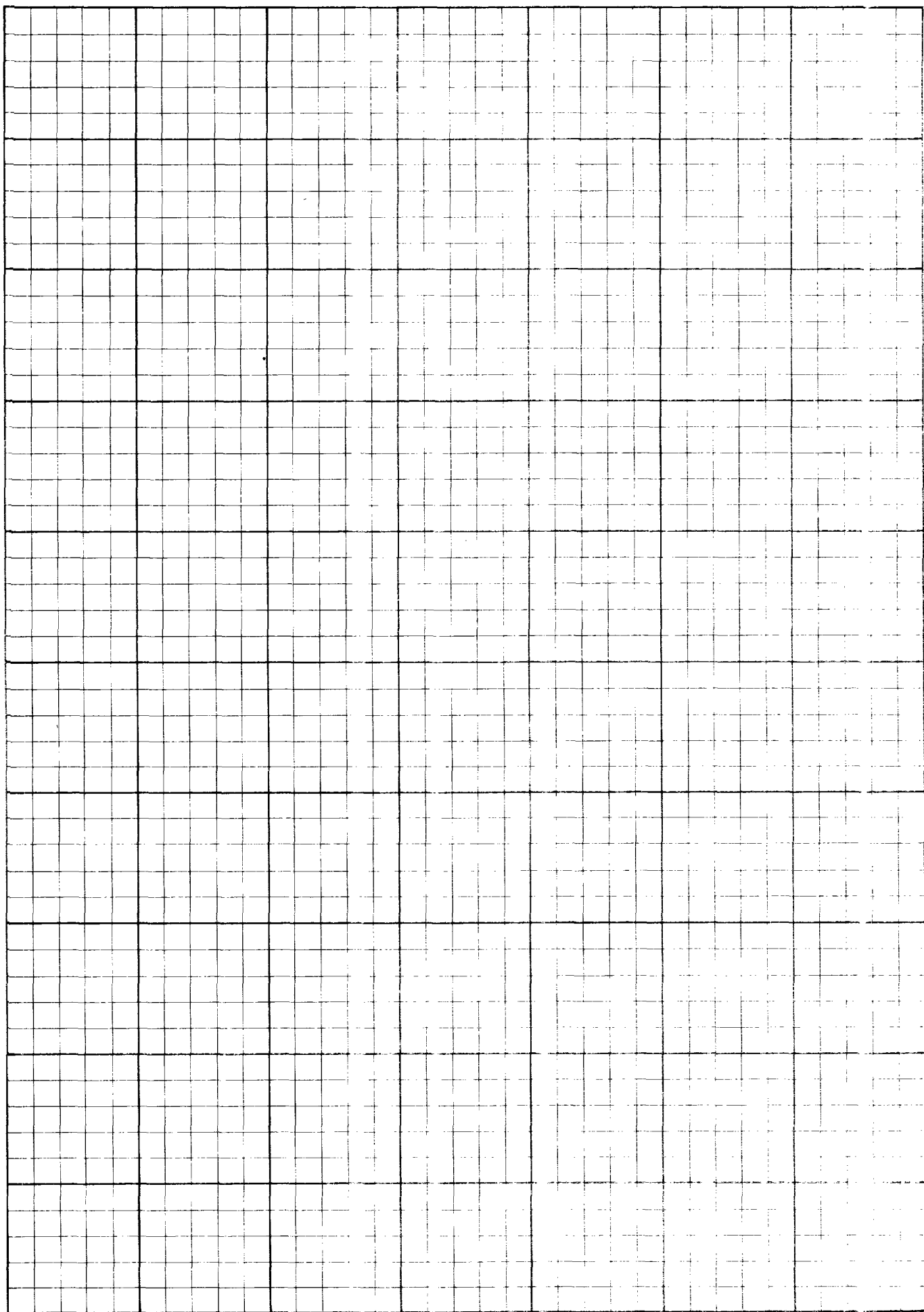
<u>TIME</u>	<u>FLOW (gal/min)</u>	<u>PRESSURE (psi)</u>	<u>CALIBRATED</u>
9:55	0.31	85	75
10:10	0.80	115	105
10:25	0.83	130	120
10:40	0.97	144	134
10:55	1.45	170	160
11:10	3.51	220	210
11:25	5.45	240	230

- SANTA FE PACIFIC RR #41, P-20-16N-06W

<u>TIME</u>	<u>FLOW (gal/min)</u>	<u>PRESSURE (psi)</u>
12:45	0.17	115
1:00	0.33	160
1:15	0.33	200
1:30	0.62	235
1:45	2.31	255
2:00	4.45	280

- SANTA FE PACIFIC RR #52, K-21-16N-06W

<u>TIME</u>	<u>FLOW (gal/min)</u>	<u>PRESSURE (psi)</u>
3:53	0.3125	235
4:08	0.52	300
4:23	0.775	350
4:38	0.833	410
4:53	1.25	540
5:08	1.84	680





STATE OF NEW MEXICO
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

OIL CONSERVATION DIVISION
RECEIVED

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

Date: 12/4/92

Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504-2088

RE: Proposed MC _____
Proposed NSL _____
Proposed WFX _____
Proposed NSP _____

Proposed DHC _____
Proposed SWD _____
Proposed PMX _____
Proposed DD _____

INJECTION WELL PRESSURE INCREASE

Gentlemen:

I have examined the application received on 12/3/92

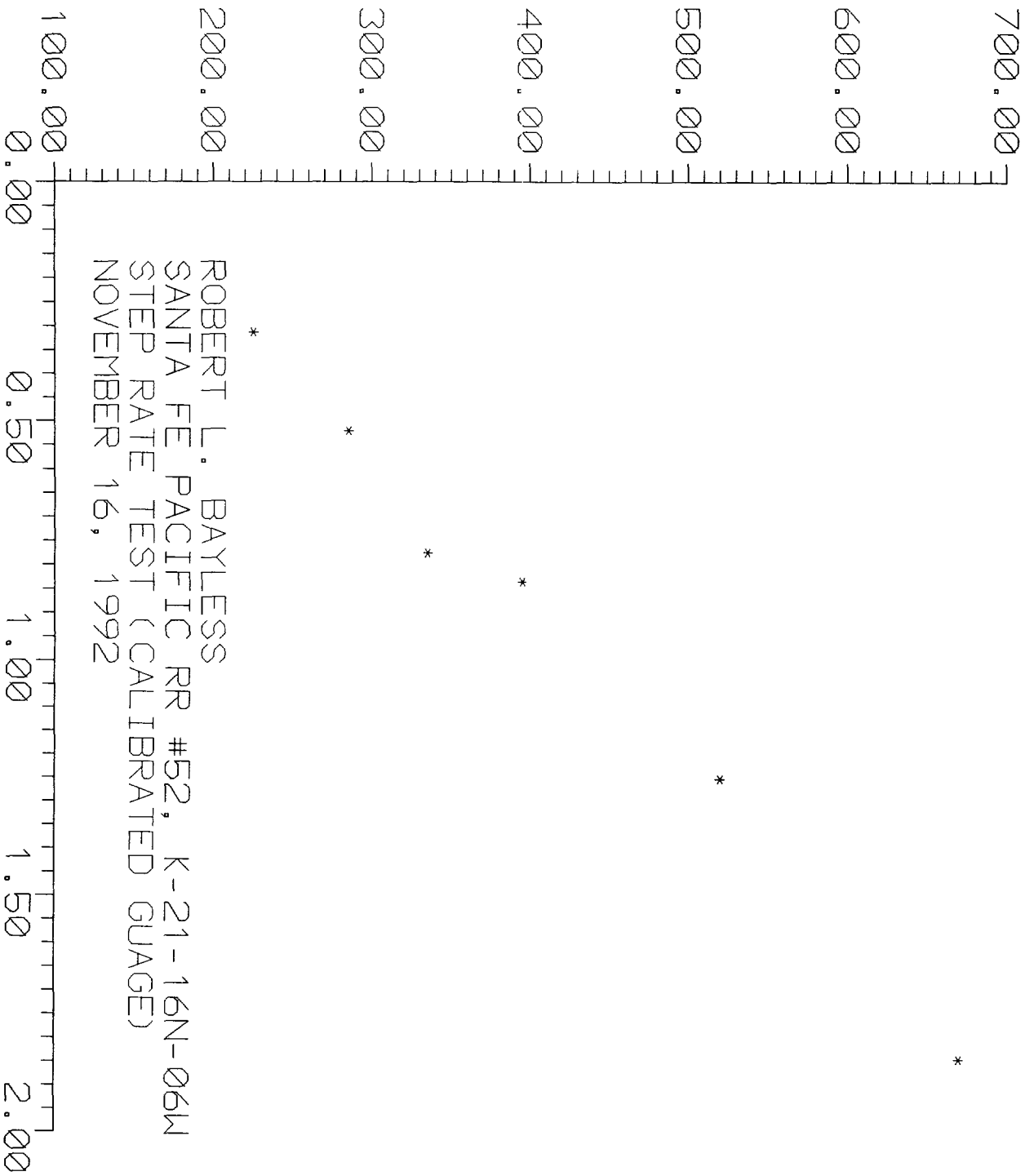
for the ROBERT L. BAYLESS SFPRR # 52
OPERATOR LEASE & WELL NO.

K-21-16N-06W and my recommendations are as follows:
UL-S-T-R

BASED ON A STEP RATE TEST ON NOVEMBER 16, 1992
I PROPOSE AN ALLOWABLE MAXIMUM INJECTION PRESSURE
OF 500 PSI IN AGREEMENT WITH WHAT BAYLESS HAS
PROPOSED.

*NOTE: THE RESULTS ON THE GRAPH HAVE BEEN ADJUSTED
TO REFLECT RESULTS FROM A CALIBRATED GAUGE.
Yours truly,

Diana Darchewitz



- SANTA FE PACIFIC RR #51, N-21-16N-06W

<u>TIME</u>	<u>FLOW (gal/min)</u>	<u>PRESSURE (psi)</u>
9:55	0.31	85
10:10	0.80	115
10:25	0.83	130
10:40	0.97	144
10:55	1.45	170
11:10	3.51	220
11:25	5.45	240

- SANTA FE PACIFIC RR #41, P-20-16N-06W

<u>TIME</u>	<u>FLOW (gal/min)</u>	<u>PRESSURE (psi)</u>
12:45	0.17	115
1:00	0.33	160
1:15	0.33	200
1:30	0.62	235
1:45	2.31	255
2:00	4.45	280

- SANTA FE PACIFIC RR #52, K-21-16N-06W

<u>TIME</u>	<u>FLOW (gal/min)</u>	<u>PRESSURE (psi)</u>	<u>CALIBRATED</u>
3:53	0.3125	235	225
4:08	0.52	300	285
4:23	0.775	350	335
4:38	0.833	410	395
4:53	1.25	540	520
5:08	1.84	680	670

ROBERT L. BAYLESS

P. O. BOX 168
FARMINGTON, NM 87499

FAX NO
(505) 326-6911

OFFICE NO
(505) 326-2659

December 1, 1992

Oil Conservation Division
1000 Rio Brazos Rd
Aztec, NM 87410

Attn: Diana Fairhurst

Re: Miguel Creek Field
Step Rate Tests
SFPRR Nos. 41, 51, and 52

Dear Diana:

Attached is my record of our step rate test results for the captioned wells. Also attached are my plots of the data. The best fit lines through the data are as generated by my plotting package.

I would not attempt to debate the results of the tests on SFPRR Nos. 41 and 51. They are clear cut. However, I was hoping for higher injection rates for well No. 41. Maximum proposed rates and pressures for these wells are listed below:

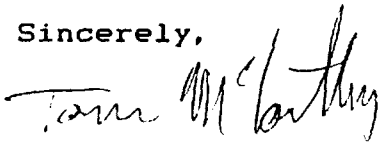
<u>Well</u>	<u>Max. Press., PSI</u>	<u>Max BWIPD</u>
41	234	21
51	170	48

I would propose an allowable maximum injection pressure of 500 PSI for well No. 52. This would allow for a maximum injection rate of about 40 BWPD. Since we are injecting fresh water, and since this is an edge well with thinner reservoir, I think this is reasonable given the data as plotted.

We have no record of fracture stimulations being done on any of the subject wells. This was a question Frank raised during our field work.

I will appreciate discussing this with you soon.

Sincerely,


Tom McCarthy
Petroleum Engineer

RECEIVED
DEC - 3 1992
OIL CON. DIV.
FMT 2

RECEIVED

DEC - 3 1992

CON. DIV.

DIST. 3/ December 1, 1992

Conversion of SFPRR No. 41, 51 and 52 to Injection
Mechanical Integrity and Step Rate Tests

1/16/92 Rig up injection pump and water truck on well No. 51. Tested pump; made 5.45 GPM. Pumped the following 15 minute steps:

Step	Sec. Per 5 Gal	Bypassed GPM	Down Hole GPM	Total GPM	Begin PSI	End PSI
0					0	0
1	64	4.69	.31	5.00	80	85
2	65	4.62	.83	5.45	115	120
3	67	4.48	.97	5.45	139	144
4	75	4.00	1.45	5.45		170
5	155	1.94	3.51	5.45	200	220

Run Mechanical Integrity Test. Pressure test annulus to 300 psi for 30 minutes, held OK and passed test.

The Step Rate Test indicates a parting pressure of about 170 psi which was reached at an injection rate of 1.4 GPM (48 BWIPD).

1/16/92 Rig up injection pump and water truck on well No. 41. Tested pump; made 5.17 GPM. Pumped the following 15 minute steps:

Step	Sec. Per 5 Gal	Bypassed GPM	Down Hole GPM	Total GPM	Begin PSI	End PSI
0						70
1	60	5.00	.17	5.17		115
2	62	4.84	.33	5.17	180	197
3	66	4.55	.62	5.17	220	235
4	105	2.86	2.31	5.17	248	255
5	420	.71	4.46	5.17	270	280

Run Mechanical Integrity Test. Pressure test annulus to 300 psi for 30 minutes, held OK and passed test.

The Step Rate Test indicates a parting pressure of 234 psi which was reached at an injection rate of .6 GPM (21 BWIPD).

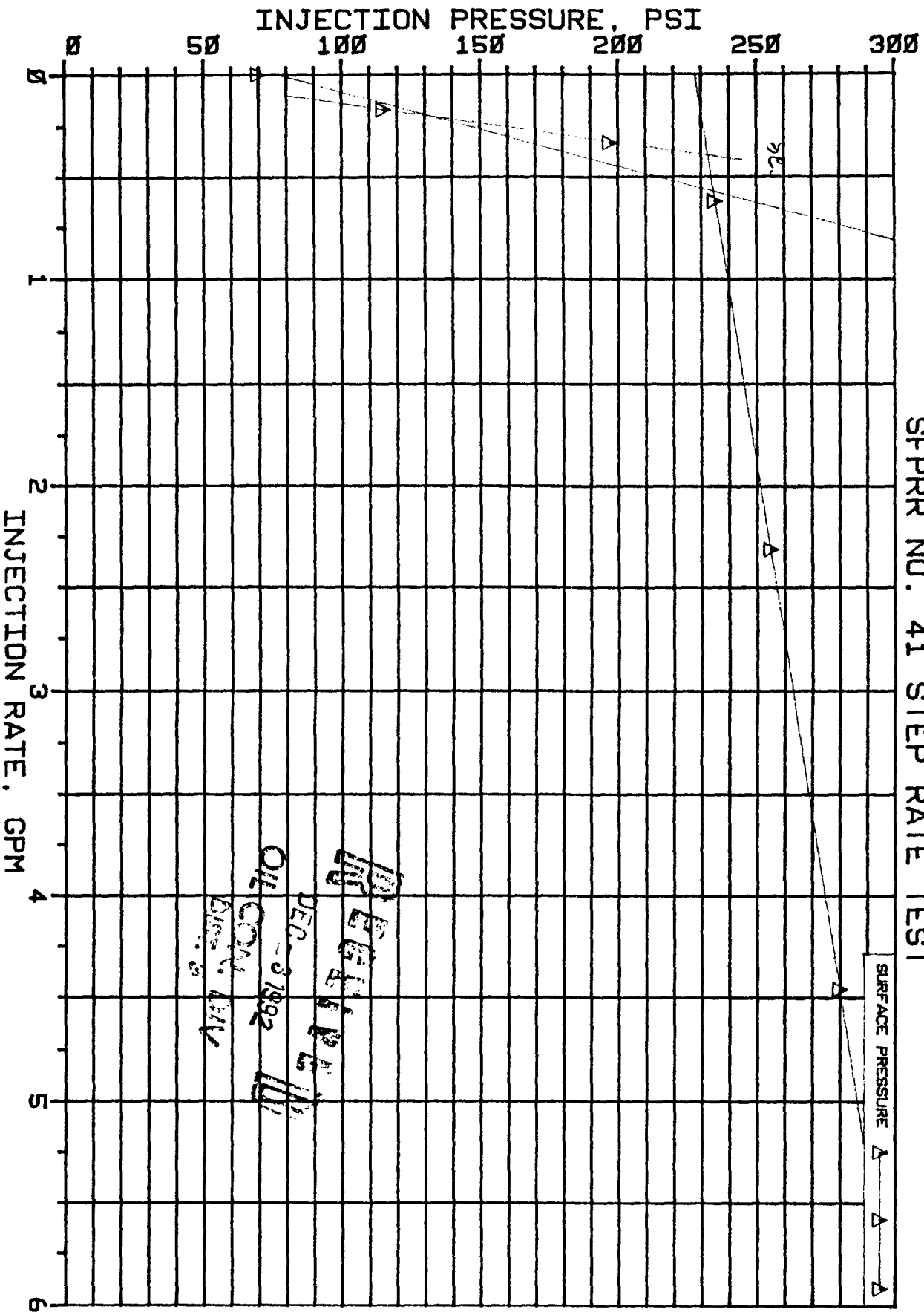
/16/92 Rig up injection pump and water truck on well No. 52. Run Mechanical Integrity Test. Pressure test annulus to 300 psi for 30 minutes, held OK and passed test. Tested injection pump; made 5 GPM. Pumped the following 15 minute steps:

<u>Step</u>	<u>Sec. Per</u> <u>5 Gal</u>	<u>Bypassed</u> <u>GPM</u>	<u>Down Hole</u> <u>GPM</u>	<u>Total</u> <u>GPM</u>	<u>Begin</u> <u>PSI</u>	<u>End</u> <u>PSI</u>
0						90
1	64	4.69	.31	5.00	220	235
2	67	4.48	.52	5.00	290	302
3	71	4.23	.77	5.00	350	350
4	72	4.17	.83	5.00	400	408
5	80	3.75	1.25	5.00	515	540
6	95	3.16	1.84	5.00	670	680

The Step Rate Test does not clearly indicate a parting pressure, however, the last rate recorded deviates considerably from the best fit line through the data. it may indicate a parting pressure of about 660 psi.

RECEIVED
DEC - 3 1992
OIL CON. DIV.
DIST. 3

SEPRR NO. 41 STEP RATE TEST

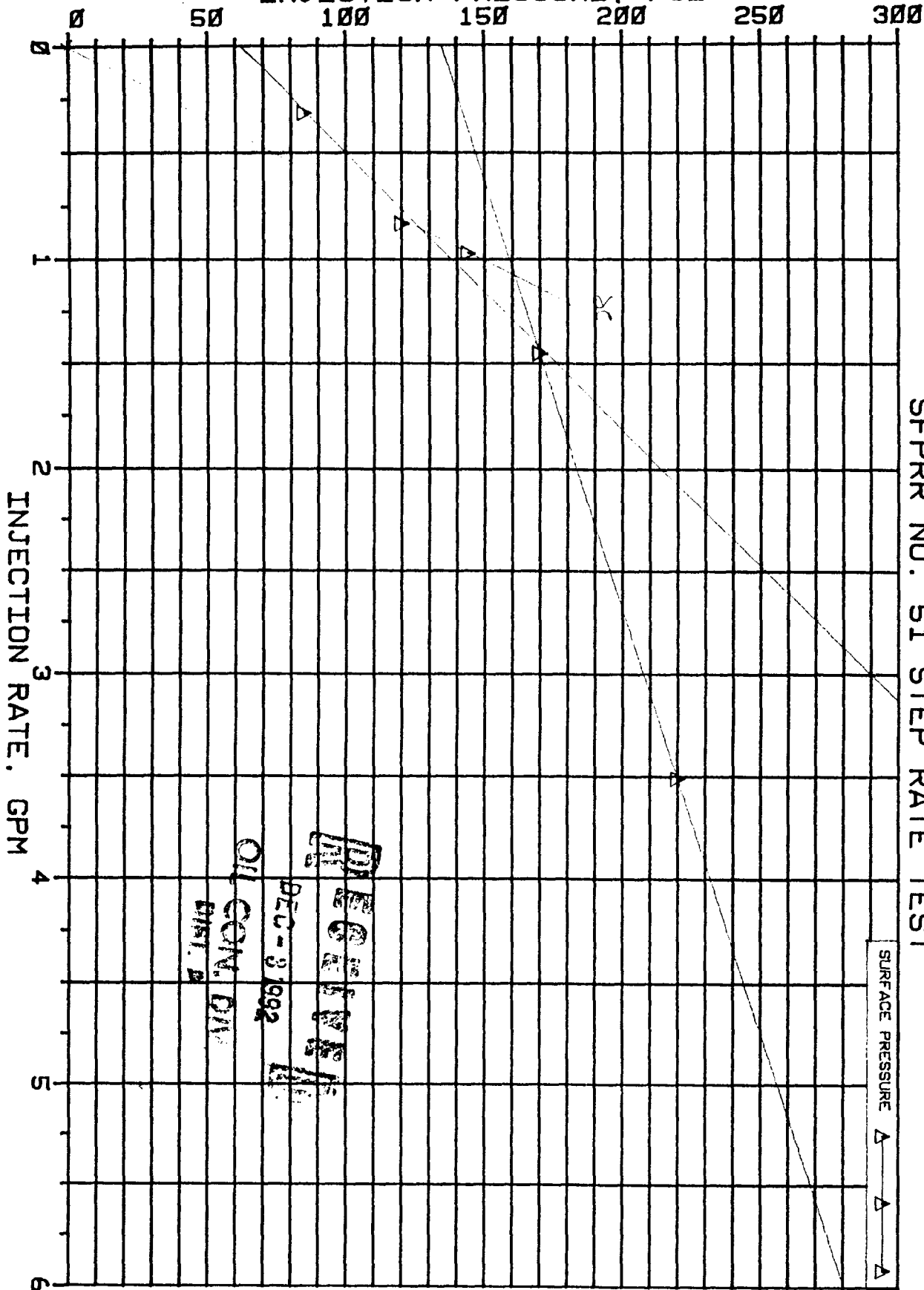


SFPRR NO. 51 STEP RATE TEST

INJECTION PRESSURE, PSI

SURFACE PRESSURE

Δ Δ Δ



DECEMBER 11

DEC-31-1992

OIL CON. DIV.

UNIT 2

SURFACE PRESSURE Δ Δ Δ

