SWD-437

PDEV0020900437

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

November 30, 1993

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

Yates Petroleum Corporation
105 South Fourth Street
Artesia, NM 88210

Attention: Darrick Stallings

***RE: Injection Pressure Increase, Roy "AET" Well No. 3, Section 7, Township 19 South, Range 25 East, Eddy County, New Mexico***

Dear Mr. Stallings:

Reference is made to your request dated November 3, 1993 to increase the surface injection pressure on the above referenced well. This request is based on a step rate tests conducted on this well on October 21, 1993. The results of the test have been reviewed by my staff and we feel an increase in injection pressure on this well is justified at this time.

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

| **Well and Location** | **Maximum Injection Surface Pressure** |
|---|---|
| Roy "AET" Well No. 3<br>Unit P, Section 7, Township 19 South, Range 25 East | 2600 psig |
| This well located in Eddy County, New Mexico. | |

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/BES/amg

cc: Oil Conservation Division - Artesia
File: PSI-X ~~4th~~ 2nd Quarter
SWD-437

NO WAITING PERIOD

COMPANY: **YATES PETROLEUM CORPORATION**

ADDRESS: **105 South Fourth Street**

CITY, STATE, ZIP: **Artesia, New Mexico 88210**

ATTENTION: **Mr. Darrick Stallings**

*RE: Injection Pressure Increase*
*Roy "AET" Well No.3*
*Section 7-T19S-R25E*
*Eddy County, New Mexico*

Dear Sir:

Reference is made to your request dated **November 3, 1993,** to increase the surface injection pressure on **the above referenced well.** This request is based on a step rate test conducted on this well **October 21, 1993.** 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.

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

| Well & Location | Maximum Injection Surface Pressure |
|---|---|
| **Roy "AET" Well No.3**<br>**Unit Letter "P", Section 7-T19S-R25E**<br>**Eddy County, New Mexico** | **2600 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/BES/

xc: OCD - **Artesia**
FILES: **PSI-X 4th Qtr.93; SWD-437**

N/R PSI-X



MARTIN YATES, III
1912 - 1985
FRANK W. YATES
1936 - 1986

YATES PETROLEUM CORPORATION

105 SOUTH FOURTH STREET
ARTESIA, NEW MEXICO 88210
TELEPHONE (505) 748-1471

S. P. YATES
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TREASURER

November 3, 1993

Mr. William J. LeMay, Director
New Mexico Energy, Minerals, and Natural Resources Department
Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87504

Re: Request for Injection Pressure Limit Increase
SWDW Roy "AET" #3, P - 7 - 19S - 25E

Dear Mr. LeMay:

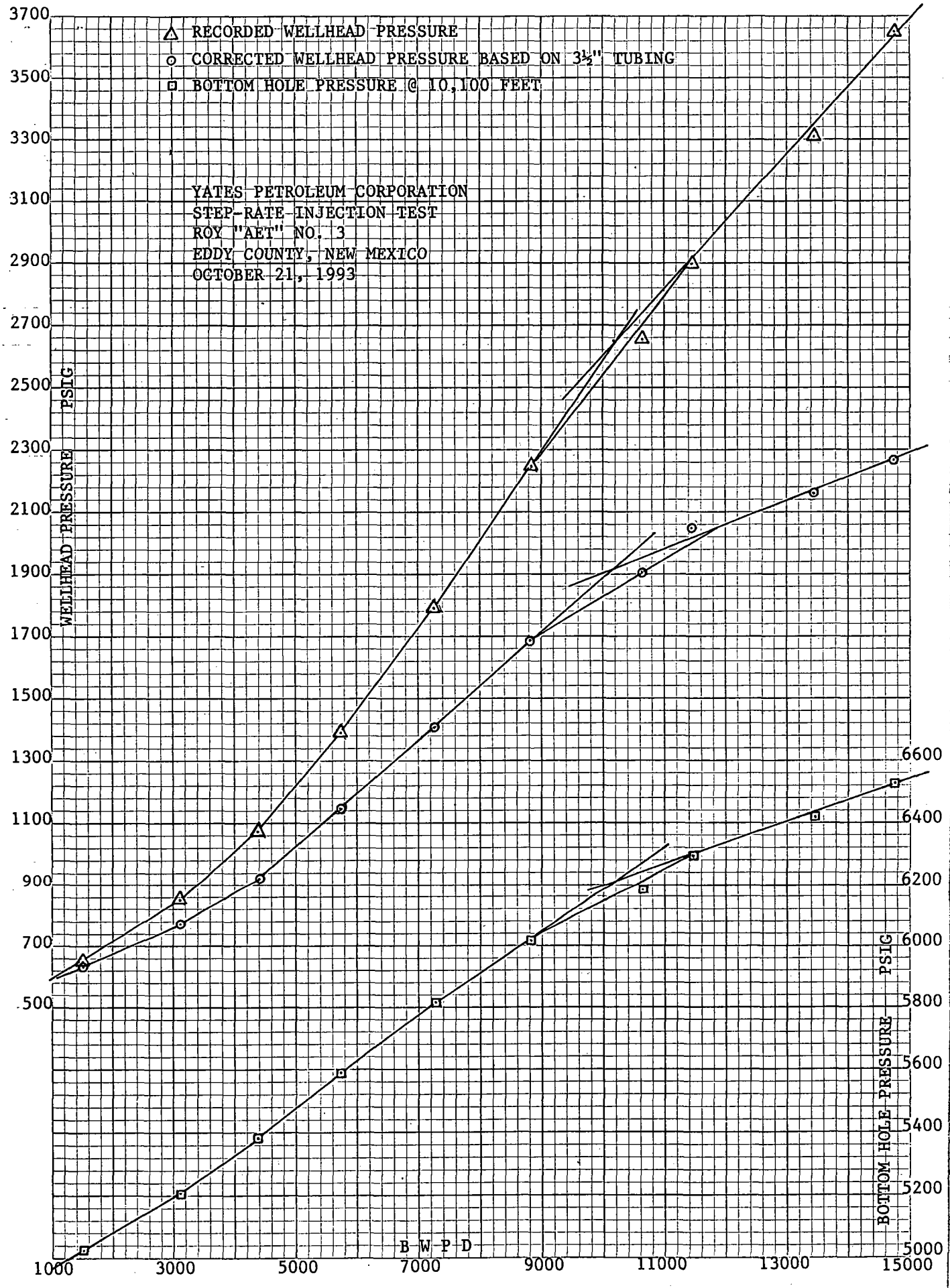
The Roy "AET" #3 is limited to a wellhead injection pressure of 1950 psi by Administrative Order No. SWD-437 dated August 16,1991. A step-rate test was conducted on October 21, 1993 on this well. The test was witnessed by Mr. Mike Stubblefield of the Artesia NMOCD office. The test was conducted by John West Engineering Company with assistance from Halliburton Energy Services.

The step-rate test indicates parting pressure was reached at surface injection pressure of 2650 psi. A copy of the test is attached. As provided for under NMOCD Rule 704-C, Yates Petroleum respectfully requests that the injection pressure limit for our SWDW Roy "AET" #3 be increased to ~~2650 psi.~~ 2600

Sincerely,

Darrick Stallings
Petroleum Engineer

xc: Mr. Mike Williams, Artesia NMOCD office


△ RECORDED WELLHEAD PRESSURE
○ CORRECTED WELLHEAD PRESSURE BASED ON 3½" TUBING
□ BOTTOM HOLE PRESSURE @ 10,100 FEET
YATES PETROLEUM CORPORATION
STEP-RATE INJECTION TEST
ROY "AET" NO. 3
EDDY COUNTY, NEW MEXICO
OCTOBER 21, 1993
WELLHEAD PRESSURE PSIG
BOTTOM HOLE PRESSURE PSIG
B W P D
3700
3500
3300
3100
2900
2700
2500
2300
2100
1900
1700
1500
1300
1100
900
700
500
6600
6400
6200
6000
5800
5600
5400
5200
5000
1000
3000
5000
7000
9000
11000
13000
15000

# JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

## STEP RATE INJECTION TEST

CLIENT: YATES PETROLEUM CORPORATION

DATE: OCTOBER 21, 1999

WELL NAME ROY "AET" NO. 3

WO#: 99-14-1999

EDDY COUNTY, NEW MEXICO

MID-PERFS. = 9766-11110

PACKER DEPTH = 9632

BHP GAUGE DPTH = 10100

| STEP NO. & REMARKS | TIME | (1) SURFACE TUBING PRESS (psig) | (2) CUMMULATIVE VOL. INJECTED (bbls) | (3) INJECTION RATE (bbls/day) | (4) FRICTION HEAD LOSS (psi) | (5) CORRECTED TUBING PRESS (psi) (1)-(4) | (6) INJECTION RATE (gpm) (3)/34.2857 | (7) MEASURED BHP (psi) |
|---|---|---|---|---|---|---|---|---|
| | 9:40 | 501.4 | | | | 501.4 | | 4883 |
| | 9:45 | 616.3 | 4.9 | 1411.2 | 17.867 | 598.4 | 41.16 | 4972 |
| | 9:50 | 631.7 | 10.2 | 1526.4 | 20.658 | 611.0 | 44.52 | 5002 |
| 1 | 9:55 | 650.8 | 15.9 | 1641.6 | 23.635 | 627.2 | 47.88 | 5023 |
| | | | | 1526.4 | | | | |
| | 10:00 | 802.9 | 26.4 | 3024.0 | 73.179 | 729.7 | 88.20 | 5130 |
| | 10:05 | 842.5 | 37.3 | 3139.2 | 78.420 | 764.1 | 91.56 | 5176 |
| 2 | 10:10 | 857.8 | 48.3 | 3168.0 | 79.756 | 778.0 | 92.40 | 5207 |
| | | | | 3110.4 | | | | |
| | 10:15 | 1022.7 | 63.3 | 4320.0 | 141.565 | 881.1 | 126.00 | 5310 |
| | 10:20 | 1043.2 | 78.7 | 4435.2 | 148.628 | 894.6 | 129.36 | 5353 |
| 3 | 10:25 | 1072.6 | 94.1 | 4435.2 | 148.628 | 924.0 | 129.36 | 5385 |
| | | | | 4396.8 | | | | |
| | 10:30 | 1292.9 | 114.5 | 5875.2 | 250.037 | 1042.9 | 171.36 | 5493 |
| | 10:35 | 1342.7 | 134.0 | 5616.0 | 230.013 | 1112.7 | 163.80 | 5548 |
| 4 | 10:40 | 1386.2 | 154.0 | 5760.0 | 241.042 | 1145.2 | 168.00 | 5589 |
| | | | | 5750.4 | | | | |
| | 10:45 | 1656.3 | 179.3 | 7286.4 | 372.358 | 1283.9 | 212.52 | 5706 |
| | 10:50 | 1738.2 | 204.2 | 7171.2 | 361.540 | 1376.7 | 209.16 | 5765 |
| 5 | 10:55 | 1791.9 | 229.9 | 7401.6 | 383.322 | 1408.6 | 215.88 | 5816 |
| | | | | 7286.4 | | | | |
| | 11:00 | 2090.3 | 259.7 | 8582.4 | 504.067 | 1586.2 | 250.32 | 5914 |
| | 11:05 | 2183.8 | 290.2 | 8784.0 | 526.190 | 1657.6 | 256.20 | 5968 |
| 6 | 11:10 | 2249.1 | 321.6 | 9043.2 | 555.274 | 1693.8 | 263.76 | 6015 |
| | | | | 8803.2 | | | | |
| | 11:15 | 2596.7 | 359.2 | 10828.8 | 774.971 | 1821.7 | 315.84 | 6104 |
| | 11:20 | 2643.0 | 395.0 | 10310.4 | 707.736 | 1935.3 | 300.72 | 6149 |
| 7 | 11:25 | 2657.1 | 432.1 | 10684.8 | 756.014 | 1901.1 | 311.64 | 6183 |
| | | | | 10608.0 | | | | |

| STEP NO | TIME | (1) PRESSURE (psig) | (2) CUMULATIVE (bbls) | (3) PRESSURE (lbs/sq.in) | (4) RATE (bpm) | (5) CORRECTED (psig) (1)-(3) | (6) PRESSURE (lbs/sq.in) | (7) MEASURED (bpm) |
|---|---|---|---|---|---|---|---|---|
| | 11:30 | 2862.7 | 472.4 | 11606.4 | 861.053 | 1961.6 | 338.52 | 6236 |
| | 11:35 | 2875.5 | 512.0 | 11404.8 | 852.951 | 2022.5 | 332.64 | 6265 |
| 8 | 11:40 | 2898.6 | 551.4 | 11347.2 | 844.998 | 2053.6 | 330.96 | 6289 |
| | | | | 11452.8 | | | | |
| | 11:45 | 3325.0 | 597.7 | 13334.4 | 1136.971 | 2186.0 | 388.92 | 6370 |
| | 11:50 | 3384.4 | 645.4 | 13737.6 | 1203.502 | 2180.9 | 400.68 | 6408 |
| 9 | 11:55 | 3307.0 | 691.8 | 13363.2 | 1143.526 | 2163.5 | 389.76 | 6425 |
| | | | | 13478.4 | | | | |
| | 12:00 | 3641.0 | 742.8 | 14666.0 | 1362.049 | 2279.0 | 428.40 | 6475 |
| | 12:05 | 3695.1 | 794.8 | 14803.2 | 1381.878 | 2313.2 | 431.76 | 6504 |
| 10 | 12:10 | 3653.9 | 845.8 | 14860.8 | 1391.841 | 2262.1 | 433.44 | 6523 |
| | | | | 14784.0 | | | | |
| FALLOFF | 12:11 | 1845.2 | | | | 1845.2 | | 6340 |
| | 12:12 | 1781.2 | | | | 1781.2 | | 6259 |
| | 12:13 | 1730.0 | | | | 1730.0 | | 6189 |
| | 12:14 | 1668.6 | | | | 1668.6 | | 6133 |
| | 12:15 | 1616.2 | | | | 1616.2 | | 6079 |
| | 12:20 | 1425.9 | | | | 1425.9 | | 5885 |