



NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

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

CF 4852 R-4442

B

April 15, 1997

Texaco Exploration & Production, Inc.
P.O. Box 730
Hobbs, New Mexico 88241-0730

PMX 43 PDEV0020700043
74 PDEV0020700074
111 PDEV0020700111
120 PDEV0020700120
173 PDEV0020700173

Attn: Mr. Siamak Safargar

**RE: Injection Pressure Increase,
Vacuum Grayburg San Andres Waterflood Unit,
Lea County, New Mexico**

Dear Mr. Safargar:

Reference is made to your request dated February 17, 1997 to increase the surface injection pressure on 14 wells in the above referenced project. This request is based on step rate tests conducted on these wells between January 27 and February 14, 1997. The results of the tests have been reviewed by my staff and we feel an increase in injection pressure on several wells is justified at this time.

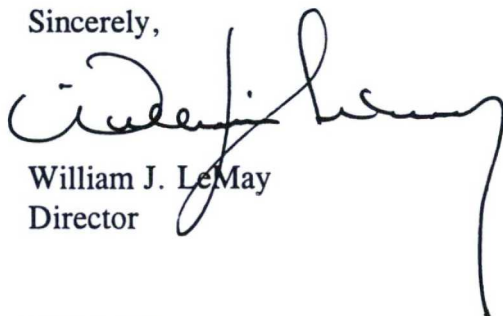
You are therefore authorized to increase the surface injection pressure on the following wells:

Well and Location	Maximum Surface Injection Pressure
Vacuum Grayburg San Andres Unit Well No.4 Unit Letter M, Section 1, Township 18 South, Range 34 East	1500 PSIG
Vacuum Grayburg San Andres Unit Well No.16 Unit Letter I, Section 2, Township 18 South, Range 34 East	1480 PSIG
Vacuum Grayburg San Andres Unit Well No.18 Unit Letter K, Section 1, Township 18 South, Range 34 East	1930 PSIG
Vacuum Grayburg San Andres Unit Well No.30 Unit Letter K, Section 2, Township 18 South, Range 34 East	1400 PSIG
Vacuum Grayburg San Andres Unit Well No.32 Unit Letter L, Section 1, Township 18 South, Range 34 East	1730 PSIG
Vacuum Grayburg San Andres Unit Well No.44 Unit Letter F, Section 2, Township 18 South, Range 34 East	2100 PSIG

Well and Location	Maximum Surface Injection Pressure
Vacuum Grayburg San Andres Unit Well No.59 Unit Letter E, Section 2, Township 18 South, Range 34 East	2370 PSIG
Vacuum Grayburg San Andres Unit Well No.60 Unit Letter D, Section 2, Township 18 South, Range 34 East	1720 PSIG
Vacuum Grayburg San Andres Unit Well No.62 Unit Letter C, Section 2, Township 18 South, Range 34 East	1745 PSIG
Vacuum Grayburg San Andres Unit Well No.63 Unit Letter B, Section 2, Township 18 South, Range 34 East	2115 PSIG
Vacuum Grayburg San Andres Unit Well No.65 Unit Letter M, Section 35, Township 17 South, Range 34 East	1935 PSIG
Vacuum Grayburg San Andres Unit Well No.67 Unit Letter L, Section 35, Township 17 South, Range 34 East	2050 PSIG
Vacuum Grayburg San Andres Unit Well No.146 Unit Letter B, Section 2, Township 18 South, Range 34 East	1800 PSIG
Vacuum Grayburg San Andres Unit Well No.147 Unit Letter H, Section 2, Township 18 South, Range 34 East	2030 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

cc: Oil Conservation Division - Hobbs
Files: 3rd Q97 PSI-X; Case File No.4852; PMXs-43, 74, 111, 120, 173
1/1th

LEASENAME	WELLNAME	WELLNUMBER	R_ORDER	OPERATOR	ORDERNUM	NUMBRWELLS
VACUUM ABO	VAU	13-2	R-3181-A	PHILLIPS PETROL	PMX-041	1
VACUUM-GRAYBURG SAN	VGSAU	14	R-4442	TEXACO, INC.	PMX-043-001	5
VACUUM GRAYBURG-SAN	VGSAU	35	R-4442	TEXACO, INC.	PMX-044-001	3
VACUUM GRAYBURG-SAN	VGSAU	59	R-4442	TEXACO INC.	PMX-074-001	2
VACUUM GRAYBURG SAN	EVU	003	R-5897	PHILLIPS PETROL	PMX-084-001	7
VACUUM GRAYBURG SAN	EVU	002	R-5897	PHILLIPS PETROL	PMX-090-001	2
VACUUM GRAYBURG SAN	VGSAU	11	R-4442	TEXACO INC.	PMX-097-001	3
VACUUM GRAYBURG-SAN	VGSAU	4	R-4442	TEXACO INC.	PMX-111-001	13
VACUUM GRAYBURG SAN	EVGSAU	003	R-5897	PHILLIPS PETROL	PMX-112	1
VACUUM GRAYBURG-SAN	VGSAU	18	R-4442	TEXACO INC.	PMX-120-001	5
VACUUM ABO	VAU	85	R-3181	PHILLIPS PETROL	PMX-144-001	4
VACUUM ABO	VAU	72	R-3181	PHILLIPS PETROL	PMX-162-001	3
VACUUM GRAYBURG SAN	VGSAU	148	R-4442	TEXACO EXPLOR	PMX-167-001	3
VACUUM GRAYBURG SAN	VGSAU	146	R-4442	TEXACO E & P IN	PMX-173-001	2

February 17, 1977

New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87501
Attention: Mr. David R. Catanach

Re: Request for Increase in Surface Injection Pressure Limits
Texaco Exploration and Production Inc.
Vacuum Grayberg San Andres Unit
T-17/18-S, R-34-E, Lea County, New Mexico



Dear Mr. Catanach:

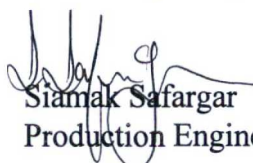
Texaco requests that the surface injection pressure limit be increased for the following well:

<u>PMX</u>	<u>Well No.</u>	<u>Observed Surface Parting Pressure</u>	<u>Requested Permitted Injection Pressure</u>
	Vacuum Grayberg SA Unit No. 4	1547 psig	1500 psig <i>AA-1-18-34</i>
	Vacuum Grayberg SA Unit No. 16	1530 psig	1480 psig <i>I-2-18-34</i>
<i>120</i>	Vacuum Grayberg SA Unit No. 18	1980 psig	1930 psig <i>K-1-18-34</i>
	Vacuum Grayberg SA Unit No. 30	1450 psig	1400 psig <i>K-2-18-34</i>
	Vacuum Grayberg SA Unit No. 32	1783 psig	1730 psig <i>L-1-18-34</i>
<i>43</i>	Vacuum Grayberg SA Unit No. 44	2148 psig	2100 psig <i>F-2-18-34</i>
<i>74</i>	Vacuum Grayberg SA Unit No. 59	2420 psig	2370 psig <i>E-2-18-34</i>
<i>74</i>	Vacuum Grayberg SA Unit No. 60	1769 psig	1720 psig <i>D-2-18-34</i>
<i>120</i>	Vacuum Grayberg SA Unit No. 62	1796 psig	1750 psig <i>-1745C-2-18-34</i>
<i>120</i>	Vacuum Grayberg SA Unit No. 63	2166 psig	2115 psig <i>8-2-18-34</i>
<i>120</i>	Vacuum Grayberg SA Unit No. 65	1984 psig	1935 psig <i>M-35-17-34</i>
<i>120</i>	Vacuum Grayberg SA Unit No. 67	2101 psig	2050 psig <i>L-35-17-34</i>
<i>173</i>	Vacuum Grayberg SA Unit No. 146	1847 psig	1800 psig <i>B-2-18-34</i>
<i>173</i>	Vacuum Grayberg SA Unit No. 147	2080 psig	2030 psig <i>H-2-18-34</i>

The step rate test and the results of the teste is attached.

The higher injection limit is requested to obtain more injection and better sweep efficiency in the pattern. If additional information is needed, please contact me at (505) 397-0429.

Yours very truly,


Siamak Safargar
Production Engineer

attachments

cc: Mr. Jerry Sexton
Hobbs NMOCD

PMX *43*
44
74
97
111
120
167
173

WEST-TEST, INC.

A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY
Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: TEXACO EXPLORATION AND PRODUCTION, INC.

DATE: JANUARY 27, 1997

WELL NAME: VACUUM GRAYBURG SAN ANDRES UNIT NO. 4
LEA COUNTY, NEW MEXICO

WO#: 97-14-0123

PERFS = 4524-4777

PACKER DEPTH = 4475

BHP GAUGE DEPTH = SURFACE ONLY

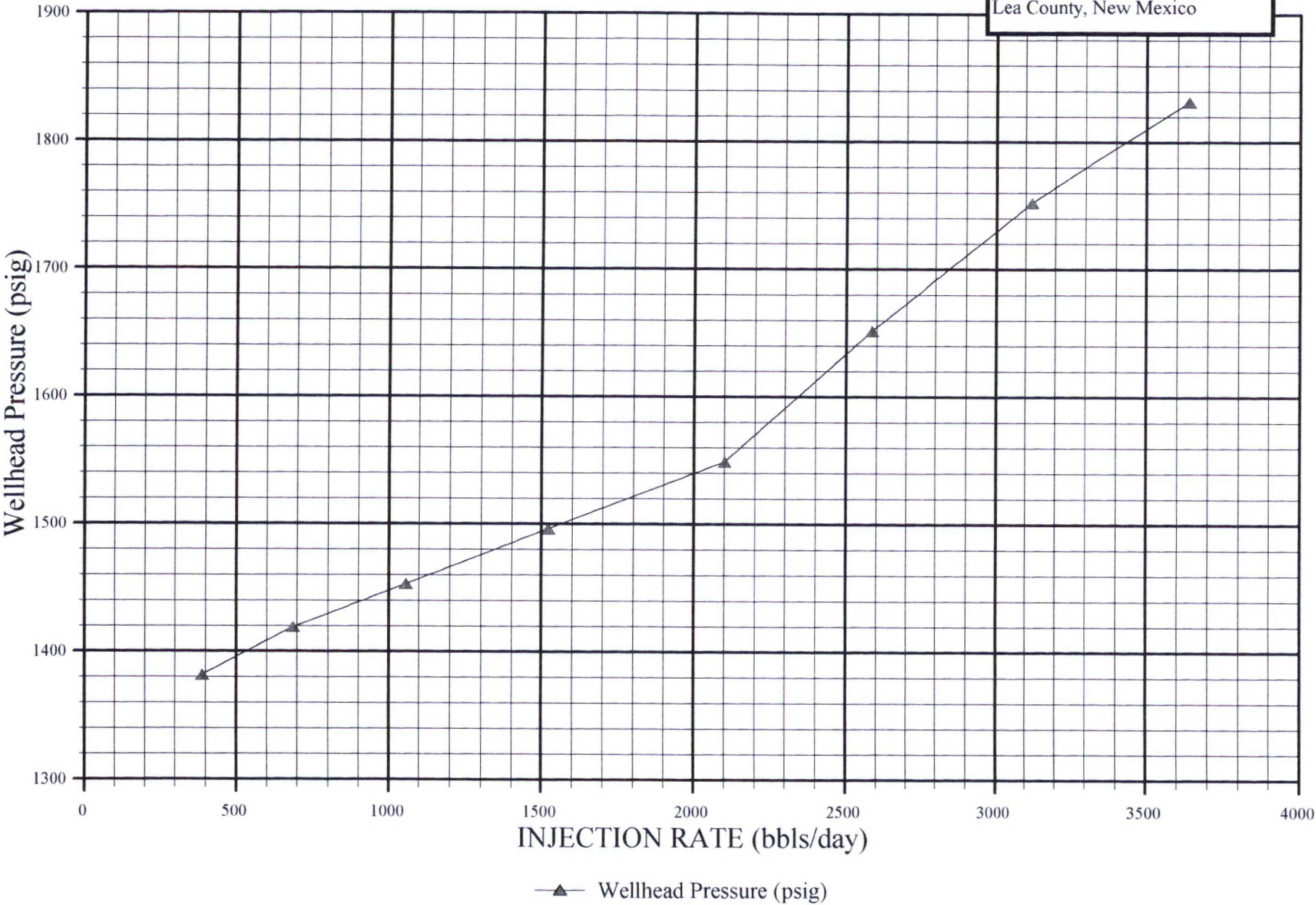
STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
1	10:30	1242.1				1242.1		
	10:35	1352.0	1.4	403.2	2.801	1349.2	11.76	
	10:40	1359.4	2.7	374.4	2.442	1357.0	10.92	
	10:45	1395.1	4.0	374.4	2.442	1392.7	10.92	
	10:50	1379.5	5.4	403.2	2.801	1376.7	11.76	
	10:55	1384.5	6.8	403.2	2.801	1381.7	11.76	
	11:00	1381.7	8.1	374.4	2.442	1379.3	10.92	
				388.8				
	11:05	1417.4	10.5	691.2	7.591	1409.8	20.16	
	11:10	1432.6	12.8	662.4	7.017	1425.6	19.32	
2	11:15	1427.3	15.3	720.0	8.187	1419.1	21.00	
	11:20	1420.7	17.7	691.2	7.591	1413.1	20.16	
	11:25	1420.6	20.0	662.4	7.017	1413.6	19.32	
	11:30	1419.2	22.4	691.2	7.591	1411.6	20.16	
				686.4				
	11:35	1467.7	26.1	1065.6	16.908	1450.8	31.08	
	11:40	1484.3	29.6	1008.0	15.256	1469.0	29.40	
	11:45	1481.6	33.2	1036.8	16.073	1465.5	30.24	
	11:50	1459.7	36.9	1065.6	16.908	1442.8	31.08	
	11:55	1459.7	40.7	1094.4	17.763	1441.9	31.92	
3	12:00	1453.2	44.4	1065.6	16.908	1436.3	31.08	
				1056.0				
	12:05	1501.8	49.7	1526.4	32.873	1468.9	44.52	
	12:10	1494.1	54.8	1468.8	30.615	1463.5	42.84	
	12:15	1495.3	59.9	1468.8	30.615	1464.7	42.84	
	12:20	1505.5	65.3	1555.2	34.030	1471.5	45.36	
	12:25	1501.7	70.7	1555.2	34.030	1467.7	45.36	
	12:30	1496.6	76.1	1555.2	34.030	1462.6	45.36	
				1521.6				

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)
5	12:35	1569.6	83.4	2102.4	59.440	1510.2	61.32	
	12:40	1563.2	90.7	2102.4	59.440	1503.8	61.32	
	12:45	1558.1	98.0	2102.4	59.440	1498.7	61.32	
	12:50	1550.5	105.4	2131.2	60.955	1489.5	62.16	
	12:55	1555.7	112.6	2073.6	57.942	1497.8	60.48	
	1:00	1549.3	119.9	2102.4	59.440	1489.9	61.32	
				2102.4				
	1:05	1628.8	129.1	2649.6	91.188	1537.6	77.28	
	1:10	1634.0	138.2	2620.8	89.362	1544.6	76.44	
	1:15	1634.0	147.2	2592.0	87.554	1546.4	75.60	
6	1:20	1639.2	156.2	2592.0	87.554	1551.6	75.60	
	1:25	1630.3	165.0	2534.4	83.989	1546.3	73.92	
	1:30	1652.2	173.8	2534.4	83.989	1568.2	73.92	
				2587.2				
	1:35	1758.5	184.6	3110.4	122.677	1635.8	90.72	
	1:40	1753.5	195.4	3110.4	122.677	1630.8	90.72	
	1:45	1753.6	206.3	3139.2	124.786	1628.8	91.56	
	1:50	1752.4	217.1	3110.4	122.677	1629.7	90.72	
	1:55	1753.7	228.1	3168.0	126.913	1626.8	92.40	
	2:00	1752.5	238.8	3081.6	120.584	1631.9	89.88	
7				3120.0				
	2:05	1814.1	251.6	3686.4	167.984	1646.1	107.52	
	2:10	1825.7	264.1	3600.0	160.773	1664.9	105.00	
	2:15	1832.2	276.7	3628.8	163.160	1669.0	105.84	
				3638.4				
	2:16	1370.0				1370.0		
	2:17	1379.0				1379.0		
	2:18	1371.4				1371.4		
	2:19	1366.3				1366.3		
	2:20	1363.7				1363.7		
8	2:25	1349.9				1349.9		
	2:30	1339.8				1339.8		
FALLOFF	OUT OF WATER							

STEP RATE INJECTION TEST

TEXACO EXPLORATION AND PRODUCTION, INC

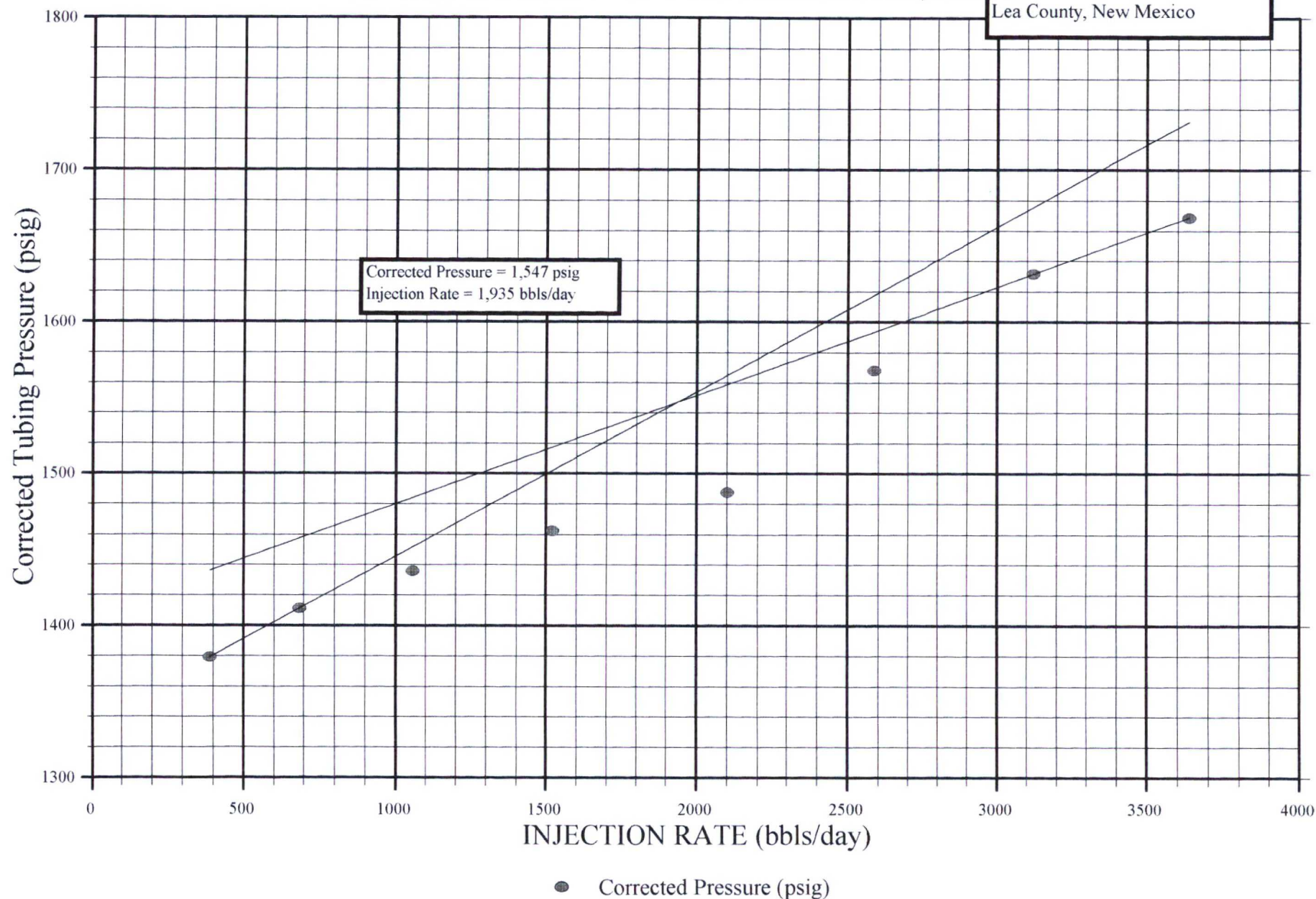
Well Name:
Vacuum Grayburg San Andres
Unit No. 4
Lea County, New Mexico



STEP RATE INJECTION TEST

TEXACO EXPLORATION AND PRODUCTION, INC

Well Name:
Vacuum Grayburg San Andres
Unit No. 4
Lea County, New Mexico



WEST-TEST, INC.

A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY
Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: TEXACO EXPLORATION AND PRODUCTION, INC.

DATE: JANUARY 29, 1997

WELL NAME: VACUUM GRAYBURG SAN ANDRES UNIT NO. 16
LEA COUNTY, NEW MEXICO

WO#: 97-14-0125

PERFS = 4428-4742

PACKER DEPTH = 4390

BHP GAUGE DEPTH = 4585

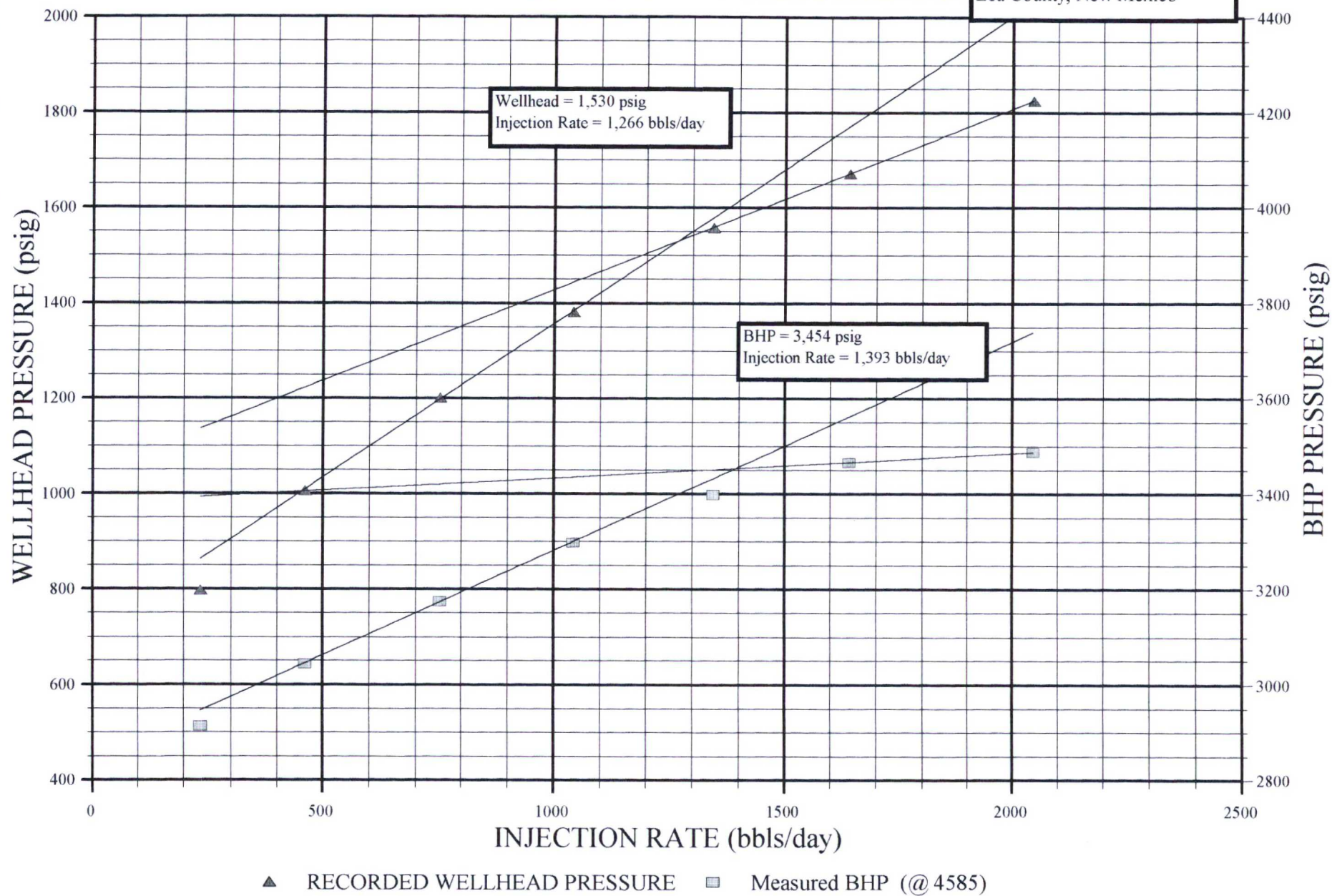
STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
1	10:45	582.8				582.8		2793.0
	10:50	725.8	0.9	259.2	3.254	722.5	7.56	2842.9
	10:55	773.0	1.7	230.4	2.617	770.4	6.72	2865.6
	11:00	804.9	2.5	230.4	2.617	802.3	6.72	2882.2
	11:05	794.5	3.3	230.4	2.617	791.9	6.72	2882.2
	11:10	813.5	4.1	230.4	2.617	810.9	6.72	2894.3
	11:15	799.2	4.9	230.4	2.617	796.6	6.72	2913.9
				235.2				
	11:20	884.8	6.6	489.6	10.553	874.2	14.28	2960.8
	11:25	902.4	8.2	460.8	9.434	893.0	13.44	2983.4
2	11:30	930.4	9.8	460.8	9.434	921.0	13.44	3001.6
	11:35	944.3	11.4	460.8	9.434	934.9	13.44	3018.2
	11:40	991.5	13.0	460.8	9.434	982.1	13.44	3030.4
	11:45	1007.9	14.5	432.0	8.372	999.5	12.60	3044.0
				460.8				
	11:50	1091.0	17.1	748.8	23.161	1067.8	21.84	3090.9
	11:55	1129.2	19.7	748.8	23.161	1106.0	21.84	3116.7
	12:00	1162.3	22.3	748.8	23.161	1139.1	21.84	3139.4
	12:05	1194.2	24.9	748.8	23.161	1171.0	21.84	3159.1
	12:10	1197.8	27.6	777.6	24.836	1173.0	22.68	3169.8
3	12:15	1202.8	30.2	748.8	23.161	1179.6	21.84	3175.9
				753.6				
	12:20	1284.6	33.8	1036.8	42.288	1242.3	30.24	3212.2
	12:25	1320.3	37.4	1036.8	42.288	1278.0	30.24	3235.0
	12:30	1345.8	41.0	1036.8	42.288	1303.5	30.24	3254.7
	12:35	1348.2	44.6	1036.8	42.288	1305.9	30.24	3271.4
	12:40	1377.6	48.3	1065.6	44.487	1333.1	31.08	3285.0
	12:45	1382.6	51.9	1036.8	42.288	1340.3	30.24	3298.7
				1041.6				

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbbls)	(3) INJECTION RATE (bbbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1) - (4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
5	12:50	1496.5	56.6	1353.6	69.253	1427.2	39.48	3330.5
	12:55	1513.0	61.2	1324.6	66.534	1446.5	38.63	3350.2
	1:00	1527.0	65.9	1353.6	69.253	1457.7	39.48	3366.9
	1:05	1541.0	70.6	1353.6	69.253	1471.7	39.48	3380.6
	1:10	1549.8	75.2	1324.8	66.552	1483.2	38.64	3391.2
	1:15	1560.0	79.9	1353.6	69.253	1490.7	39.48	3398.8
				1344.0				
	1:20	1663.7	85.6	1641.6	98.953	1564.7	47.88	3421.5
	1:25	1685.4	91.3	1641.6	98.953	1586.4	47.88	3435.2
	1:30	1689.2	97.0	1641.6	98.953	1590.2	47.88	3444.3
6	1:35	1695.6	102.7	1641.6	98.953	1596.6	47.88	3451.9
	1:40	1694.3	108.4	1641.6	98.953	1595.3	47.88	3459.5
	1:45	1672.6	114.1	1641.6	98.953	1573.6	47.88	3467.1
				1641.6				
	1:50	1812.1	121.1	2016.0	144.708	1667.4	58.80	3477.7
	1:55	1805.7	128.2	2044.8	148.555	1657.1	59.64	3467.1
	2:00	1813.4	135.3	2044.8	148.555	1664.8	59.64	3471.7
	2:05	1823.7	142.5	2073.6	152.449	1671.3	60.48	3477.7
	2:10	1819.8	149.5	2016.0	144.708	1675.1	58.80	3482.3
	2:15	1826.2	156.7	2073.6	152.449	1673.8	60.48	3488.3
FALLOFF				2044.8				
	2:16	1431.9				1431.9		3467.2
	2:17	1412.6				1412.6		3458.1
	2:18	1406.2				1406.2		3450.5
	2:19	1399.8				1399.8		3443.0
	2:20	1393.4				1393.4		3436.9
	2:25	1370.4				1370.4		3412.6
	2:30	1349.8				1349.8		3391.4

STEP RATE INJECTION TEST

TEXACO EXPLORATION AND PRODUCTION INC.

Well Name:
Vacuum Grayburg
San Andres Unit No. 16
Lea County, New Mexico



WEST-TEST, INC.

A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: TEXACO EXPLORATION AND PRODUCTION

DATE: FEBRUARY 13, 1997

WELL NAME: VACUUM GRAYBURG SAN ANDRES UNIT NO. 18
LEA COUNTY, NEW MEXICO

WO#: 97-14-0291

PERFS = 4311-4736

PACKER DEPTH =

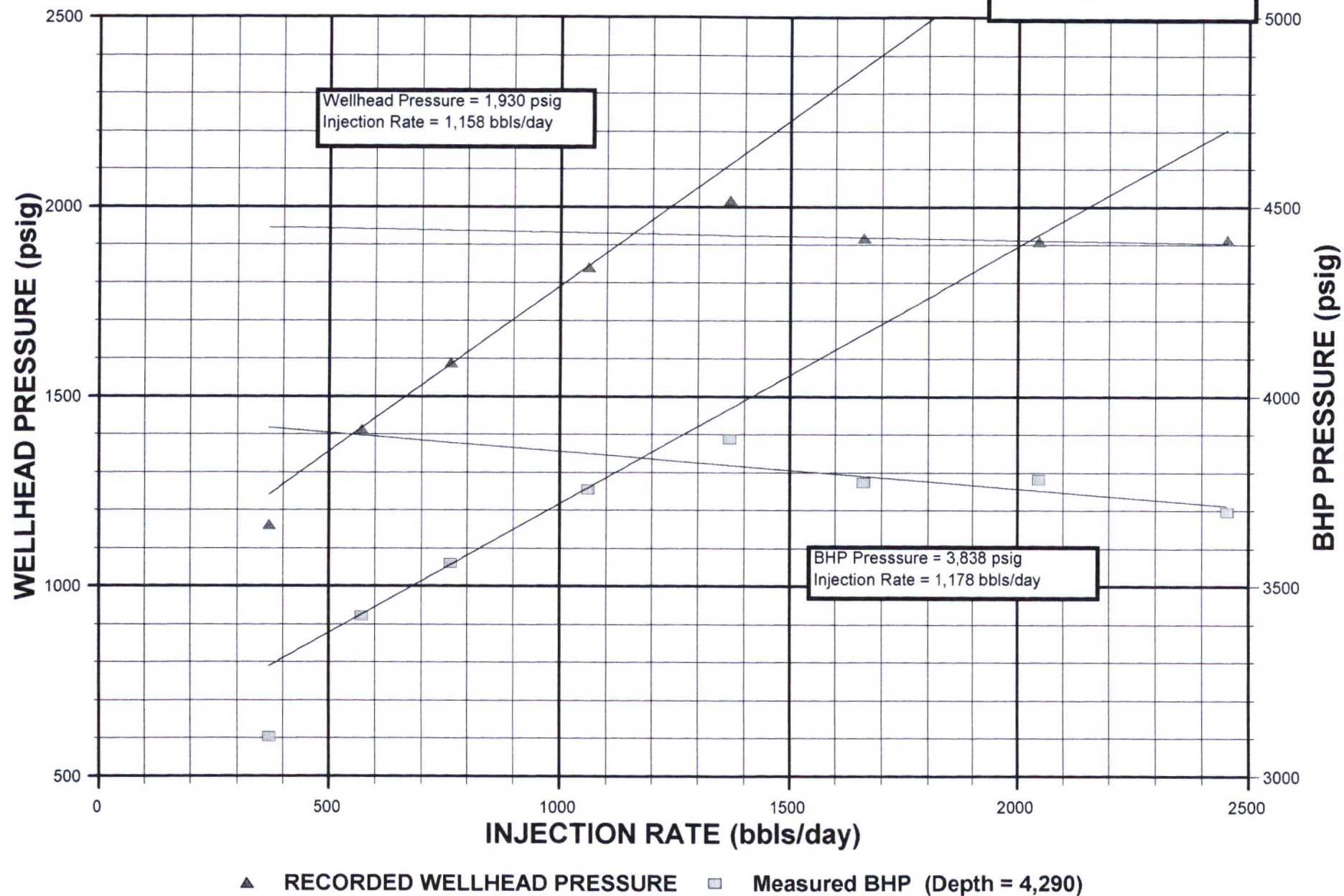
BHP GAUGE DEPTH = 4290

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)
1	10:00	616.9				616.9		2555.6
	10:05	893.0	1.2	345.6	5.184	887.8	10.08	2832.2
	10:10	997.8	2.5	374.4	6.011	991.8	10.92	2927.5
	10:15	1032.3	3.8	374.4	6.011	1026.3	10.92	2978.9
	10:20	1109.1	5.1	374.4	6.011	1103.1	10.92	3040.9
	10:25	1135.9	6.4	374.4	6.011	1129.9	10.92	3083.3
	10:30	1164.0	7.7	374.4	6.011	1158.0	10.92	3106.0
				369.6				
	10:35	1298.3	9.8	604.8	14.598	1283.7	17.64	3254.3
	10:40	1339.2	11.8	576.0	13.338	1325.9	16.80	3308.8
2	10:45	1381.4	13.8	576.0	13.338	1368.1	16.80	3348.1
	10:50	1394.1	15.8	576.0	13.338	1380.8	16.80	3373.9
	10:55	1400.5	17.7	547.2	12.130	1388.4	15.96	3392.1
	11:00	1414.6	19.6	547.2	12.130	1402.5	15.96	3423.8
				571.2				
	11:05	1518.2	22.3	777.6	23.238	1495.0	22.68	3501.0
	11:10	1532.2	25.0	777.6	23.238	1509.0	22.68	3541.9
	11:15	1541.1	27.6	748.8	21.671	1519.4	21.84	3546.5
	11:20	1562.9	30.3	777.6	23.238	1539.7	22.68	3549.5
	11:25	1566.7	32.9	748.8	21.671	1545.0	21.84	3564.7
3	11:30	1591.0	35.5	748.8	21.671	1569.3	21.84	3561.7
				763.2				
	11:35	1776.5	39.2	1065.6	41.625	1734.9	31.08	3711.5
	11:40	1805.9	42.9	1065.6	41.625	1764.3	31.08	3735.8
	11:45	1811.0	46.6	1065.6	41.625	1769.4	31.08	3741.9
	11:50	1834.0	50.3	1065.6	41.625	1792.4	31.08	3749.5
	11:55	1845.5	53.9	1036.8	39.567	1805.9	30.24	3763.1
	12:00	1843.0	57.6	1065.6	41.625	1801.4	31.08	3757.1
				1060.8				

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)
5	12:05	2015.7	62.4	1382.4	67.371	1948.3	40.32	3894.8
	12:10	2002.9	67.2	1382.4	67.371	1935.5	40.32	3878.2
	12:15	1995.2	71.8	1324.8	62.270	1932.9	38.64	3869.2
	12:20	2018.2	76.6	1382.4	67.371	1950.8	40.32	3888.9
	12:25	2036.2	81.3	1353.6	64.798	1971.4	39.48	3905.6
	12:30	2019.5	86.1	1382.4	67.371	1952.1	40.32	3890.5
				1368.0				
	12:35	2135.1	91.8	1641.6	92.586	2042.5	47.88	3972.2
	12:40	2133.9	97.6	1670.4	95.614	2038.3	48.72	3970.7
	12:45	2135.1	103.3	1641.6	92.586	2042.5	47.88	3972.2
6	12:50	2124.9	109.2	1699.2	98.686	2026.2	49.56	3961.7
	12:55	2018.2	114.9	1641.6	92.586	1925.6	47.88	3857.3
	1:00	1919.8	120.7	1670.4	95.614	1824.2	48.72	3775.6
				1660.8				
	1:05	2103.0	127.7	2016.0	135.397	1967.6	58.80	3914.8
	1:10	2025.9	134.8	2044.8	138.997	1886.9	59.64	3880.1
	1:15	1924.5	142.0	2073.6	142.641	1781.9	60.48	3824.1
	1:20	1927.4	149.1	2044.8	138.997	1788.4	59.64	3796.9
	1:25	1930.0	156.2	2044.8	138.997	1791.0	59.64	3804.5
	1:30	1912.1	163.3	2044.8	138.997	1773.1	59.64	3783.3
7				2044.8				
	1:35	2119.7	171.8	2448.0	193.911	1925.8	71.40	3919.5
	1:40	2094.0	180.4	2476.8	198.153	1895.8	72.24	3896.8
	1:45	2106.8	188.8	2419.2	189.712	1917.1	70.56	3912.0
	1:50	2065.7	197.3	2448.0	193.911	1871.8	71.40	3866.6
	1:55	2045.2	205.9	2476.8	198.153	1847.0	72.24	3845.4
	2:00	1914.6	214.4	2448.0	193.911	1720.7	71.40	3698.7
				2452.8				
	2:01	1293.0				1293.0		3344.6
	2:02	1296.8				1296.8		3347.7
8	2:03	1301.9				1301.9		3352.2
	2:04	1290.4				1290.4		3340.1
	2:05	1294.3				1294.3		3344.6
	2:10	1253.3				1253.3		3300.6
	2:15	1211.1				1211.1		3256.6
FALLOFF	2:01	1293.0				1293.0		3344.6
	2:02	1296.8				1296.8		3347.7
	2:03	1301.9				1301.9		3352.2
	2:04	1290.4				1290.4		3340.1
	2:05	1294.3				1294.3		3344.6
	2:10	1253.3				1253.3		3300.6
	2:15	1211.1				1211.1		3256.6

STEP RATE INJECTION TEST
TEXACO EXPLORATION AND PRODUCTION INC.

Well Name:
Vacuum Grayburg
San Andres Unit No. 18
Lea County, New Mexico



WEST-TEST, INC.

A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY
Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: TEXACO EXPLORATION AND PRODUCTION, INC.

DATE: JANUARY 30, 1997

WELL NAME: VACUUM GRAYBURG SAN ANDRES UNIT NO. 30
LEA COUNTY, NEW MEXICO

WO#: 97-14-0126

PERFS = 4443-4740

PACKER DEPTH = 4211

BHP GAUGE DEPTH = 4592

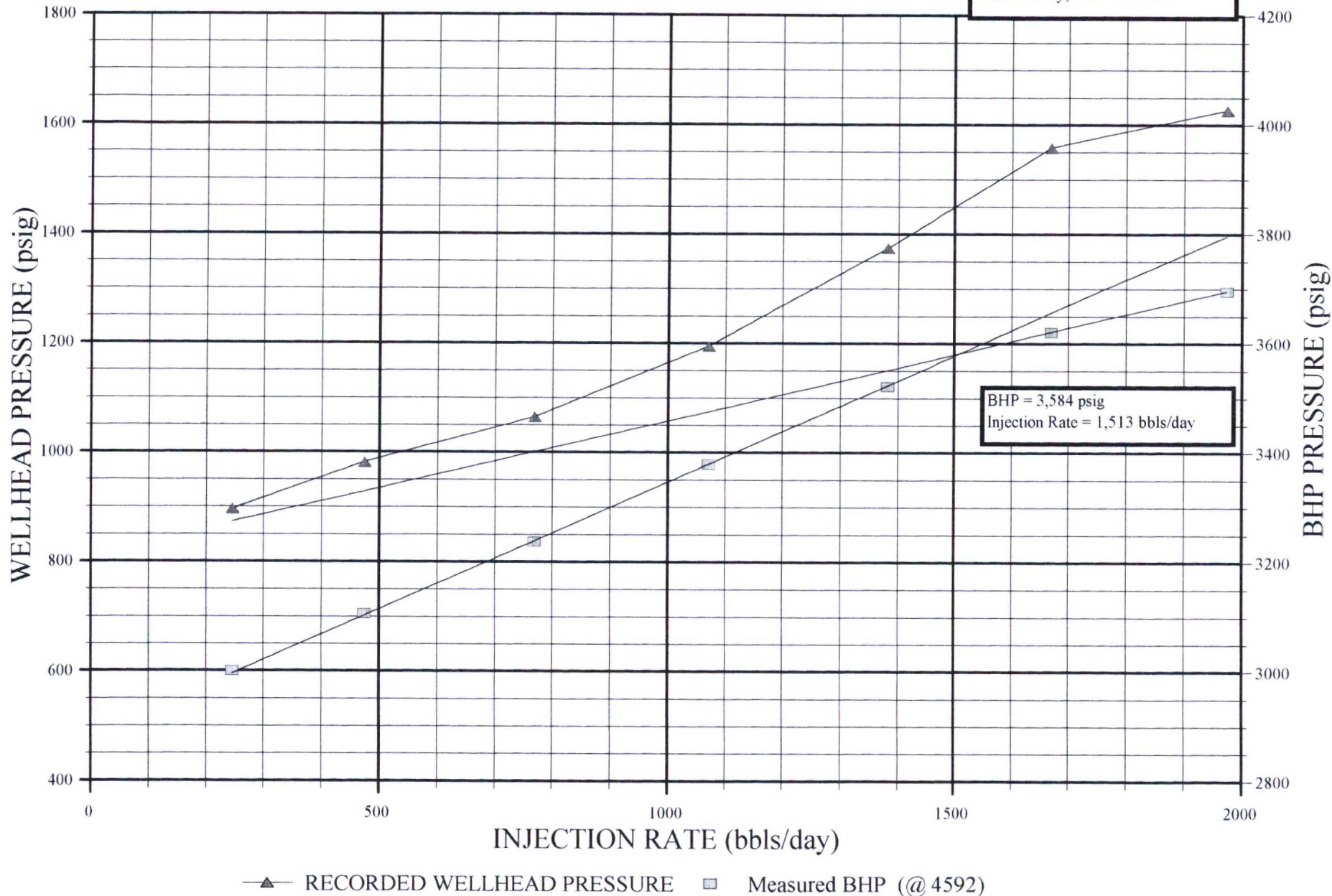
STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
1	9:55	747.9				747.9		2880.8
	10:00	834.6	0.8	230.4	2.621	832.0	6.72	2935.2
	10:05	844.6	1.6	230.4	2.621	842.0	6.72	2956.3
	10:10	857.2	2.5	259.2	3.259	853.9	7.56	2971.4
	10:15	883.9	3.3	230.4	2.621	881.3	6.72	2983.5
	10:20	887.5	4.2	259.2	3.259	884.2	7.56	2992.6
	10:25	896.3	5.1	259.2	3.259	893.0	7.56	3001.6
				244.8				
	10:30	939.6	6.6	432.0	8.385	931.2	12.60	3033.4
	10:35	968.8	8.2	460.8	9.448	959.4	13.44	3048.5
2	10:40	964.8	9.9	489.6	10.569	954.2	14.28	3068.1
	10:45	968.5	11.6	489.6	10.569	957.9	14.28	3081.7
	10:50	979.8	13.3	489.6	10.569	969.2	14.28	3093.8
	10:55	982.2	15.0	489.6	10.569	971.6	14.28	3106.0
				475.2				
	11:00	1025.6	17.6	748.8	23.197	1002.4	21.84	3148.3
	11:05	1034.4	20.2	748.8	23.197	1011.2	21.84	3171.1
	11:10	1029.1	22.9	777.6	24.874	1004.2	22.68	3190.7
	11:15	1035.4	25.6	777.6	24.874	1010.5	22.68	3208.9
	11:20	1059.6	28.3	777.6	24.874	1034.7	22.68	3224.1
3	11:25	1065.9	31.0	777.6	24.874	1041.0	22.68	3237.7
				768.0				
	11:30	1114.4	34.7	1065.6	44.555	1069.8	31.08	3284.7
	11:35	1142.5	38.4	1065.6	44.555	1097.9	31.08	3310.4
	11:40	1160.3	42.2	1094.4	46.808	1113.5	31.92	3330.1
	11:45	1173.0	45.9	1065.6	44.555	1128.4	31.08	3348.3
	11:50	1188.3	49.6	1065.6	44.555	1143.7	31.08	3365.0
	11:55	1195.9	53.3	1065.6	44.555	1151.3	31.08	3380.1
				1070.4				

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)
5	12:00	1286.7	58.1	1382.4	72.114	1214.6	40.32	3427.1
	12:05	1304.6	62.9	1382.4	72.114	1232.5	40.32	3452.8
	12:10	1327.6	67.7	1382.4	72.114	1255.5	40.32	3474.1
	12:15	1348.0	72.5	1382.4	72.114	1275.9	40.32	3492.2
	12:20	1365.8	77.3	1382.4	72.114	1293.7	40.32	3508.9
	12:25	1374.7	82.1	1382.4	72.114	1302.6	40.32	3522.6
				1382.4				
	12:30	1447.6	88.1	1728.0	108.969	1338.6	50.40	3563.4
	12:35	1471.9	93.8	1641.6	99.104	1372.8	47.88	3578.6
	12:40	1482.1	99.5	1641.6	99.104	1383.0	47.88	3592.2
6	12:45	1489.7	105.3	1670.4	102.345	1387.4	48.72	3604.3
	12:50	1502.4	111.1	1670.4	102.345	1400.1	48.72	3613.4
	12:55	1558.7	116.9	1670.4	102.345	1456.4	48.72	3622.5
				1670.4				
	1:00	1572.8	123.7	1958.4	137.361	1435.4	57.12	3648.2
7	1:05	1589.4	130.5	1958.4	137.361	1452.0	57.12	3660.4
	1:10	1598.3	137.4	1987.2	141.122	1457.2	57.96	3669.5
	1:15	1617.5	144.2	1958.4	137.361	1480.1	57.12	3680.1
	1:20	1629.0	151.1	1987.2	141.122	1487.9	57.96	3689.2
	1:25	1627.7	158.0	1987.2	141.122	1486.6	57.96	3696.7
FALLOFF				1972.8				
	1:26	1440.8				1440.8		3652.8
	1:27	1398.5				1398.5		3631.7
	1:28	1381.8				1381.8		3615.0
	1:29	1367.7				1367.7		3599.9
	1:30	1355.0				1355.0		3587.7
	1:35	1303.7				1303.7		3533.2
	1:40	1264.0				1264.0		3493.7

STEP RATE INJECTION TEST

TEXACO EXPLORATION AND PRODUCTION INC.

Well Name:
Vacuum Grayburg
San Andres Unit No. 30
Lea County, New Mexico



WEST-TEST, INC.

A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: TEXACO EXPLORATION AND PRODUCTION, INC.

DATE: FEBRUARY 14, 1997

WELL NAME: VACUUM GRAYBURG SAN ANDRES UNIT NO. 32
LEA COUNTY, NEW MEXICO

WO#: 97-14-0292

PERFS = 4333-4781

PACKER DEPTH =

BHP GAUGE DEPTH = 4500

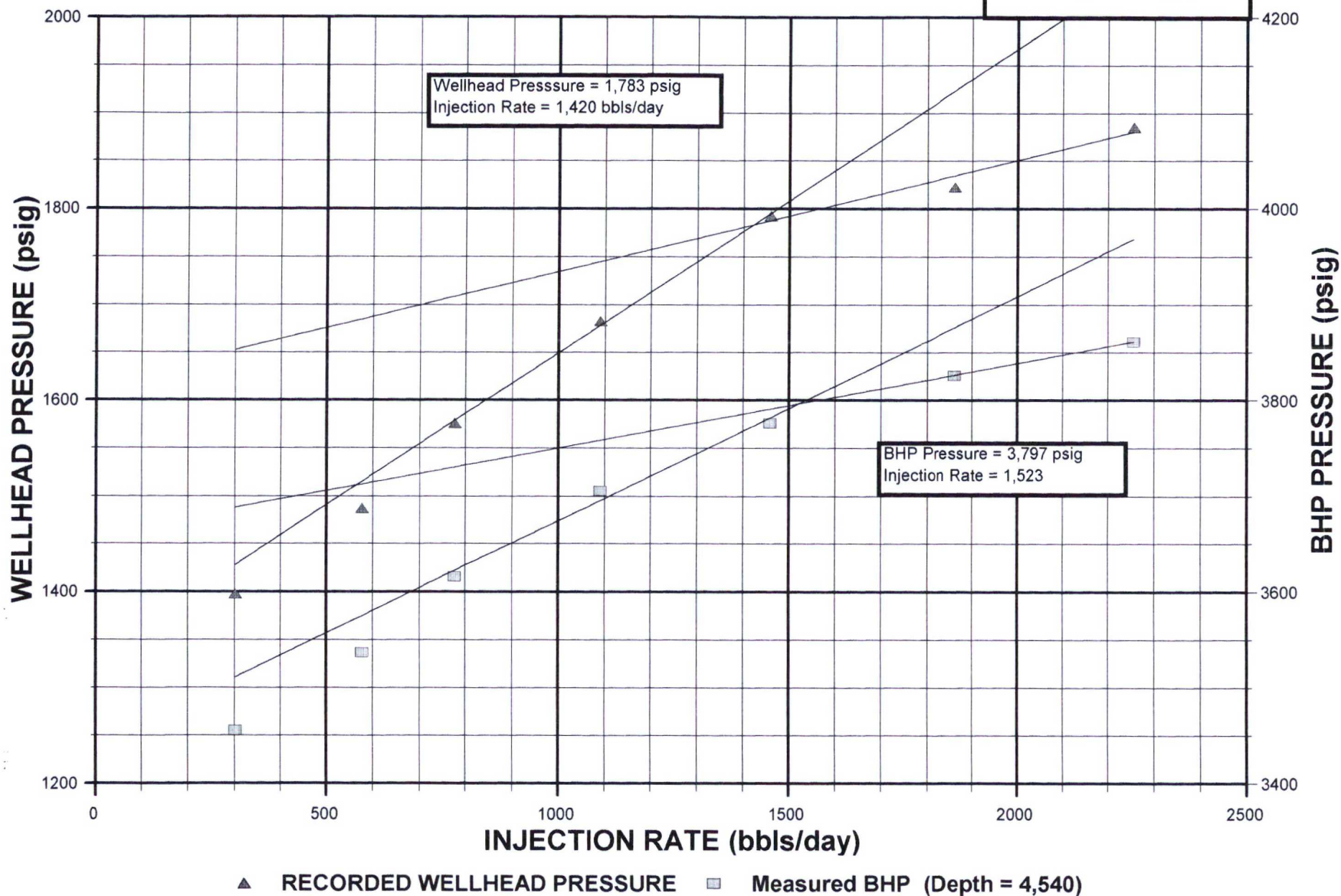
STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
1	10:05	1280.4				1280.4		3343.8
	10:10	1330.1	1.0	288.0	3.881	1326.2	8.40	3387.7
	10:15	1370.9	2.1	316.8	4.629	1366.3	9.24	3405.8
	10:20	1357.9	3.1	288.0	3.881	1354.0	8.40	3419.4
	10:25	1368.0	4.2	316.8	4.629	1363.4	9.24	3429.9
	10:30	1394.7	5.3	316.8	4.629	1390.1	9.24	3439.0
	10:35	1398.4	6.3	288.0	3.881	1394.5	8.40	3455.6
				302.4				
	10:40	1429.0	8.3	576.0	13.991	1415.0	16.80	3479.8
	10:45	1451.9	10.3	576.0	13.991	1437.9	16.80	3496.5
2	10:50	1453.1	12.3	576.0	13.991	1439.1	16.80	3508.6
	10:55	1477.3	14.3	576.0	13.991	1463.3	16.80	3519.2
	11:00	1479.8	16.3	576.0	13.991	1465.8	16.80	3529.8
	11:05	1487.4	18.3	576.0	13.991	1473.4	16.80	3537.4
				576.0				
	11:10	1524.4	21.0	777.6	24.376	1500.0	22.68	3564.6
	11:15	1535.9	23.8	806.4	26.072	1509.8	23.52	3578.3
	11:20	1546.0	26.4	748.8	22.732	1523.3	21.84	3588.9
	11:25	1558.7	29.1	777.6	24.376	1534.3	22.68	3599.5
	11:30	1567.6	31.8	777.6	24.376	1543.2	22.68	3607.1
3	11:35	1576.5	34.5	777.6	24.376	1552.1	22.68	3616.2
				777.6				
	11:40	1626.3	38.3	1094.4	45.870	1580.4	31.92	3646.5
	11:45	1642.9	42.1	1094.4	45.870	1597.0	31.92	3661.6
	11:50	1654.3	45.9	1094.4	45.870	1608.4	31.92	3675.3
	11:55	1670.9	49.6	1065.6	43.662	1627.2	31.08	3684.4
	12:00	1674.7	53.4	1094.4	45.870	1628.8	31.92	3692.0
	12:05	1683.5	57.2	1094.4	45.870	1637.6	31.92	3701.1
				1089.6				

		(1)	(2)	(3)	(4)	(5)	(6)	(7)
STEP NO. & REMARKS	TIME	SURFACE TUBING PRESS. (psig)	CUMMULATIVE VOL. INJECTED (bbls)	INJECTION RATE (bbls/day)	FRICTION HEAD LOSS (psi)	CORRECTED TUBING PRESS. (psi) (1) - (4)	INJECTION RATE (gpm) (3)/34.2857	MEASURED BHP (psi)
5	12:10	1747.5	62.3	1468.8	79.057	1668.4	42.84	3734.4
	12:15	1771.7	67.4	1468.8	79.057	1692.6	42.84	3748.0
	12:20	1778.1	72.4	1440.0	76.213	1701.9	42.00	3758.6
	12:25	1780.5	77.5	1468.8	79.057	1701.4	42.84	3766.2
	12:30	1797.1	82.5	1440.0	76.213	1720.9	42.00	3772.3
	12:35	1793.2	87.6	1468.8	79.057	1714.1	42.84	3776.8
				1459.2				
	12:40	1857.1	94.0	1843.2	120.328	1736.8	53.76	3805.6
	12:45	1837.9	100.5	1872.0	123.829	1714.1	54.60	3814.7
	12:50	1825.0	106.9	1843.2	120.328	1704.7	53.76	3820.8
6	12:55	1818.6	113.4	1872.0	123.829	1694.8	54.60	3823.8
	1:00	1809.5	119.9	1872.0	123.829	1685.7	54.60	3825.4
	1:05	1823.7	126.4	1872.0	123.829	1699.9	54.60	3826.9
				1862.4				
	1:10	1876.0	134.2	2246.4	173.504	1702.5	65.52	3848.1
	1:15	1892.6	142.1	2275.2	177.641	1715.0	66.36	3855.7
	1:20	1884.9	150.0	2275.2	177.641	1707.3	66.36	3860.3
	1:25	1884.9	157.8	2246.4	173.504	1711.4	65.52	3860.3
	1:30	1878.4	165.6	2246.4	173.504	1704.9	65.52	3860.3
	1:35	1886.1	173.4	2246.4	173.504	1712.6	65.52	3861.9
FALLOFF				2256.0				
	1:36	1601.8				1601.8		3787.7
	1:37	1589.0				1589.0		3774.1
	1:38	1580.1				1580.1		3763.5
	1:39	1572.4				1572.4		3755.9
	1:40	1564.7				1564.7		3748.3
	1:45	1539.0				1539.0		3719.5
	1:50	1518.6				1518.6		3699.7

STEP RATE INJECTION TEST

TEXACO EXPLORATION AND PRODUCTION INC.

Well Name:
Vacuum Grayburg
San Andres Unit No. 32
Lea County, New Mexico



WEST-TEST, INC.

A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: TEXACO EXPLORATION AND PRODUCTION INC.

DATE: JANUARY 31, 1997

WELL NAME: VACUUM GRAYBURG SAN ANDRES UNIT NO. 44
LEA COUNTY, NEW MEXICO

WO#: 97-14-0127

PERFS = 4443-4786

PACKER DEPTH = 4380

BHP GAUGE DEPTH = 4350

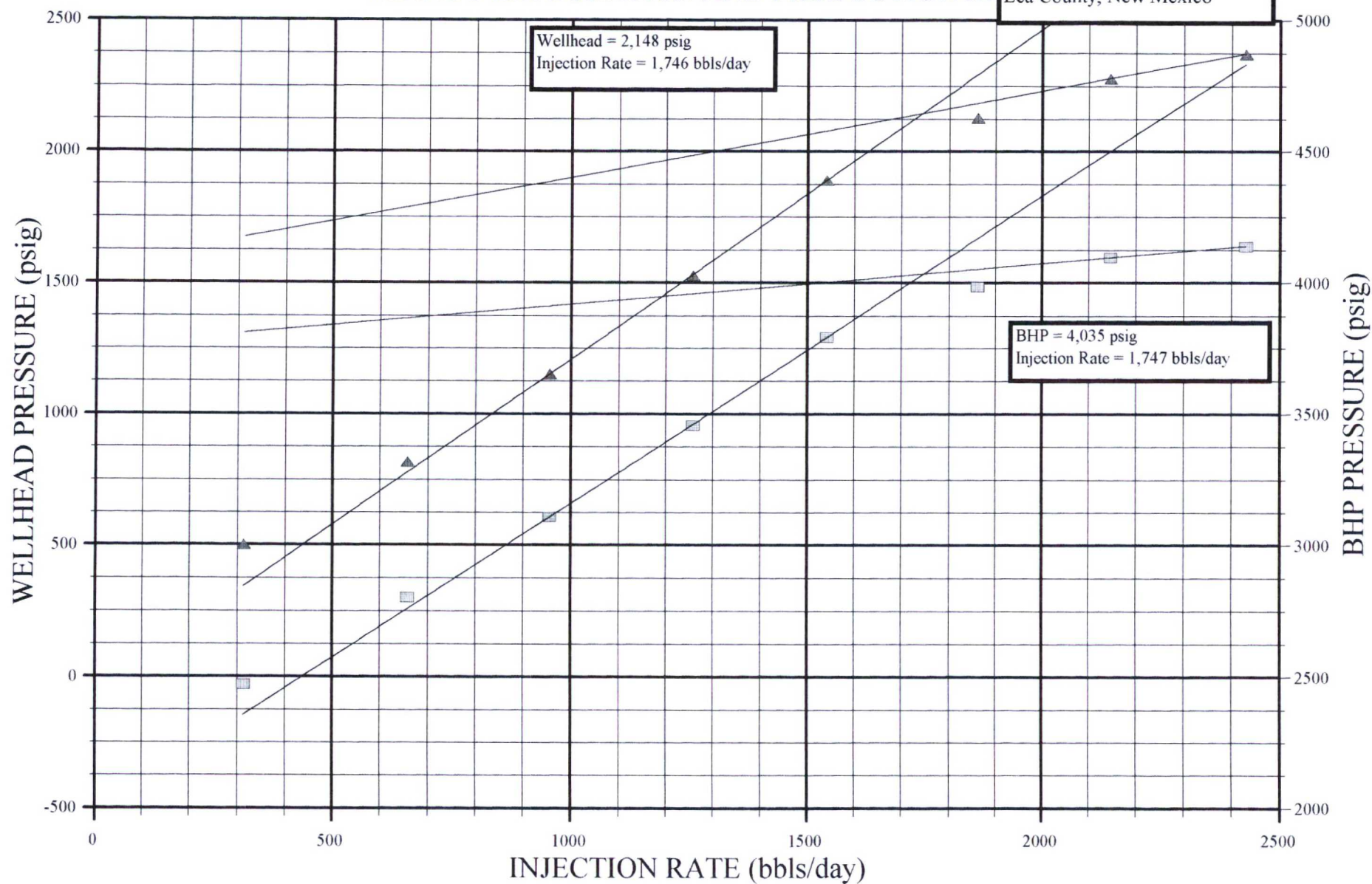
STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
1	9:45	299.1				299.1		2271.6
	9:50	405.1	1.2	345.6	5.256	399.8	10.08	2368.3
	9:55	428.0	2.3	316.8	4.475	423.5	9.24	2401.6
	10:00	466.2	3.4	316.8	4.475	461.7	9.24	2425.8
	10:05	472.5	4.4	288.0	3.752	468.7	8.40	2442.4
	10:10	486.5	5.5	316.8	4.475	482.0	9.24	2459.0
	10:15	503.0	6.5	288.0	3.752	499.2	8.40	2471.1
				312.0				
	10:20	672.9	8.7	633.6	16.132	656.8	18.48	2637.4
	10:25	721.4	11.0	662.4	17.515	703.9	19.32	2690.4
2	10:30	757.1	13.3	662.4	17.515	739.6	19.32	2720.6
	10:35	771.1	15.6	662.4	17.515	753.6	19.32	2741.8
	10:40	795.3	17.9	662.4	17.515	777.8	19.32	2781.1
	10:45	819.5	20.2	662.4	17.515	802.0	19.32	2803.8
				657.6				
	10:50	1011.2	23.6	979.2	36.095	975.1	28.56	2967.1
	10:55	1044.4	27.0	979.2	36.095	1008.3	28.56	3008.0
	11:00	1071.2	30.3	950.4	34.156	1037.0	27.72	3041.3
	11:05	1108.2	33.6	950.4	34.156	1074.0	27.72	3067.0
	11:10	1122.2	37.0	979.2	36.095	1086.1	28.56	3089.7
3	11:15	1155.4	40.1	892.8	30.425	1125.0	26.04	3107.9
				955.2				
	11:20	1371.6	44.6	1296.0	60.625	1311.0	37.80	3301.6
	11:25	1412.5	48.9	1238.4	55.735	1356.8	36.12	3342.5
	11:30	1445.6	53.3	1267.2	58.156	1387.4	36.96	3374.3
	11:35	1482.6	57.7	1267.2	58.156	1424.4	36.96	3407.7
	11:40	1501.7	62.0	1238.4	55.735	1446.0	36.12	3436.4
	11:45	1528.4	66.3	1238.4	55.735	1472.7	36.12	3459.1
				1257.6				

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)
5	11:50	1742.1	71.8	1584.0	87.878	1654.2	46.20	3643.7
	11:55	1782.8	77.1	1526.4	82.058	1700.7	44.52	3686.1
	12:00	1817.2	82.5	1555.2	84.945	1732.3	45.36	3717.9
	12:05	1851.6	87.7	1497.6	79.217	1772.4	43.68	3748.2
	12:10	1873.2	93.1	1555.2	84.945	1788.3	45.36	3769.4
	12:15	1892.2	98.4	1526.4	82.058	1810.1	44.52	3793.6
				1540.8				
	12:20	2109.7	104.9	1872.0	119.702	1990.0	54.60	3958.5
	12:25	2092.7	111.3	1843.2	116.317	1976.4	53.76	3943.4
	12:30	2093.7	117.8	1872.0	119.702	1974.0	54.60	3944.9
6	12:35	2101.2	124.2	1843.2	116.317	1984.9	53.76	3955.5
	12:40	2121.4	130.7	1872.0	119.702	2001.7	54.60	3975.2
	12:45	2131.4	137.2	1872.0	119.702	2011.7	54.60	3985.8
				1862.4				
	12:50	2252.8	144.6	2131.2	152.156	2100.6	62.16	4061.6
	12:55	2269.2	152.0	2131.2	152.156	2117.0	62.16	4076.8
	1:00	2270.2	159.4	2131.2	152.156	2118.0	62.16	4078.3
	1:05	2273.8	167.0	2188.8	159.851	2113.9	63.84	4087.4
	1:10	2280.0	174.4	2131.2	152.156	2127.8	62.16	4092.0
	1:15	2279.8	181.9	2160.0	155.982	2123.8	63.00	4096.5
7				2145.6				
	1:20	2369.2	190.3	2419.2	192.365	2176.8	70.56	4137.6
	1:25	2363.8	198.7	2419.2	192.365	2171.4	70.56	4134.6
	1:30	2364.9	207.2	2448.0	196.623	2168.3	71.40	4133.0
	1:35	2363.4	215.6	2419.2	192.365	2171.0	70.56	4134.6
	1:40	2372.2	224.0	2419.2	192.365	2179.8	70.56	4139.1
	1:45	2373.3	232.5	2448.0	196.623	2176.7	71.40	4140.6
				2428.8				
	1:46	1939.3				1939.3		3954.0
	1:47	1898.3				1898.3		3913.2
8	1:48	1866.3				1866.3		3879.9
	1:49	1835.5				1835.5		3849.6
	1:50	1806.1				1806.1		3820.9
	1:55	1680.4				1680.4		3692.2
	2:00	1584.3				1584.3		3596.8
FALLOFF								

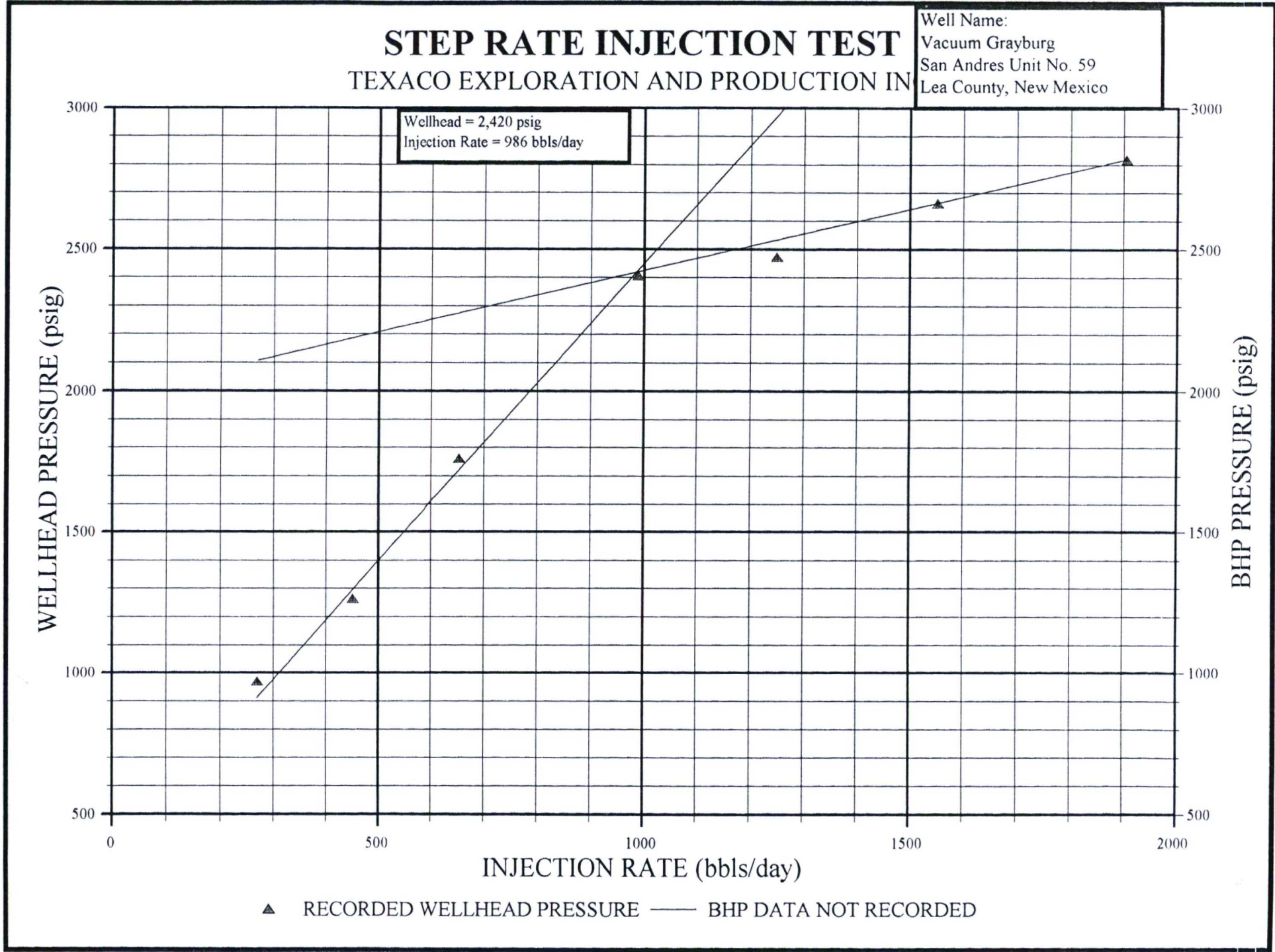
STEP RATE INJECTION TEST

TEXACO EXPLORATION AND PRODUCTION INC.

Well Name:
Vacuum Grayburg
San Andres Unit No. 44
Lea County, New Mexico



▲ RECORDED WELLHEAD PRESSURE □ Measured BHP (@ 4,350)



WEST-TEST, INC.

A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: TEXACO EXPLORATION AND PRODUCTION, INC.

DATE: FEBRUARY 3, 1997

WELL NAME: VACUUM GRAYBURG SAN ANDRES UNIT NO. 59
LEA COUNTY, NEW MEXICO

WO#: 97-14-0128

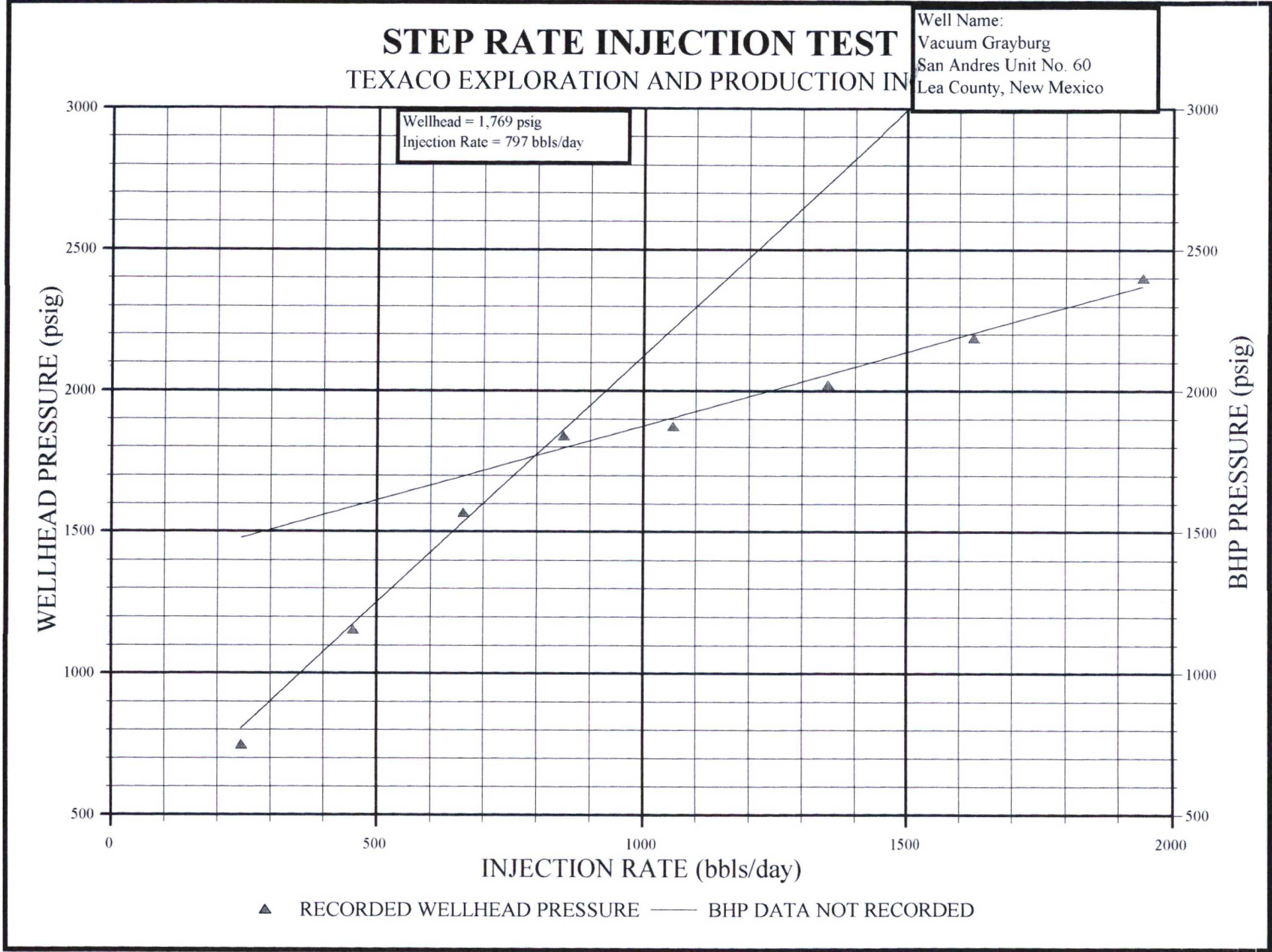
PERFS = 4507-4762

PACKER DEPTH = 4273

BHP GAUGE DEPTH = SURFACE ONLY

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)
1	9:50	623.8				623.8		
	9:55	786.0	0.8	230.4	2.645	783.4	6.72	
	10:00	914.9	1.7	259.2	3.289	911.6	7.56	
	10:05	922.4	2.7	288.0	3.997	918.4	8.40	
	10:10	901.7	3.6	259.2	3.289	898.4	7.56	
	10:15	974.4	4.6	288.0	3.997	970.4	8.40	
	10:20	971.7	5.6	288.0	3.997	967.7	8.40	
				268.8				
	10:25	1237.8	7.1	432.0	8.463	1229.3	12.60	
	10:30	1231.2	8.7	460.8	9.537	1221.7	13.44	
2	10:35	1233.6	10.3	460.8	9.537	1224.1	13.44	
	10:40	1256.5	11.8	432.0	8.463	1248.0	12.60	
	10:45	1273.0	13.4	460.8	9.537	1263.5	13.44	
	10:50	1267.7	15.0	460.8	9.537	1258.2	13.44	
				451.2				
	10:55	1701.6	17.3	662.4	18.662	1682.9	19.32	
	11:00	1720.7	19.6	662.4	18.662	1702.0	19.32	
	11:05	1814.1	21.9	662.4	18.662	1795.4	19.32	
	11:10	1770.4	24.1	633.6	17.189	1753.2	18.48	
	11:15	1751.1	26.3	633.6	17.189	1733.9	18.48	
3	11:20	1765.0	28.6	662.4	18.662	1746.3	19.32	
				652.8				
	11:25	2404.1	32.0	979.2	38.460	2365.6	28.56	
	11:30	2405.2	35.5	1008.0	40.579	2364.6	29.40	
	11:35	2420.4	38.8	950.4	36.393	2384.0	27.72	
	11:40	2430.5	42.2	979.2	38.460	2392.0	28.56	
	11:45	2422.7	45.7	1008.0	40.579	2382.1	29.40	
	11:50	2409.7	49.2	1008.0	40.579	2369.1	29.40	
				988.8				

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)
5	11:55	2492.9	53.6	1267.2	61.967	2430.9	36.96	
	12:00	2483.8	58.0	1267.2	61.967	2421.8	36.96	
	12:05	2473.5	62.2	1209.6	56.857	2416.6	35.28	
	12:10	2469.5	66.5	1238.4	59.386	2410.1	36.12	
	12:15	2491.2	70.8	1238.4	59.386	2431.8	36.12	
	12:20	2475.7	75.2	1267.2	61.967	2413.7	36.96	
				1248.0				
	12:25	2618.2	80.5	1526.4	87.434	2530.8	44.52	
	12:30	2625.9	85.9	1555.2	90.511	2535.4	45.36	
	12:35	2633.5	91.3	1555.2	90.511	2543.0	45.36	
6	12:40	2634.7	96.8	1584.0	93.636	2541.1	46.20	
	12:45	2651.4	102.1	1526.4	87.434	2564.0	44.52	
	12:50	2665.5	107.5	1555.2	90.511	2575.0	45.36	
				1550.4				
	12:55	2785.1	114.0	1872.0	127.544	2657.6	54.60	
	1:00	2799.3	120.6	1900.8	131.198	2668.1	55.44	
	1:05	2803.1	127.3	1929.6	134.899	2668.2	56.28	
	1:10	2810.8	133.9	1900.8	131.198	2679.6	55.44	
	1:15	2808.2	140.6	1929.6	134.899	2673.3	56.28	
	1:20	2819.8	147.2	1900.8	131.198	2688.6	55.44	
FALLOFF				1905.6				
	1:21	2502.0				2502.0		
	1:22	2480.2				2480.2		
	1:23	2462.3				2462.3		
	1:24	2445.7				2445.7		
	1:25	2430.4				2430.4		
	1:30	2331.9				2331.9		
	1:35	2146.4				2146.4		



WEST-TEST, INC.
A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY
Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: TEXACO EXPLORATION AND PRODUCTION, INC.

DATE: FEBRUARY 4, 1997

WELL NAME: VACUUM GRAYBURG SAN ANDRES UNIT NO. 60
LEA COUNTY, NEW MEXICO

WO#: 97-14-0129

PERFS = 4542-4720

PACKER DEPTH = 4447

BHP GAUGE DEPTH = SURFACE ONLY

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)
1	10:00	329.1				329.1		
	10:05	492.5	0.8	230.4	2.643	489.9	6.72	
	10:10	552.3	1.6	230.4	2.643	549.7	6.72	
	10:15	605.8	2.5	259.2	3.287	602.5	7.56	
	10:20	666.9	3.3	230.4	2.643	664.3	6.72	
	10:25	721.7	4.3	288.0	3.994	717.7	8.40	
	10:30	750.9	5.1	230.4	2.643	748.3	6.72	
				244.8				
	10:35	887.4	6.7	460.8	9.528	877.9	13.44	
	10:40	946.0	8.3	460.8	9.528	936.5	13.44	
2	10:45	1023.8	9.8	432.0	8.456	1015.3	12.60	
	10:50	1064.5	11.4	460.8	9.528	1055.0	13.44	
	10:55	1113.0	13.0	460.8	9.528	1103.5	13.44	
	11:00	1157.6	14.6	460.8	9.528	1148.1	13.44	
				456.0				
	11:05	1303.3	16.9	662.4	18.646	1284.7	19.32	
	11:10	1374.8	19.2	662.4	18.646	1356.2	19.32	
	11:15	1418.1	21.5	662.4	18.646	1399.5	19.32	
	11:20	1467.9	23.8	662.4	18.646	1449.3	19.32	
	11:25	1512.5	26.0	633.6	17.174	1495.3	18.48	
3	11:30	1571.2	28.4	691.2	20.174	1551.0	20.16	
				662.4				
	11:35	1688.9	31.4	864.0	30.484	1658.4	25.20	
	11:40	1734.8	34.4	864.0	30.484	1704.3	25.20	
	11:45	1764.1	37.5	892.8	32.390	1731.7	26.04	
	11:50	1803.7	40.0	720.0	21.756	1781.9	21.00	
	11:55	1816.3	43.1	892.8	32.390	1783.9	26.04	
	12:00	1843.0	46.1	864.0	30.484	1812.5	25.20	
				849.6				

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)
5	12:05	1926.1	49.8	1065.6	44.933	1881.2	31.08	
	12:10	1929.7	53.4	1036.8	42.713	1887.0	30.24	
	12:15	1937.3	57.1	1065.6	44.933	1892.4	31.08	
	12:20	1933.3	60.8	1065.6	44.933	1888.4	31.08	
	12:25	1896.0	64.4	1036.8	42.713	1853.3	30.24	
	12:30	1876.7	68.1	1065.6	44.933	1831.8	31.08	
				1056.0				
	12:35	2016.1	72.7	1324.8	67.220	1948.9	38.64	
	12:40	2030.0	77.4	1353.6	69.948	1960.1	39.48	
	12:45	2023.5	82.1	1353.6	69.948	1953.6	39.48	
6	12:50	2029.7	86.8	1353.6	69.948	1959.8	39.48	
	12:55	2029.6	91.5	1353.6	69.948	1959.7	39.48	
	1:00	2025.6	96.2	1353.6	69.948	1955.7	39.48	
				1348.8				
	1:05	2197.2	101.9	1641.6	99.946	2097.3	47.88	
	1:10	2185.5	107.6	1641.6	99.946	2085.6	47.88	
	1:15	2193.1	113.2	1612.8	96.726	2096.4	47.04	
	1:20	2196.8	118.8	1612.8	96.726	2100.1	47.04	
	1:25	2191.6	124.5	1641.6	99.946	2091.7	47.88	
	1:30	2190.1	130.1	1612.8	96.726	2093.4	47.04	
7				1627.2				
	1:35	2389.8	136.9	1958.4	138.528	2251.3	57.12	
	1:40	2382.0	143.6	1929.6	134.783	2247.2	56.28	
	1:45	2392.2	150.3	1929.6	134.783	2257.4	56.28	
	1:50	2397.3	157.1	1958.4	138.528	2258.8	57.12	
	1:55	2401.1	163.8	1929.6	134.783	2266.3	56.28	
	2:00	2402.3	170.6	1958.4	138.528	2263.8	57.12	
				1944.0				
	2:01	1681.4				1681.4		
	2:02	1641.7				1641.7		
8	2:03	1612.3				1612.3		
	2:04	1587.9				1587.9		
	2:05	1567.4				1567.4		
	2:10	1490.6				1490.6		
	2:15	1436.8				1436.8		
FALLOFF								

WEST-TEST, INC.

A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: TEXACO EXPLORATION AND PRODUCTION, INC.

DATE: FEBRUARY 5, 1997

WELL NAME: VACUUM GRAYBURG SAN ANDRES UNIT NO. 62
LEA COUNTY, NEW MEXICO

WO#: 97-14-0130

PERFS = 4394-4755

PACKER DEPTH = 4360

BHP GAUGE DEPTH = 4466

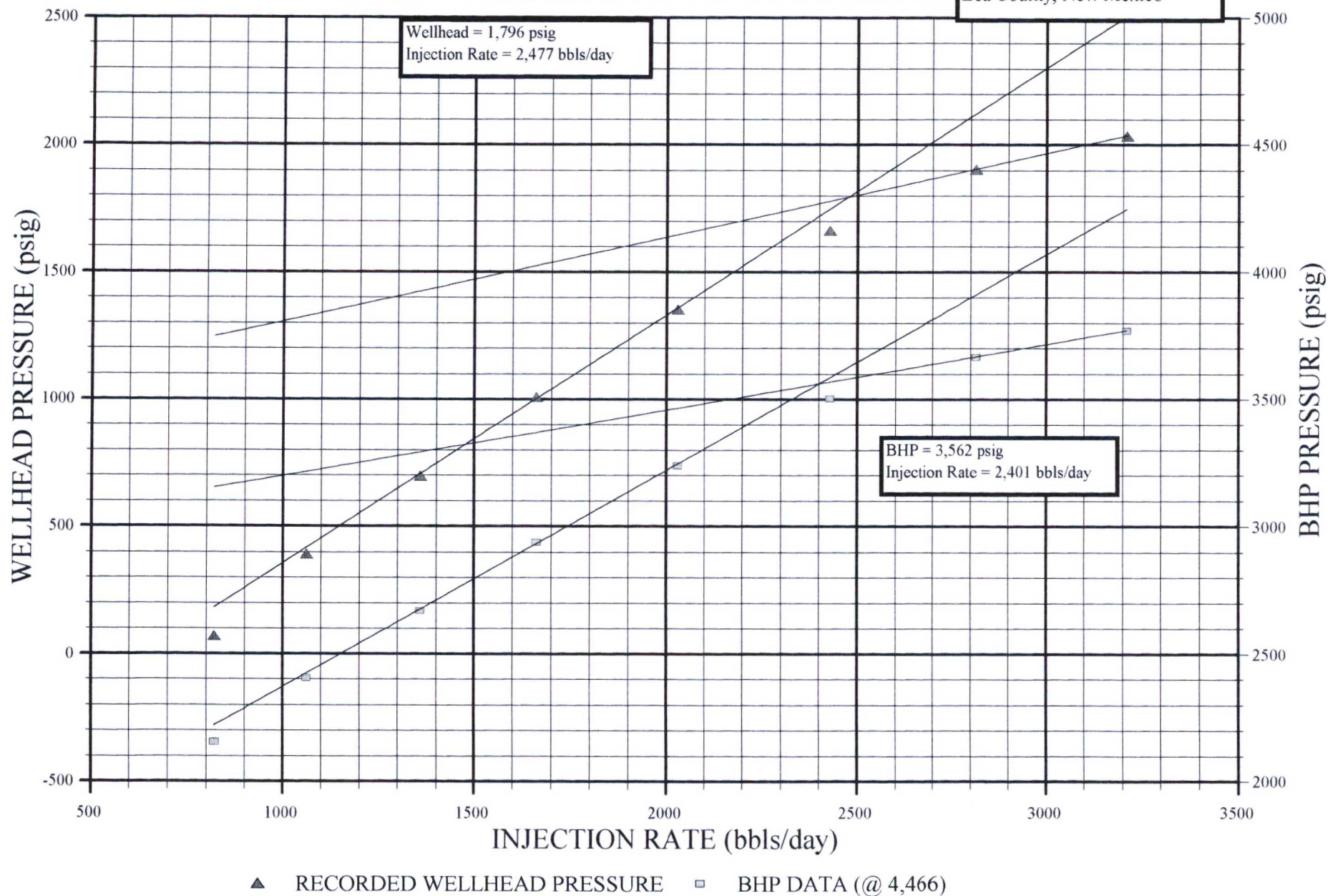
STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
1	9:40	57.2				57.2		2058.6
	9:45	64.7	3.5	1008.0	39.099	25.6	29.40	2091.9
	9:50	67.2	6.5	864.0	29.398	37.8	25.20	2116.1
	9:55	70.9	9.5	864.0	29.398	41.5	25.20	2134.2
	10:00	70.9	12.2	777.6	24.191	46.7	22.68	2146.4
	10:05	72.1	14.8	748.8	22.560	49.5	21.84	2155.4
	10:10	73.3	17.1	662.4	17.982	55.3	19.32	2157.0
				820.8				
	10:15	198.3	20.9	1094.4	45.524	152.8	31.92	2247.7
	10:20	244.3	24.8	1123.2	47.765	196.5	32.76	2290.0
2	10:25	299.2	28.3	1008.0	39.099	260.1	29.40	2326.3
	10:30	332.3	32.0	1065.6	43.332	289.0	31.08	2355.1
	10:35	357.9	35.6	1036.8	41.191	316.7	30.24	2376.2
	10:40	393.6	39.2	1036.8	41.191	352.4	30.24	2406.5
				1060.8				
	10:45	522.7	44.0	1382.4	70.135	452.6	40.32	2491.2
	10:50	569.9	48.7	1353.6	67.456	502.4	39.48	2538.1
	10:55	609.5	53.5	1382.4	70.135	539.4	40.32	2577.4
	11:00	646.6	58.2	1353.6	67.456	579.1	39.48	2610.7
	11:05	674.6	62.9	1353.6	67.456	607.1	39.48	2642.4
3	11:10	702.7	67.5	1324.8	64.825	637.9	38.64	2671.2
				1358.4				
	11:15	830.4	73.3	1670.4	99.536	730.9	48.72	2752.8
	11:20	879.0	79.1	1670.4	99.536	779.5	48.72	2802.7
	11:25	917.3	84.9	1670.4	99.536	817.8	48.72	2842.1
	11:30	949.2	90.6	1641.6	96.385	852.8	47.88	2878.3
	11:35	987.5	96.4	1670.4	99.536	888.0	48.72	2911.6
	11:40	1011.8	102.1	1641.6	96.385	915.4	47.88	2941.9
				1660.8				

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)
5	11:45	1172.9	109.1	2016.0	140.952	1031.9	58.80	3035.6
	11:50	1229.2	116.2	2044.8	144.700	1084.5	59.64	3088.6
	11:55	1267.6	123.3	2044.8	144.700	1122.9	59.64	3134.0
	12:00	1308.5	130.4	2044.8	144.700	1163.8	59.64	3173.3
	12:05	1331.5	137.4	2016.0	140.952	1190.5	58.80	3209.6
	12:10	1357.1	144.4	2016.0	140.952	1216.1	58.80	3242.9
				2030.4				
	12:15	1486.3	152.9	2448.0	201.867	1284.4	71.40	3332.2
	12:20	1546.4	161.4	2448.0	201.867	1344.5	71.40	3379.1
	12:25	1600.1	169.8	2419.2	197.495	1402.6	70.56	3421.5
6	12:30	1637.2	178.2	2419.2	197.495	1439.7	70.56	3453.3
	12:35	1643.6	186.6	2419.2	197.495	1446.1	70.56	3479.0
	12:40	1666.6	195.0	2419.2	197.495	1469.1	70.56	3504.7
				2428.8				
	12:45	1818.8	204.7	2793.6	257.731	1561.1	81.48	3569.8
	12:50	1849.5	214.5	2822.4	262.668	1586.8	82.32	3600.0
	12:55	1871.2	224.3	2822.4	262.668	1608.5	82.32	3621.2
	1:00	1885.2	234.1	2822.4	262.668	1622.5	82.32	3639.4
	1:05	1896.7	243.8	2793.6	257.731	1639.0	81.48	3654.5
	1:10	1906.8	253.6	2822.4	262.668	1644.1	82.32	3668.1
7				2812.8				
	1:15	2001.5	264.8	3225.6	336.274	1665.2	94.08	3702.9
	1:20	1995.1	275.9	3196.8	330.740	1664.4	93.24	3719.6
	1:25	2009.1	287.1	3225.6	336.274	1672.8	94.08	3733.2
	1:30	2021.8	298.2	3196.8	330.740	1691.1	93.24	3746.8
	1:35	2027.0	309.3	3196.8	330.740	1696.3	93.24	3757.4
	1:40	2038.5	320.5	3225.6	336.274	1702.2	94.08	3771.1
				3211.2				
	1:41	1499.6				1499.6		3683.3
	1:42	1471.4				1471.4		3644.0
FALLOFF	1:43	1439.4				1439.4		3610.7
	1:44	1410.0				1410.0		3581.9
	1:45	1384.3				1384.3		3556.2
	1:50	1271.7				1271.7		3441.2
	1:55	1197.4				1197.4		3367.1

STEP RATE INJECTION TEST

TEXACO EXPLORATION AND PRODUCTION IN

Well Name:
Vacuum Grayburg
San Andres Unit No. 62
Lea County, New Mexico



WEST-TEST, INC.

A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY
Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: TEXACO EXPLORATION AND PRODUCTION, INC.

DATE: FEBRUARY 6, 1997

WELL NAME: VACUUM GRAYBURG SAN ANDRES UNIT NO. 63
LEA COUNTY, NEW MEXICO

WO#: 97-14-0131

PERFS = 4484-4709

PACKER DEPTH = 4444

BHP GAUGE DEPTH = 4603

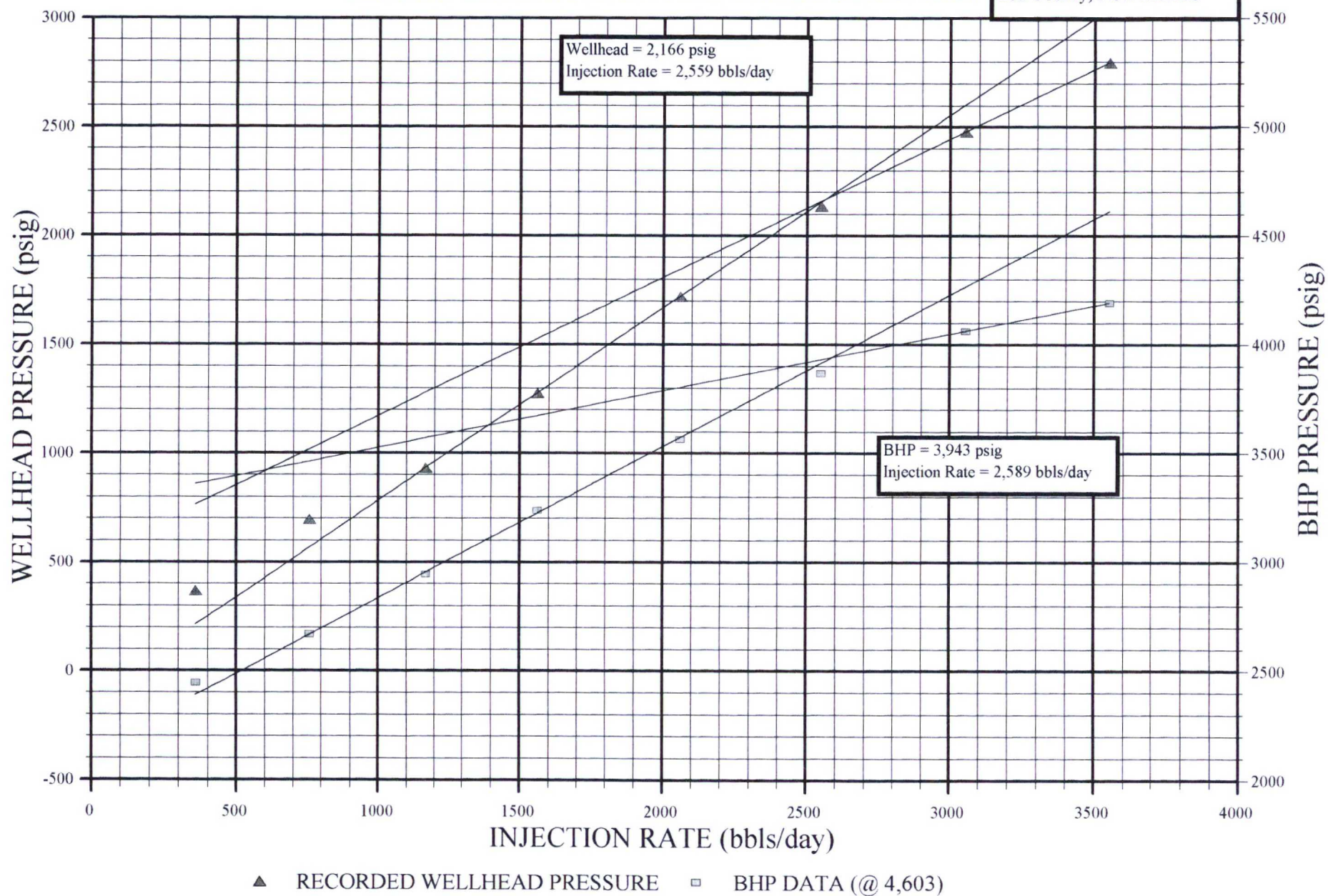
STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
1	9:45	195.1				195.1		2298.8
	9:50	256.4	1.2	345.6	5.562	250.8	10.08	2350.2
	9:55	266.6	2.6	403.2	7.398	259.2	11.76	2380.4
	10:00	299.8	3.8	345.6	5.562	294.2	10.08	2400.1
	10:05	318.9	5.1	374.4	6.450	312.5	10.92	2418.2
	10:10	347.0	6.3	345.6	5.562	341.4	10.08	2433.4
	10:15	372.5	7.5	345.6	5.562	366.9	10.08	2447.0
				360.0				
	10:20	437.7	10.1	748.8	23.252	414.4	21.84	2513.5
	10:25	486.2	12.8	777.6	24.934	461.3	22.68	2552.8
2	10:30	510.5	15.4	748.8	23.252	487.2	21.84	2584.6
	10:35	543.7	18.0	748.8	23.252	520.4	21.84	2617.9
	10:40	575.6	20.7	777.6	24.934	550.7	22.68	2646.6
	10:45	599.9	23.3	748.8	23.252	576.6	21.84	2670.8
				758.4				
	10:50	726.4	27.3	1152.0	51.591	674.8	33.60	2744.9
	10:55	789.1	31.4	1180.8	54.002	735.1	34.44	2796.4
	11:00	808.2	35.5	1180.8	54.002	754.2	34.44	2838.8
	11:05	864.4	39.5	1152.0	51.591	812.8	33.60	2875.1
	11:10	897.7	43.6	1180.8	54.002	843.7	34.44	2913.0
3	11:15	934.7	47.7	1180.8	54.002	880.7	34.44	2947.7
				1171.2				
	11:20	1068.9	53.1	1555.2	89.886	979.0	45.36	3024.9
	11:25	1122.6	58.5	1555.2	89.886	1032.7	45.36	3082.4
	11:30	1172.5	64.0	1584.0	92.989	1079.5	46.20	3123.3
	11:35	1213.4	69.4	1555.2	89.886	1123.5	45.36	3164.2
	11:40	1248.0	74.8	1555.2	89.886	1158.1	45.36	3203.5
	11:45	1279.9	80.2	1555.2	89.886	1190.0	45.36	3239.9
				1560.0				

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)
5	11:50	1494.8	87.4	2073.6	153.048	1341.8	60.48	3330.7
	11:55	1551.1	94.5	2044.8	149.139	1402.0	59.64	3388.2
	12:00	1594.6	101.7	2073.6	153.048	1441.6	60.48	3439.6
	12:05	1644.5	108.8	2044.8	149.139	1495.4	59.64	3486.5
	12:10	1679.0	116.0	2073.6	153.048	1526.0	60.48	3528.9
	12:15	1722.5	123.1	2044.8	149.139	1573.4	59.64	3568.2
				2059.2				
	12:20	1945.1	132.0	2563.2	226.534	1718.6	74.76	3656.0
	12:25	2005.2	140.9	2563.2	226.534	1778.7	74.76	3712.0
	12:30	2039.8	149.8	2563.2	226.534	1813.3	74.76	3758.9
6	12:35	2080.9	158.7	2563.2	226.534	1854.4	74.76	3801.2
	12:40	2111.7	167.4	2505.6	217.206	1894.5	73.08	3837.5
	12:45	2137.3	176.2	2534.4	221.848	1915.5	73.92	3872.3
				2548.8				
	12:50	2374.9	186.8	3052.8	313.024	2061.9	89.04	3938.9
	12:55	2413.4	197.4	3052.8	313.024	2100.4	89.04	3979.8
	1:00	2450.6	208.0	3052.8	313.024	2137.6	89.04	4014.6
	1:05	2455.7	218.6	3052.8	313.024	2142.7	89.04	4035.8
	1:10	2480.1	229.2	3052.8	313.024	2167.1	89.04	4051.0
	1:15	2480.1	239.8	3052.8	313.024	2167.1	89.04	4064.7
7				3052.8				
	1:20	2662.6	252.0	3513.6	406.001	2256.6	102.48	4114.9
	1:25	2721.7	264.3	3542.4	412.180	2309.5	103.32	4139.2
	1:30	2687.0	276.6	3542.4	412.180	2274.8	103.32	4152.0
	1:35	2688.2	289.0	3571.2	418.400	2269.8	104.16	4166.5
	1:40	2667.7	301.4	3571.2	418.400	2249.3	104.16	4178.7
	1:45	2797.5	313.8	3571.2	418.400	2379.1	104.16	4195.4
				3552.0				
	1:46	1863.0				1863.0		4092.1
	1:47	1824.6				1824.6		4055.6
8	1:48	1795.2				1795.2		4025.2
	1:49	1769.6				1769.6		4001.0
	1:50	1746.6				1746.6		3976.8
	1:55	1657.0				1657.0		3884.4
	2:00	1582.8				1582.8		3808.6
FALLOFF								

STEP RATE INJECTION TEST

TEXACO EXPLORATION AND PRODUCTION INC.

Well Name:
Vacuum Grayburg
San Andres Unit No. 63
Lea County, New Mexico



WEST-TEST, INC.

A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: TEXACO EXPLORATION AND PRODUCTION, INC.

DATE: FEBRUARY 7, 1997

WELL NAME: VACUUM GRAYBURG SAN ANDRES UNIT NO. 65
LEA COUNTY, NEW MEXICO

WO#: 97-14-0241

PERFS =

PACKER DEPTH =

BHP GAUGE DEPTH - SURFACE ONLY

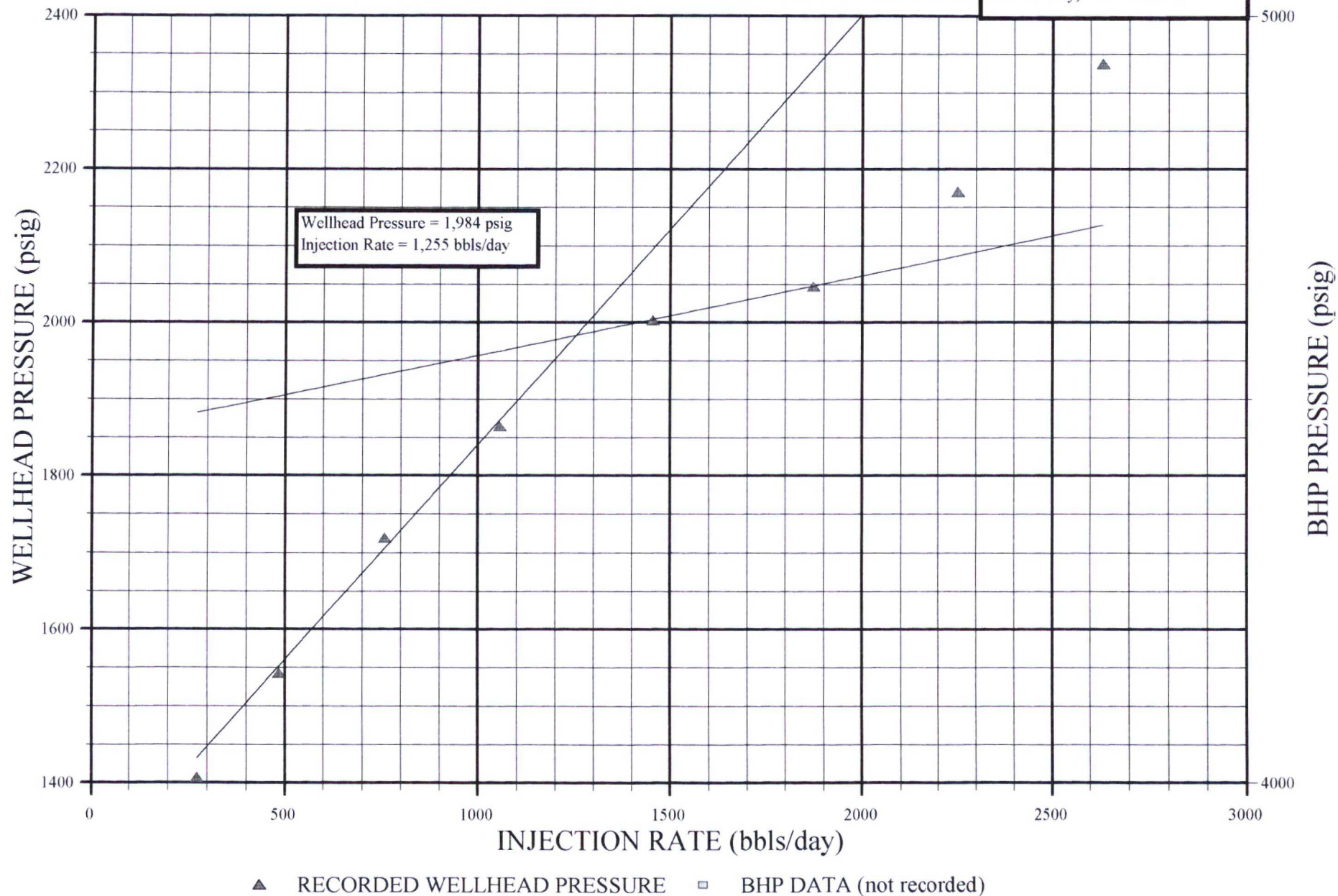
STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
1	9:35	1167.7				1167.7		
	9:40	1281.4	0.9	259.2	3.240	1278.2	7.56	
	9:45	1333.8	1.9	288.0	3.938	1329.9	8.40	
	9:50	1337.6	2.8	259.2	3.240	1334.4	7.56	
	9:55	1384.8	3.8	288.0	3.938	1380.9	8.40	
	10:00	1374.5	4.7	259.2	3.240	1371.3	7.56	
	10:05	1407.6	5.7	288.0	3.938	1403.7	8.40	
				273.6				
	10:10	1490.6	7.4	489.6	10.510	1480.1	14.28	
	10:15	1512.3	9.1	489.6	10.510	1501.8	14.28	
2	10:20	1532.6	10.8	489.6	10.510	1522.1	14.28	
	10:25	1542.8	12.5	489.6	10.510	1532.3	14.28	
	10:30	1532.5	14.1	460.8	9.395	1523.1	13.44	
	10:35	1543.9	15.8	489.6	10.510	1533.4	14.28	
				484.8				
	10:40	1620.6	18.5	777.6	24.733	1595.9	22.68	
	10:45	1649.9	21.1	748.8	23.065	1626.8	21.84	
	10:50	1670.3	23.7	748.8	23.065	1647.2	21.84	
	10:55	1684.3	26.3	748.8	23.065	1661.2	21.84	
	11:00	1705.9	28.9	748.8	23.065	1682.8	21.84	
3	11:05	1719.9	31.6	777.6	24.733	1695.2	22.68	
				758.4				
	11:10	1796.6	35.3	1065.6	44.303	1752.3	31.08	
	11:15	1820.8	38.9	1036.8	42.113	1778.7	30.24	
	11:20	1832.2	42.6	1065.6	44.303	1787.9	31.08	
	11:25	1848.8	46.3	1065.6	44.303	1804.5	31.08	
	11:30	1853.9	49.9	1036.8	42.113	1811.8	30.24	
	11:35	1865.4	53.6	1065.6	44.303	1821.1	31.08	
				1056.0				

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)
5	11:40	1946.0	58.5	1411.2	74.494	1871.5	41.16	
	11:45	1963.9	63.6	1468.8	80.216	1883.7	42.84	
	11:50	1986.9	68.7	1468.8	80.216	1906.7	42.84	
	11:55	1992.0	73.8	1468.8	80.216	1911.8	42.84	
	12:00	1991.9	78.8	1440.0	77.331	1914.6	42.00	
	12:05	2004.7	83.9	1468.8	80.216	1924.5	42.84	
				1454.4				
	12:10	2088.0	90.4	1872.0	125.645	1962.4	54.60	
	12:15	2059.7	96.9	1872.0	125.645	1934.1	54.60	
	12:20	2040.4	103.3	1843.2	122.093	1918.3	53.76	
6	12:25	2037.8	109.8	1872.0	125.645	1912.2	54.60	
	12:30	2041.6	116.3	1872.0	125.645	1916.0	54.60	
	12:35	2048.0	122.9	1900.8	129.245	1918.8	55.44	
				1872.0				
	12:40	2151.8	130.6	2217.6	171.896	1979.9	64.68	
	12:45	2158.1	138.5	2275.2	180.247	1977.9	66.36	
	12:50	2155.4	146.3	2246.4	176.048	1979.4	65.52	
	12:55	2163.0	154.1	2246.4	176.048	1987.0	65.52	
	1:00	2162.8	162.0	2275.2	180.247	1982.6	66.36	
	1:05	2171.7	169.8	2246.4	176.048	1995.7	65.52	
7				2251.2				
	1:10	2289.6	179.0	2649.6	238.927	2050.7	77.28	
	1:15	2295.9	188.1	2620.8	234.144	2061.8	76.44	
	1:20	2307.3	197.2	2620.8	234.144	2073.2	76.44	
	1:25	2321.2	206.3	2620.4	234.078	2087.1	76.43	
	1:30	2328.8	215.4	2620.4	234.078	2094.7	76.43	
	1:35	2338.9	224.6	2649.6	238.927	2100.0	77.28	
				2630.4				
	1:36	1920.9				1920.9		
	1:37	1896.6				1896.6		
8	1:38	1887.6				1887.6		
	1:39	1879.9				1879.9		
	1:40	1872.2				1872.2		
	1:45	1841.3				1841.3		
	1:50	1815.6				1815.6		
FALLOFF								

STEP RATE INJECTION TEST

TEXACO EXPLORATION AND PRODUCTION INC.

Well Name:
Vacuum Grayburg
San Andres Unit No. 65
Lea County, New Mexico



WEST-TEST, INC.
A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY
Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: TEXACO EXPLORATION AND PRODUCTION INC.

DATE: FEBRUARY 12, 1997

WELL NAME: VACUUM GRAYBURG SAN ANDRES UNIT NO. 67
LEA COUNTY, NEW MEXICO

WO#: 97-14-0290

PERFS = 4356-4755

PACKER DEPTH =

BHP GAUGE DEPTH = SURFACE ONLY

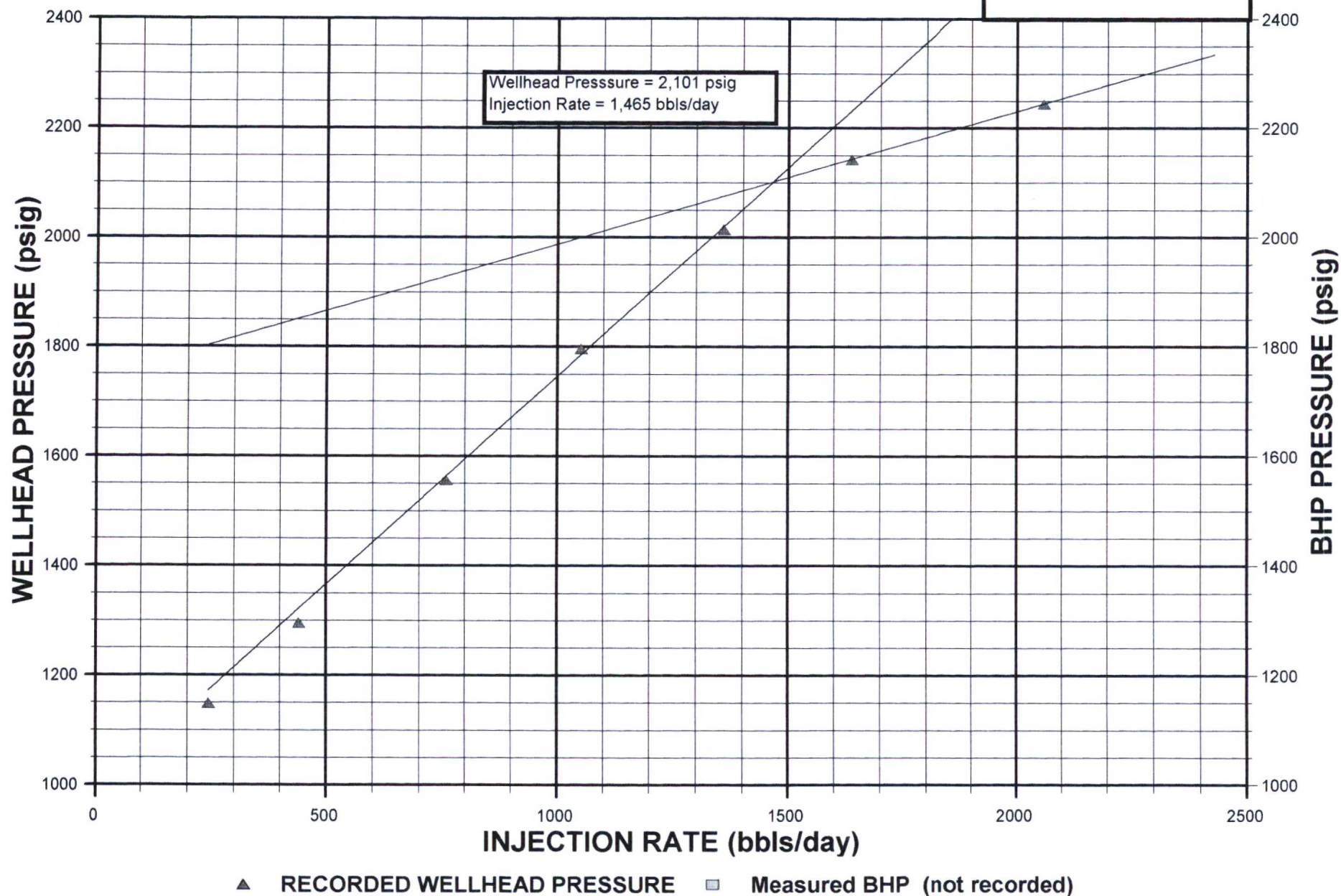
STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
1	9:30	956.7				956.7		
	9:35	1032.1	0.8	230.4	2.600	1029.5	6.72	
	9:40	1051.3	1.7	259.2	3.233	1048.1	7.56	
	9:45	1084.5	2.5	230.4	2.600	1081.9	6.72	
	9:50	1089.6	3.3	230.4	2.600	1087.0	6.72	
	9:55	1128.0	4.2	259.2	3.233	1124.8	7.56	
	10:00	1149.7	5.1	259.2	3.233	1146.5	7.56	
				244.8				
	10:05	1210.0	6.7	460.8	9.374	1200.6	13.44	
	10:10	1227.8	8.2	432.0	8.319	1219.5	12.60	
2	10:15	1254.7	9.7	432.0	8.319	1246.4	12.60	
	10:20	1293.0	11.3	460.8	9.374	1283.6	13.44	
	10:25	1313.5	12.8	432.0	8.319	1305.2	12.60	
	10:30	1296.8	14.3	432.0	8.319	1288.5	12.60	
				441.6				
	10:35	1405.5	17.0	777.6	24.679	1380.8	22.68	
	10:40	1446.4	19.6	748.8	23.015	1423.4	21.84	
	10:45	1480.9	22.3	777.6	24.679	1456.2	22.68	
	10:50	1502.6	24.9	748.8	23.015	1479.6	21.84	
	10:55	1535.8	27.5	748.8	23.015	1512.8	21.84	
3	11:00	1557.5	30.1	748.8	23.015	1534.5	21.84	
				758.4				
	11:05	1645.7	33.7	1036.8	42.021	1603.7	30.24	
	11:10	1693.0	37.5	1094.4	46.441	1646.6	31.92	
	11:15	1724.9	41.1	1036.8	42.021	1682.9	30.24	
	11:20	1747.9	44.8	1065.6	44.206	1703.7	31.08	
	11:25	1774.7	48.4	1036.8	42.021	1732.7	30.24	
	11:30	1797.7	52.0	1036.8	42.021	1755.7	30.24	
				1051.2				

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)
5	11:35	1882.0	56.7	1353.6	68.815	1813.2	39.48	
	11:40	1916.7	61.5	1382.4	71.549	1845.2	40.32	
	11:45	1947.3	66.2	1353.6	68.815	1878.5	39.48	
	11:50	1969.1	70.9	1353.6	68.815	1900.3	39.48	
	11:55	1989.5	75.6	1353.6	68.815	1920.7	39.48	
	12:00	2015.1	80.3	1353.6	68.815	1946.3	39.48	
				1358.4				
	12:05	2099.8	86.0	1641.6	98.327	2001.5	47.88	
	12:10	2124.2	91.6	1612.8	95.160	2029.0	47.04	
	12:15	2139.6	97.3	1641.6	98.327	2041.3	47.88	
6	12:20	2162.7	102.9	1612.8	95.160	2067.5	47.04	
	12:25	2157.6	108.7	1670.4	101.542	2056.1	48.72	
	12:30	2143.4	114.4	1641.6	98.327	2045.1	47.88	
				1636.8				
	12:35	2219.2	121.5	2044.8	147.616	2071.6	59.64	
	12:40	2241.1	128.6	2044.8	147.616	2093.5	59.64	
	12:45	2250.1	135.8	2073.6	151.485	2098.6	60.48	
	12:50	2230.8	143.0	2073.6	151.485	2079.3	60.48	
	12:55	2242.3	150.2	2073.6	151.485	2090.8	60.48	
	1:00	2246.2	157.3	2044.8	147.616	2098.6	59.64	
7				2059.2				
	1:05	2348.9	165.9	2476.8	210.439	2138.5	72.24	
	1:10	2346.3	174.3	2419.2	201.475	2144.8	70.56	
	1:15	2368.1	182.7	2419.2	201.475	2166.6	70.56	
	1:20	2384.8	191.0	2390.4	197.060	2187.7	69.72	
	1:25	2405.3	199.4	2419.2	201.475	2203.8	70.56	
	1:30	2413.0	207.9	2448.0	205.935	2207.1	71.40	
				2428.8				
	1:31	2052.1				2052.1		
	1:32	2049.5				2049.5		
FALLOFF	1:33	2043.1				2043.1		
	1:34	2037.9				2037.9		
	1:35	2031.5				2031.5		
	1:40	2005.9				2005.9		
	1:45	1984.1				1984.1		

STEP RATE INJECTION TEST

TEXACO EXPLORATION AND PRODUCTION INC.

Well Name:
Vacuum Grayburg
San Andres Unit No. 67
Lea County, New Mexico



WEST - TEST, INC.
A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY
Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: TEXACO EXPLORATION AND PRODUCTION, INC.

DATE: FEBRUARY 10, 1997

WELL NAME: VACUUM GRAYBURG SAN ANDRES UNIT NO. 146
LEA COUNTY, NEW MEXICO

WO#: 97-14-0242

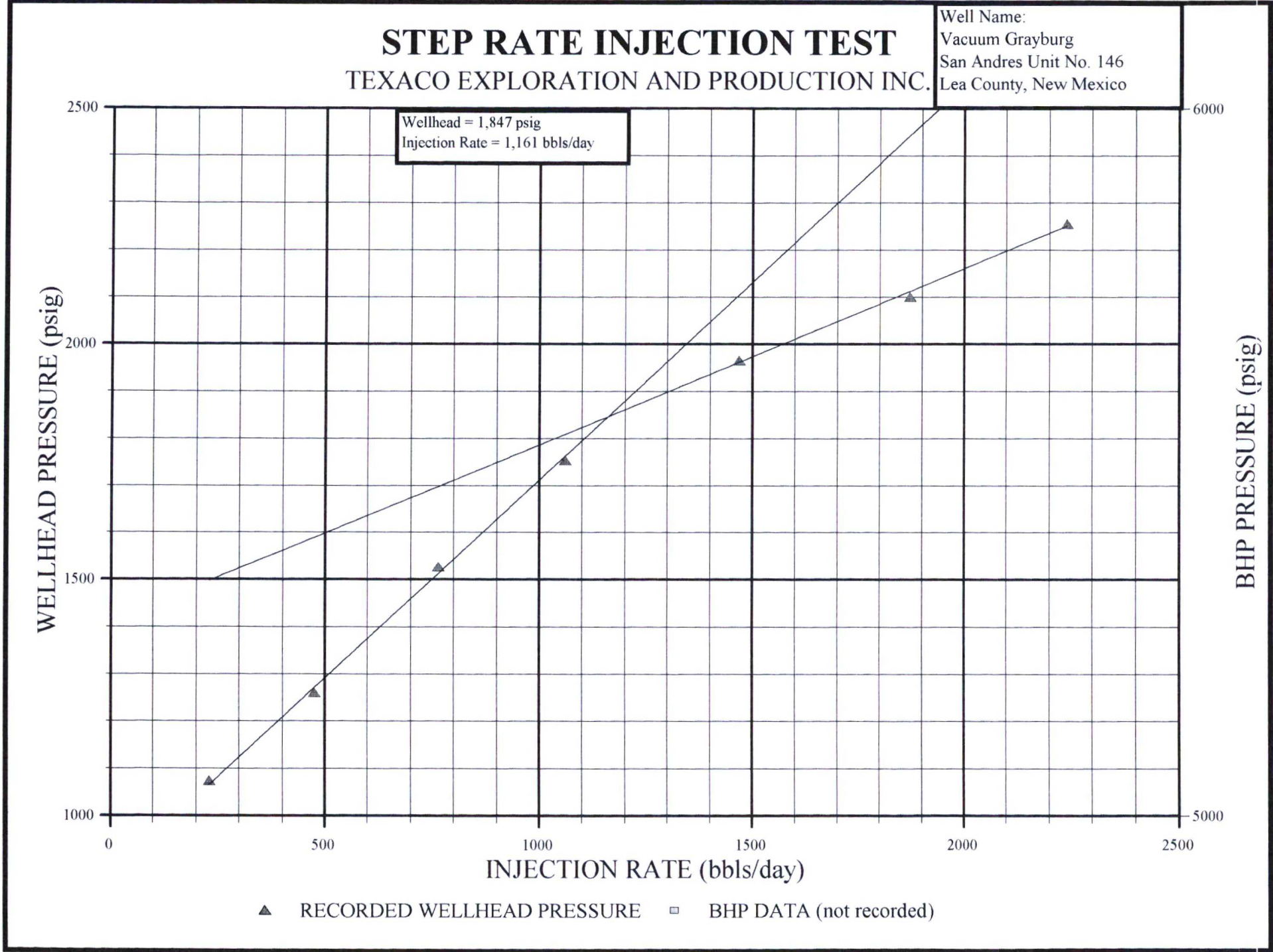
PERFS = 4363-4772

PACKER DEPTH =

BHP GAUGE DEPTH = SURFACE ONLY

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)
1	10:00	880.6				880.6		
	10:05	1033.9	0.8	230.4	2.568	1031.3	6.72	
	10:10	1035.0	1.6	230.4	2.568	1032.4	6.72	
	10:15	1059.2	2.4	230.4	2.568	1056.6	6.72	
	10:20	1066.7	3.2	230.4	2.568	1064.1	6.72	
	10:25	1065.3	4.0	230.4	2.568	1062.7	6.72	
	10:30	1075.4	4.8	230.4	2.568	1072.8	6.72	
				230.4				
	10:35	1186.5	6.5	489.6	10.358	1176.1	14.28	
	10:40	1250.3	8.2	489.6	10.358	1239.9	14.28	
2	10:45	1236.1	9.8	460.8	9.259	1226.8	13.44	
	10:50	1237.2	11.4	460.8	9.259	1227.9	13.44	
	10:55	1224.3	13.1	489.6	10.358	1213.9	14.28	
	11:00	1262.6	14.7	460.8	9.259	1253.3	13.44	
				475.2				
	11:05	1430.1	17.4	777.6	24.376	1405.7	22.68	
	11:10	1458.1	20.0	748.8	22.732	1435.4	21.84	
	11:15	1487.3	22.7	777.6	24.376	1462.9	22.68	
	11:20	1501.2	25.3	748.8	22.732	1478.5	21.84	
	11:25	1515.1	28.0	777.6	24.376	1490.7	22.68	
3	11:30	1528.9	30.6	748.8	22.732	1506.2	21.84	
				763.2				
	11:35	1682.3	34.3	1065.6	43.662	1638.6	31.08	
	11:40	1703.8	37.9	1036.8	41.504	1662.3	30.24	
	11:45	1731.8	41.6	1065.6	43.662	1688.1	31.08	
	11:50	1745.7	45.3	1065.6	43.662	1702.0	31.08	
	11:55	1755.7	49.0	1065.6	43.662	1712.0	31.08	
	12:00	1754.2	52.7	1065.6	43.662	1710.5	31.08	
				1060.8				

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)
5	12:05	1946.1	57.8	1468.8	79.057	1867.0	42.84	
	12:10	1967.7	62.9	1468.8	79.057	1888.6	42.84	
	12:15	1974.0	68.0	1468.8	79.057	1894.9	42.84	
	12:20	1982.7	73.1	1468.8	79.057	1903.6	42.84	
	12:25	1969.8	78.2	1468.8	79.057	1890.7	42.84	
	12:30	1967.1	83.3	1468.8	79.057	1888.0	42.84	
				1468.8				
	12:35	2138.6	89.8	1872.0	123.829	2014.8	54.60	
	12:40	2129.5	96.2	1843.2	120.328	2009.2	53.76	
	12:45	2089.6	102.7	1872.0	123.829	1965.8	54.60	
6	12:50	2092.1	109.2	1872.0	123.829	1968.3	54.60	
	12:55	2095.8	115.8	1900.8	127.377	1968.4	55.44	
	1:00	2100.8	122.3	1872.0	123.829	1977.0	54.60	
				1872.0				
	1:05	2272.3	130.1	2246.4	173.504	2098.8	65.52	
	1:10	2246.6	137.9	2246.4	173.504	2073.1	65.52	
	1:15	2251.7	145.7	2246.4	173.504	2078.2	65.52	
	1:20	2245.2	153.4	2217.6	169.411	2075.8	64.68	
	1:25	2257.9	161.3	2275.2	177.641	2080.3	66.36	
	1:30	2256.6	169.0	2217.6	169.411	2087.2	64.68	
FALLOFF				2241.6				
	1:31	1699.5				1699.5		
	1:32	1654.6				1654.6		
	1:33	1618.8				1618.8		
	1:34	1589.3				1589.3		
	1:35	1563.7				1563.7		
	1:40	1466.3				1466.3		
	1:45	1394.6				1394.6		



WEST-TEST, INC.

A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: TEXACO EXPLORATION AND PRODUCTION INC.

DATE: FEBRUARY 11, 1997

WELL NAME: VACUUM GRAYBURG SAN ANDRES UNIT NO. 147
LEA COUNTY, NEW MEXICO

WO#: 97-14-0243

PERFS = 4308-4720

PACKER DEPTH =

BHP GAUGE DEPTH = 4200

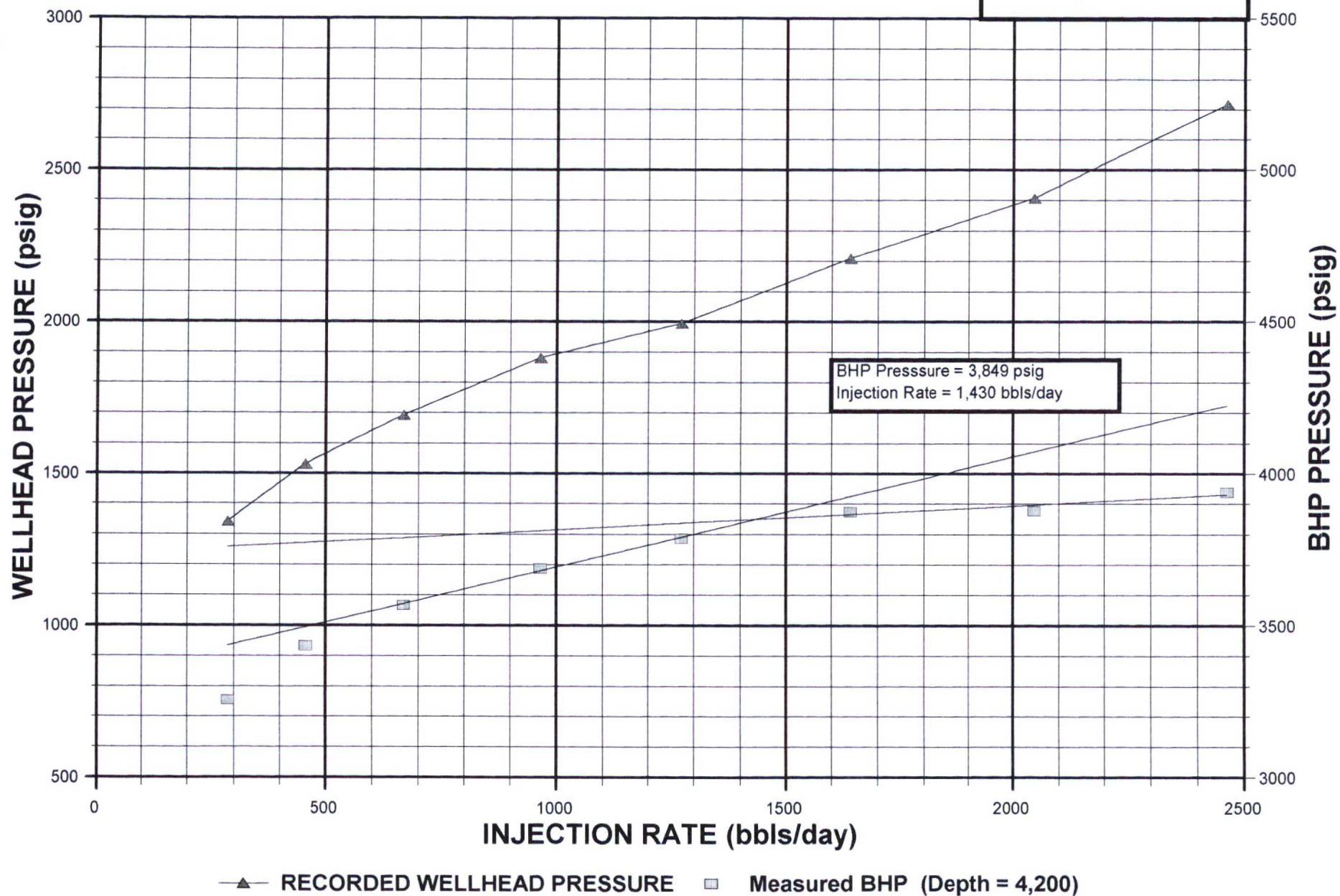
STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
1	10:30	1025.8				1025.8		2903.4
	10:35	1371.1	1.0	288.0	3.622	1367.5	8.40	3243.7
	10:40	1374.8	2.0	288.0	3.622	1371.2	8.40	3252.8
	10:45	1335.0	3.0	288.0	3.622	1331.4	8.40	3234.7
	10:50	1334.8	4.0	288.0	3.622	1331.2	8.40	3240.8
	10:55	1344.8	5.0	288.0	3.622	1341.2	8.40	3249.9
	11:00	1343.4	6.0	288.0	3.622	1339.8	8.40	3255.9
				288.0				
	11:05	1540.9	7.5	432.0	7.669	1533.2	12.60	3420.9
	11:10	1491.4	9.1	460.8	8.642	1482.8	13.44	3417.9
2	11:15	1501.4	10.7	460.8	8.642	1492.8	13.44	3413.3
	11:20	1514.0	12.3	460.8	8.642	1505.4	13.44	3430.0
	11:25	1516.4	13.9	460.8	8.642	1507.8	13.44	3428.5
	11:30	1532.8	15.5	460.8	8.642	1524.2	13.44	3434.6
				456.0				
	11:35	1691.3	17.8	662.4	16.911	1674.4	19.32	3570.8
	11:40	1691.1	20.1	662.4	16.911	1674.2	19.32	3561.8
	11:45	1690.9	22.4	662.4	16.911	1674.0	19.32	3566.3
	11:50	1685.6	24.7	662.4	16.911	1668.7	19.32	3560.3
	11:55	1672.6	27.1	691.2	18.296	1654.3	20.16	3557.3
3	12:00	1694.2	29.4	662.4	16.911	1677.3	19.32	3567.9
				667.2				
	12:05	1929.6	32.7	950.4	32.978	1896.6	27.72	3737.4
	12:10	1929.5	36.1	979.2	34.850	1894.6	28.56	3737.5
	12:15	1878.1	39.5	979.2	34.850	1843.2	28.56	3678.5
	12:20	1883.1	42.8	950.4	32.978	1850.1	27.72	3689.1
	12:25	1890.6	46.2	979.2	34.850	1855.7	28.56	3686.1
	12:30	1882.7	49.5	950.4	32.978	1849.7	27.72	3689.1
				964.8				

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)
5	12:35	2072.2	53.8	1238.4	53.813	2018.4	36.12	3808.7
	12:40	2069.4	58.2	1267.2	56.151	2013.2	36.96	3817.8
	12:45	2046.2	62.7	1296.0	58.535	1987.7	37.80	3816.3
	12:50	2001.2	67.1	1267.2	56.151	1945.0	36.96	3784.6
	12:55	2003.6	71.5	1267.2	56.151	1947.4	36.96	3798.2
	1:00	1995.7	76.0	1296.0	58.535	1937.2	37.80	3787.6
				1272.0				
	1:05	2281.3	82.0	1728.0	99.667	2181.6	50.40	3941.9
	1:10	2277.2	87.4	1555.2	82.016	2195.2	45.36	3946.5
	1:15	2234.8	93.0	1612.8	87.724	2147.1	47.04	3883.0
6	1:20	2219.3	98.7	1641.6	90.644	2128.7	47.88	3890.5
	1:25	2230.7	104.5	1670.4	93.608	2137.1	48.72	3890.0
	1:30	2210.1	110.2	1641.6	90.644	2119.5	47.88	3875.4
				1641.6				
	1:35	2489.1	117.3	2044.8	136.081	2353.0	59.64	3929.8
	1:40	2454.4	124.5	2073.6	139.648	2314.8	60.48	3901.1
	1:45	2412.0	131.6	2044.8	136.081	2275.9	59.64	3886.0
	1:50	2410.6	138.7	2044.8	136.081	2274.5	59.64	3878.4
	1:55	2416.9	145.8	2044.8	136.081	2280.8	59.64	3881.4
	2:00	2409.1	152.8	2016.0	132.557	2276.5	58.80	3879.9
7				2044.8				
	2:05	2749.5	161.4	2476.8	193.996	2555.5	72.24	3957.1
	2:10	2746.8	169.9	2448.0	189.843	2557.0	71.40	3963.1
	2:15	2737.7	178.4	2448.0	189.843	2547.9	71.40	3952.5
	2:20	2735.1	187.0	2476.8	193.996	2541.1	72.24	3951.0
	2:25	2723.5	195.5	2448.0	189.843	2533.7	71.40	3932.8
	2:30	2718.3	204.1	2476.8	193.996	2524.3	72.24	3940.4
				2462.4				
	2:31	1563.6				1563.6		3596.9
	2:32	1525.2				1525.2		3559.1
8	2:33	1497.0				1497.0		3531.9
	2:34	1474.0				1474.0		3507.6
	2:35	1453.5				1453.5		3486.4
	2:40	1375.3				1375.3		3407.7
FALLOFF	2:31	1563.6				1563.6		3596.9
	2:32	1525.2				1525.2		3559.1
	2:33	1497.0				1497.0		3531.9
	2:34	1474.0				1474.0		3507.6
	2:35	1453.5				1453.5		3486.4
	2:40	1375.3				1375.3		3407.7

STEP RATE INJECTION TEST

TEXACO EXPLORATION AND PRODUCTION INC.

Well Name:
Vacuum Grayburg
San Andres Unit No. 147
Lea County, New Mexico





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

April 3, 1997

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:

Texaco E & P	North Vacuum Abo West Unit #2		
Operator	Lease & Well No.	Unit	S-T-R

and my recommendations are as follows:

OK

Very truly yours

Jerry Sexton
Jerry Sexton
Supervisor, District I

/bp

*Jerry says
his "OK" covers
all wells*



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
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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:

Texaco E & P	North Vacuum Abo West Unit #4		
Operator	Lease & Well No.	Unit	S-T-R

and my recommendations are as follows:

Very truly yours

Jerry Sexton
Supervisor, District I

/bp



STATE OF NEW MEXICO
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OIL CONSERVATION DIVISION
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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:

Texaco E & P	North Vacuum Abo West Unit #6		
Operator	Lease & Well No.	Unit	S-T-R

and my recommendations are as follows:

Very truly yours

Jerry Sexton
Supervisor, District I

/bp



STATE OF NEW MEXICO
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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:

Texaco E & P	North Vacuum Abo West Unit #7		
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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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:

Texaco E & P	North Vacuum Abo West Unit #10		
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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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:

Texaco E & P	North Vacuum Abo West Unit #11		
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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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:

Texaco E & P	North Vacuum Abo West Unit #12		
Operator	Lease & Well No.	Unit	S-T-R

and my recommendations are as follows:

Very truly yours

Jerry Sexton
Supervisor, District I

/bp



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
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April 3, 1997

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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:

Texaco E & P	North Vacuum Abo West Unit #16		
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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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:

Texaco E & P	North Vacuum Abo West Unit #17		
Operator	Lease & Well No.	Unit	S-T-R

and my recommendations are as follows:

Very truly yours

Jerry Sexton
Supervisor, District I

/bp



STATE OF NEW MEXICO
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April 3, 1997

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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:

Texaco E & P	North Vacuum Abo West Unit #18		
Operator	Lease & Well No.	Unit	S-T-R

and my recommendations are as follows:

Very truly yours

Jerry Sexton
Supervisor, District I

/bp



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

April 3, 1997

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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:

Texaco E & P	North Vacuum Abo West Unit #21		
Operator	Lease & Well No.	Unit	S-T-R

and my recommendations are as follows:

Very truly yours

Jerry Sexton
Supervisor, District I

/bp



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

April 3, 1997

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P.O. BOX 2088
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RE: APPLICATION FOR PRESSURE LIMIT INCREASE FOR DISPOSAL & INJECTION WELLS

Gentlemen:

I have examined the step rate test for the:

Texaco E & P	North Vacuum Abo West Unit #22		
Operator	Lease & Well No.	Unit	S-T-R

and my recommendations are as follows:

Very truly yours

Jerry Sexton
Supervisor, District I

/bp



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

April 3, 1997

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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:

Texaco E & P	North Vacuum Abo West Unit #25		
Operator	Lease & Well No.	Unit	S-T-R

and my recommendations are as follows:

Very truly yours

Jerry Sexton
Supervisor, District I

/bp