



NEW MEXICO ENERGY, MINERALS  
& NATURAL RESOURCES DEPARTMENT

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

January 21, 1997

CF 3345  
R-3008

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

Attn: Mr. James Anderson

**RE: Injection Pressure Increase,  
West Vacuum Unit Well No.56  
Lea County, New Mexico**

Dear Mr. Anderson:

Reference is made to your request dated December 11, 1996 to increase the surface injection pressure on the above referenced well. This request is based on a step rate test conducted on December 3, 1996. 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:

<i>Well and Location</i>	<i>Maximum Surface Injection Pressure</i>
West Vacuum Unit Well No.56	1806 PSIG
Located in Township 17 South, Range 34 East, Lea 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

cc: Oil Conservation Division - Hobbs  
Files: Case No.3345; PSI-X 2nd QTR-97 ✓

3rd



Texaco E & P

205 E. Bender Blvd.  
Hobbs NM 88240  
505 393 7191

PSI-X N/R  
OIL FIELD DIVISION  
RECEIVED

06 DE 11 AM 8 52

December 11, 1996

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.  
West Vacuum 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>Well No.</u>	<u>Observed Surface Parting Pressure</u>	<u>Requested Permitted Injection Pressure</u>
West Vacuum Unit No. 56	1856 psig	1800 psig

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) 397-0420.

Yours very truly,

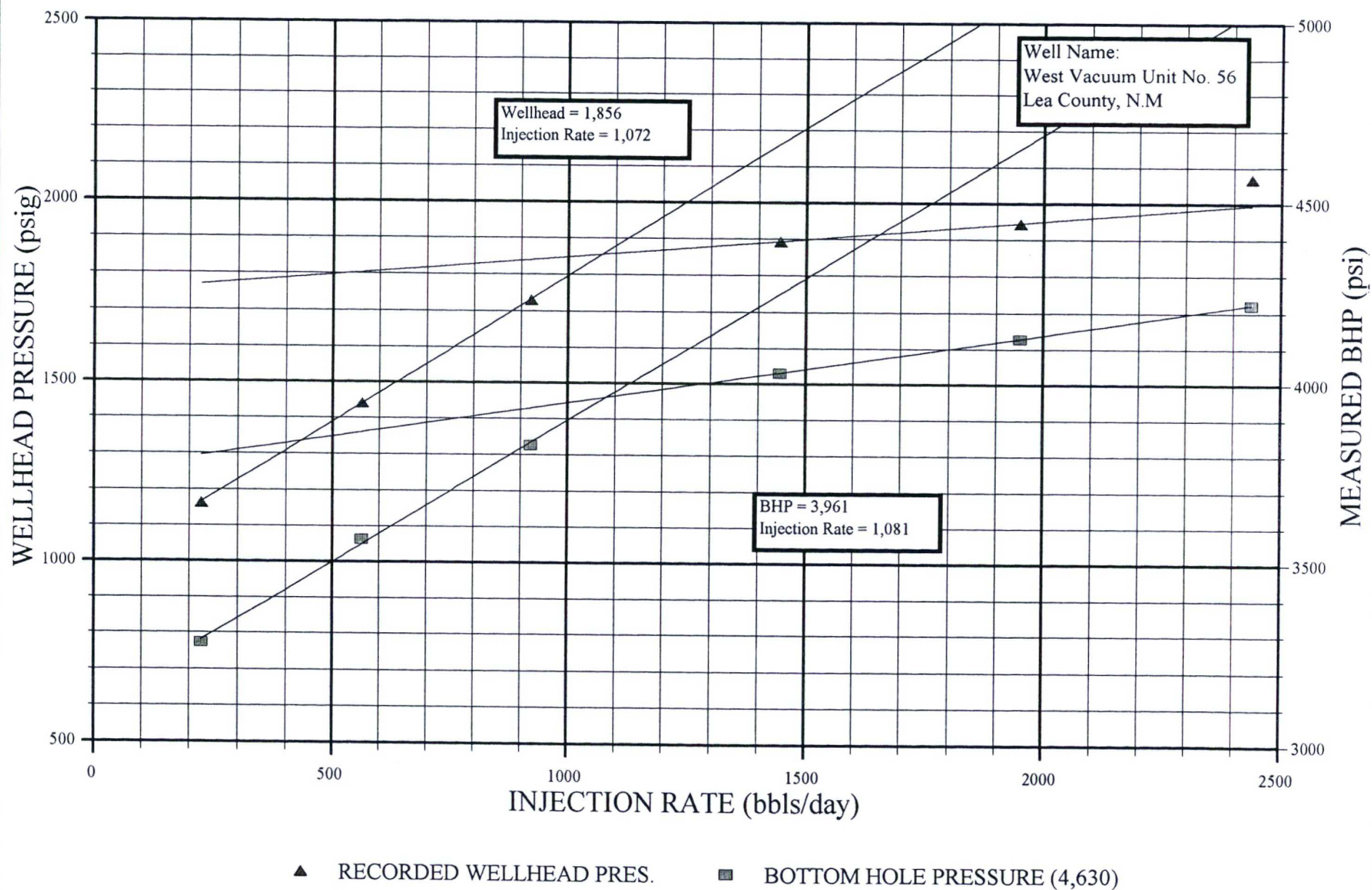
James Anderson  
Production Engineer

attachments  
cc: Mr. Jerry Sexton  
Hobbs NMOCD

R. ~~4234~~ 3008  
CASE ~~4234~~ 3395

# STEP RATE INJECTION TEST

TEXACO EXPLORATION AND PRODUCTION





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

**STEP RATE INJECTION TEST**

CLIENT: TEXACO EXPLORATION AND PRODUCTION

DATE: DECEMBER 3, 1996

WELL NAME: WEST VACUUM UNIT NO. 56  
LEA COUNTY, NEW MEXICO

WO#: 96-14-1580

PERFS. = 4560-4698

PACKER DEPTH = 4514

BHP GAUGE DEPTH = 4630

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	975.9				975.9		3084.6
	10:10	1069.7	0.9	259.2	1.231	1068.5	7.56	3176.9
	10:15	1102.7	1.7	230.4	0.990	1101.7	6.72	3207.1
	10:20	1116.6	2.5	230.4	0.990	1115.6	6.72	3229.8
	10:25	1131.8	3.2	201.6	0.773	1131.0	5.88	3247.9
	10:30	1148.2	4.0	230.4	0.990	1147.2	6.72	3261.5
	10:35	1164.7	4.7	201.6	0.773	1163.9	5.88	3275.1
				225.6				
	10:40	1277.5	6.7	576.0	5.393	1272.1	16.80	3385.6
	10:45	1311.7	8.6	547.2	4.905	1306.8	15.96	3432.5
2	10:50	1354.7	10.5	547.2	4.905	1349.8	15.96	3467.3
	10:55	1389.0	12.4	547.2	4.905	1384.1	15.96	3506.7
	11:00	1415.6	14.4	576.0	5.393	1410.2	16.80	3538.5
	11:05	1443.4	16.4	576.0	5.393	1438.0	16.80	3564.2
				561.6				
	11:10	1552.4	19.4	864.0	11.419	1541.0	25.20	3661.1
	11:15	1596.8	22.5	892.8	12.133	1584.7	26.04	3706.5
	11:20	1641.1	25.8	950.4	13.621	1627.5	27.72	3747.4
	11:25	1681.7	29.0	921.6	12.867	1668.8	26.88	3779.2
	11:30	1705.7	32.3	950.4	13.621	1692.1	27.72	3804.9
3	11:35	1732.3	35.6	950.4	13.621	1718.7	27.72	3827.6
				921.6				
	11:40	1826.1	40.6	1440.0	29.380	1796.7	42.00	3912.4
	11:45	1861.6	45.7	1468.8	30.477	1831.1	42.84	3951.8
	11:50	1875.6	50.8	1468.8	30.477	1845.1	42.84	3974.6
	11:55	1902.2	55.7	1411.2	28.303	1873.9	41.16	3997.3
	12:00	1898.3	60.7	1440.0	29.380	1868.9	42.00	4014.0
	12:05	1894.5	65.7	1440.0	29.380	1865.1	42.00	4030.7
				1444.8				

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	12:10	1940.1	72.3	1900.8	49.104	1891.0	55.44	4079.4
	12:15	1935.1	79.1	1958.4	51.892	1883.2	57.12	4096.2
	12:20	1940.1	86.0	1987.2	53.313	1886.8	57.96	4102.3
	12:25	1943.9	92.7	1929.6	50.490	1893.4	56.28	4111.5
	12:30	1942.6	99.5	1958.4	51.892	1890.7	57.12	4120.6
	12:35	1946.4	106.3	1958.4	51.892	1894.5	57.12	4129.8
				1948.8				
	12:40	2012.4	114.7	2419.2	76.715	1935.7	70.56	4164.7
	12:45	2025.1	123.3	2476.8	80.128	1945.0	72.24	4183.1
	12:50	2040.3	131.7	2419.2	76.715	1963.6	70.56	4195.2
6	12:55	2049.2	140.1	2419.2	76.715	1972.5	70.56	4205.9
	1:00	2059.4	148.6	2448.0	78.413	1981.0	71.40	4215.1
	1:05	2069.6	157.1	2448.0	78.413	1991.2	71.40	4222.7
				2438.4				
FALLOFF	1:06	1923.6				1923.6		4192.3
	1:07	1927.4				1927.4		4175.6
	1:08	1912.2				1912.2		4161.9
	1:09	1900.7				1900.7		4149.7
	1:10	1890.6				1890.6		4137.6
	1:15	1843.7				1843.7		4088.9
	1:20	1807.0				1807.0		4050.8