

WEST-TEST, INC.

A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: TEXACO EXPLORATION AND PRODUCTION

DATE: DECEMBER 9, 1996

WELL NAME: CENTRAL VACUUM UNIT NO. 73  
LEA COUNTY, NEW MEXICO

WO#: 96-14-1584

PERFS = 4368-4712

TUBING DEPTH = 4300

BHP GAUGE DEPTH = 4250

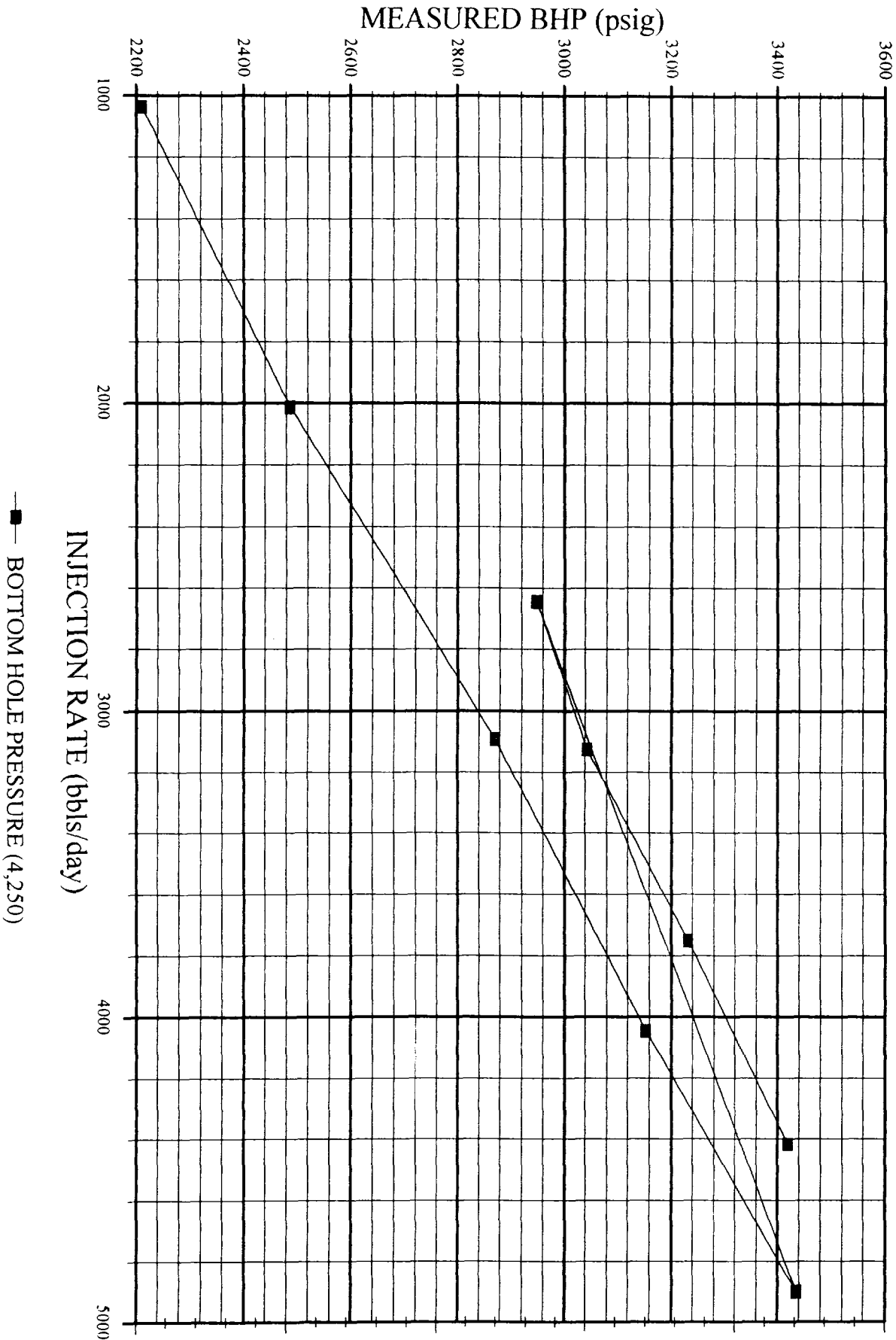
STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
	9:10	78.2				78.2		1996.5
	9:15	329.3	3.5	1008.0	37.208	292.1	29.40	2137.1
	9:20	345.7	7.1	1036.8	39.199	306.5	30.24	2168.8
	9:25	369.7	10.7	1036.8	39.199	330.5	30.24	2184.0
	9:30	388.6	14.3	1036.8	39.199	349.4	30.24	2197.6
	9:35	377.1	18.0	1065.6	41.237	335.9	31.08	2206.7
1	9:40	397.3	21.6	1036.8	39.199	358.1	30.24	2211.2
				1036.8				
	9:45	841.6	28.6	2016.0	134.135	707.5	58.80	2370.0
	9:50	882.1	35.6	2016.0	134.135	748.0	58.80	2407.7
	9:55	916.3	42.6	2016.0	134.135	782.2	58.80	2438.0
	10:00	936.6	49.6	2016.0	134.135	802.5	58.80	2457.6
	10:05	953.1	56.6	2016.0	134.135	819.0	58.80	2474.2
2	10:10	964.4	63.5	1987.2	130.611	833.8	57.96	2487.8
				2011.2				
	10:15	1665.3	74.3	3110.4	299.188	1366.1	90.72	2697.8
	10:20	1662.8	84.9	3052.8	289.019	1373.8	89.04	
	10:25	1727.4	95.6	3081.6	294.083	1433.3	89.88	2814.1
	10:30	1748.9	106.4	3110.4	299.188	1449.7	90.72	2830.7
	10:35	1772.9	117.1	3081.6	294.083	1478.8	89.88	2853.4
3	10:40	1758.9	127.9	3110.4	299.188	1459.7	90.72	2871.5
				3091.2				
	10:45	2456.1	141.9	4032.0	483.556	1972.5	117.60	3067.9
	10:50	2428.5	155.8	4003.2	477.186	1951.3	116.76	3095.1
	10:55	2550.6	170.0	4089.6	496.413	2054.2	119.28	3108.8
	11:00	2479.3	183.9	4003.2	477.186	2002.1	116.76	3105.7
	11:05	2495.8	198.0	4060.8	489.965	2005.8	118.44	3136.0
4	11:10	2511.1	212.2	4089.6	496.413	2014.7	119.28	3154.2
				4046.4				

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	11:15	3185.9	229.4	4953.6	707.681	2478.2	144.48	3302.4	
	11:20	3211.4	246.5	4924.8	700.088	2511.3	143.64	3337.2	
	11:25	3199.9	263.6	4924.8	700.088	2499.8	143.64	3361.4	
	11:30	3221.6	280.6	4896.0	692.533	2529.1	142.80	3385.6	
	11:35	3220.3	297.5	4867.2	685.015	2535.3	141.96	3408.3	
	11:40	3229.2	314.3	4838.4	677.536	2551.7	141.12	3435.6	
					4900.8				
	11:45	1595.0	324.0	2793.6	245.266	1349.7	81.48	3086.1	
	11:50	1557.0	333.8	2822.4	249.964	1307.0	82.32	3028.7	
	11:55	1557.0	342.5	2505.6	200.549	1356.5	73.08	2997.0	
6	12:00	1527.8	351.4	2563.2	209.161	1318.6	74.76	2975.8	
	12:05	1538.6	360.4	2592.0	213.530	1325.1	75.60	2960.7	
	12:10	1519.0	369.4	2592.0	213.530	1305.5	75.60	2948.6	
					2644.8				
	12:15	1796.6	380.3	3139.2	304.333	1492.3	91.56	3012.0	
	12:20	1799.2	391.1	3110.4	299.188	1500.0	90.72	3018.0	
	12:25	1797.9	402.0	3139.2	304.333	1493.6	91.56	3030.1	
	12:30	1805.5	412.9	3139.2	304.333	1501.2	91.56	3034.7	
	12:35	1810.6	423.7	3110.4	299.188	1511.4	90.72	3039.2	
	12:40	1814.4	434.5	3110.4	299.188	1515.2	90.72	3043.7	
7				3124.8					
	12:45	2233.6	447.7	3801.6	433.682	1799.9	110.88	3140.5	
	12:50	2228.5	460.7	3744.0	421.604	1806.9	109.20	3166.2	
	12:55	2255.2	473.7	3744.0	421.604	1833.6	109.20	3188.9	
	1:00	2255.3	486.8	3772.8	427.624	1827.7	110.04	3205.6	
	1:05	2265.6	499.7	3715.2	415.624	1850.0	108.36	3214.7	
	1:10	2311.5	512.7	3744.0	421.604	1889.9	109.20	3232.9	
					3753.6				
	1:15	2750.6	528.0	4406.4	569.887	2180.7	128.52	3337.2	
	1:20	2799.0	543.3	4406.4	569.887	2229.1	128.52	3356.9	
8	1:25	2824.6	558.7	4435.2	576.797	2247.8	129.36	3382.6	
	1:30	2828.6	574.0	4406.4	569.887	2258.7	128.52	3394.7	
	1:35	2818.5	589.4	4435.2	576.797	2241.7	129.36	3405.3	
	1:40	2835.1	604.7	4406.4	569.887	2265.2	128.52	3420.4	
					4416.0				
	9								
NOTE:	SHUT DOWN DUE TO LEAKING STEM ON WELL HEAD VALVE. FOUND HOLE IN VALVE BODY.								

# STEP RATE INJECTION TEST

TEXACO EXPLORATION AND PRODUCTION

Well Name:  
Central Vacuum Unit No. 73  
Lea County, N.M



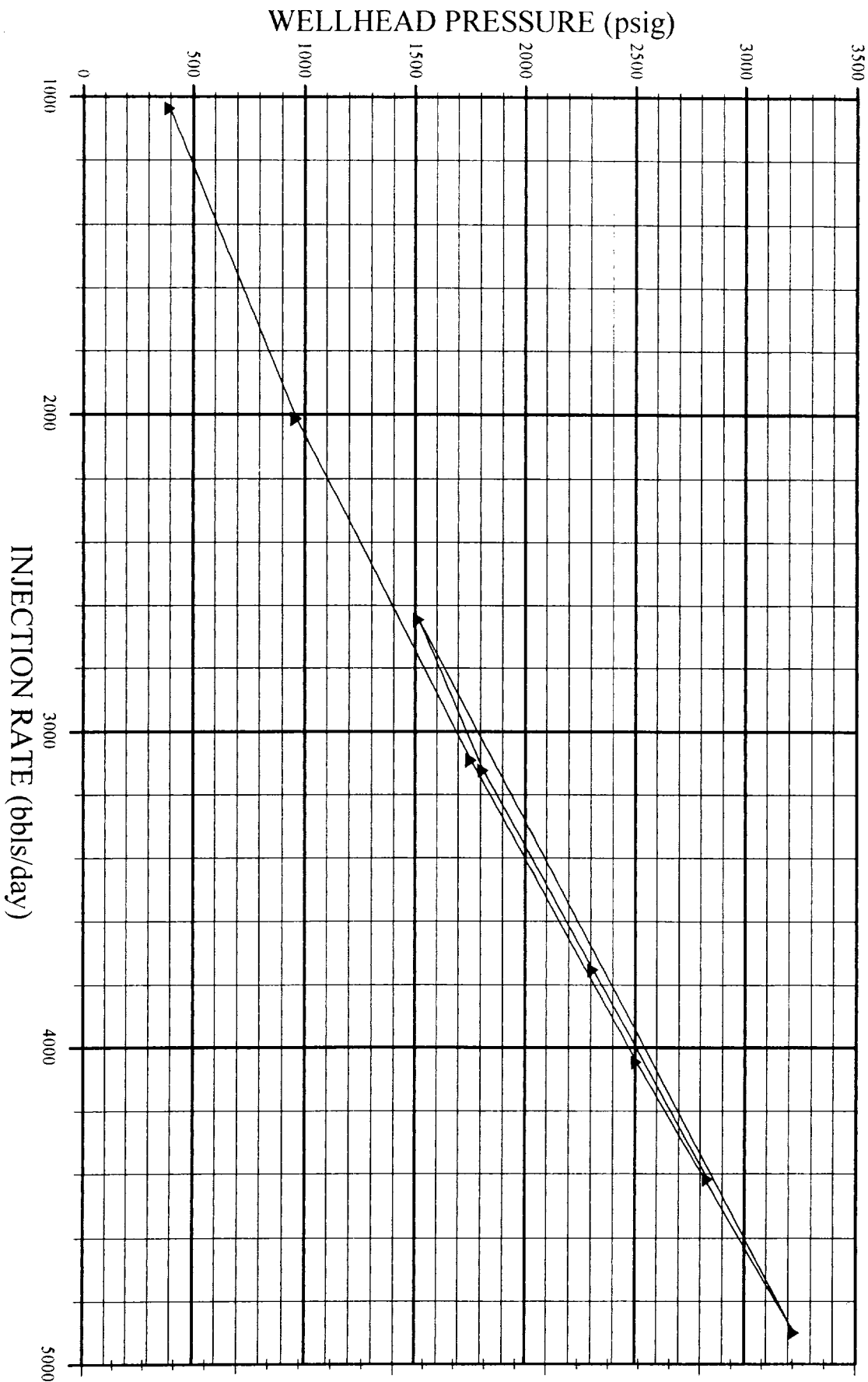
—■— BOTTOM HOLE PRESSURE (4,250)

INJECTION RATE (bbls/day)

# STEP RATE INJECTION TEST

TEXACO EXPLORATION AND PRODUCTION

Well Name:  
Central Vacuum Unit No. 73  
Lea County, N.M



—▲— RECORDED WELLHEAD PRESSURE