



**Gruy Petroleum Management Co.
New Mexico
Eddy County
Sec. 19-T24S-R26E
Estill Ad Federal Well # 2 - MWD Survey**

Sperry-Sun

Survey Report

29 June, 2004

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Survey Ref: svy7656

Prepared by: Admin
Checked by:
Approved by:

HALLIBURTON

Survey Report for Sec. 19-T24S-R26E - Estill Ad Federal Well # 2

Measured Depth (ft)	Incl. (Deg)	Grid Azim. (Deg)	Station TVD (ft)	Coordinates Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Comment
Gyro Survey								
0.00	0.000	0.000	0.00	0.00 N	0.00 E	0.00		
150.00	0.290	60.140	150.00	0.19 N	0.33 E	-0.08	0.19	
350.00	2.020	148.030	349.96	2.55 S	2.63 E	-3.66	1.02	
550.00	4.560	141.880	549.61	11.80 S	9.41 E	-15.07	1.28	
750.00	6.690	128.130	748.65	25.25 S	23.48 E	-34.47	1.25	
950.00	7.060	132.350	947.21	40.72 S	41.73 E	-58.16	0.31	
1150.00	5.460	131.650	1146.01	55.32 S	57.93 E	-79.83	0.80	
1350.00	4.200	130.320	1345.30	66.39 S	70.62 E	-96.54	0.63	
1550.00	3.470	130.670	1544.85	75.07 S	80.79 E	-109.79	0.37	
1750.00	2.890	123.840	1744.54	81.82 S	89.57 E	-120.67	0.35	
1950.00	2.320	122.830	1944.33	86.82 S	97.16 E	-129.45	0.29	
2150.00	1.840	119.170	2144.20	90.58 S	103.37 E	-136.38	0.25	
2350.00	1.570	122.410	2344.11	93.62 S	108.48 E	-142.05	0.14	
2550.00	1.200	128.250	2544.05	96.38 S	112.44 E	-146.74	0.20	
2750.00	1.190	125.760	2744.01	98.89 S	115.77 E	-150.83	0.03	
2950.00	1.180	125.520	2943.96	101.30 S	119.13 E	-154.87	0.01	
3150.00	0.920	130.710	3143.93	103.55 S	122.03 E	-158.47	0.14	
3350.00	0.830	137.260	3343.91	105.66 S	124.23 E	-161.51	0.07	
3550.00	0.740	136.450	3543.89	107.66 S	126.10 E	-164.25	0.05	
3750.00	0.770	139.960	3743.87	109.62 S	127.85 E	-166.88	0.03	
3950.00	0.840	139.750	3943.85	111.77 S	129.67 E	-169.69	0.04	
4150.00	0.720	150.190	4143.83	113.98 S	131.24 E	-172.38	0.09	
4350.00	0.680	148.600	4343.82	116.08 S	132.48 E	-174.78	0.02	
4550.00	0.670	142.360	4543.80	118.02 S	133.81 E	-177.12	0.04	
4750.00	0.660	149.850	4743.79	119.94 S	135.11 E	-179.41	0.04	
4950.00	0.690	149.550	4943.78	121.98 S	136.30 E	-181.72	0.02	
5150.00	0.900	145.860	5143.76	124.32 S	137.79 E	-184.46	0.11	
5350.00	0.980	135.390	5343.73	126.83 S	139.87 E	-187.73	0.09	
5550.00	0.530	131.440	5543.71	128.66 S	141.76 E	-190.35	0.23	
5750.00	0.900	178.770	5743.70	130.85 S	142.49 E	-192.47	0.33	
5950.00	1.470	187.010	5943.66	134.96 S	142.21 E	-195.36	0.30	
6150.00	1.460	184.440	6143.59	140.05 S	141.70 E	-198.82	0.03	
6350.00	1.120	172.590	6343.54	144.53 S	141.76 E	-202.20	0.22	
6550.00	1.120	177.370	6543.50	148.42 S	142.10 E	-205.34	0.05	
6750.00	1.120	174.070	6743.46	152.32 S	142.39 E	-208.44	0.03	
6950.00	1.100	151.160	6943.43	155.94 S	143.52 E	-211.90	0.22	
7150.00	1.610	131.190	7143.37	159.47 S	146.56 E	-216.56	0.34	
7350.00	2.320	126.240	7343.25	163.72 S	151.94 E	-223.31	0.36	
7550.00	2.430	112.970	7543.08	167.76 S	159.11 E	-231.10	0.28	
7750.00	2.450	102.070	7742.90	170.31 S	167.19 E	-238.37	0.23	

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7950.00	2.180	93.450	7942.74	171.44 S	175.17 E	-244.51	0.22	Last Gyro Survey @ 7950' md

MWD Survey

8021.00	1.710	95.230	8013.70	171.61 S	177.57 E	-246.24	0.67	1st MWD Survey @ 8021' md
8053.00	1.460	100.350	8045.69	171.73 S	178.45 E	-246.91	0.90	
8086.00	0.540	35.940	8078.68	171.68 S	178.95 E	-247.21	4.00	
8117.00	1.590	315.990	8109.68	171.25 S	178.74 E	-246.75	5.12	
8149.00	3.000	313.410	8141.65	170.36 S	177.82 E	-245.47	4.42	
8181.00	4.270	312.130	8173.58	168.98 S	176.33 E	-243.45	3.98	
8213.00	4.900	309.080	8205.48	167.32 S	174.39 E	-240.92	2.11	
8244.00	5.790	311.210	8236.35	165.46 S	172.18 E	-238.06	2.94	
8276.00	6.500	313.970	8268.16	163.14 S	169.66 E	-234.65	2.40	
8308.00	7.160	316.530	8299.94	160.43 S	166.99 E	-230.85	2.27	
8339.00	8.050	315.980	8330.66	157.47 S	164.15 E	-226.75	2.88	
8371.00	8.660	313.830	8362.32	154.19 S	160.86 E	-222.11	2.14	
8403.00	9.630	315.310	8393.92	150.62 S	157.24 E	-217.04	3.12	
8434.00	10.350	314.460	8424.45	146.82 S	153.42 E	-211.67	2.37	
8466.00	10.560	314.840	8455.91	142.74 S	149.29 E	-205.88	0.69	
8498.00	11.440	315.940	8487.33	138.39 S	145.01 E	-199.78	2.83	
8529.00	12.150	315.330	8517.67	133.87 S	140.58 E	-193.45	2.33	
8561.00	12.790	315.520	8548.92	128.94 S	135.73 E	-186.55	2.00	
8592.00	13.480	316.390	8579.11	123.88 S	130.83 E	-179.51	2.32	
8624.00	14.210	317.590	8610.18	118.28 S	125.61 E	-171.86	2.45	
8656.00	14.410	318.360	8641.18	112.40 S	120.31 E	-163.95	0.86	
8687.00	14.280	317.250	8671.22	106.71 S	115.16 E	-156.27	0.98	
8719.00	14.090	319.040	8702.24	100.87 S	109.92 E	-148.43	1.49	
8751.00	14.370	320.590	8733.26	94.86 S	104.85 E	-140.56	1.48	
8782.00	13.920	322.170	8763.32	88.95 S	100.12 E	-133.00	1.91	
8814.00	13.760	321.890	8794.39	82.91 S	95.41 E	-125.36	0.54	
8847.00	12.670	320.860	8826.52	77.02 S	90.70 E	-117.83	3.38	
8879.00	12.050	318.270	8857.77	71.80 S	86.26 E	-110.98	2.60	
8910.00	11.650	318.090	8888.11	67.06 S	82.02 E	-104.61	1.30	
8942.00	11.780	321.510	8919.45	62.10 S	77.83 E	-98.12	2.21	
8973.00	11.330	325.930	8949.82	57.10 S	74.15 E	-91.94	3.20	
9005.00	12.320	326.710	8981.14	51.64 S	70.52 E	-85.45	3.13	
9036.00	14.250	324.200	9011.31	45.78 S	66.47 E	-78.38	6.50	
9069.00	14.850	323.810	9043.25	39.07 S	61.60 E	-70.13	1.84	
9100.00	13.980	324.740	9073.27	32.81 S	57.09 E	-62.46	2.90	

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9132.00	14.050	324.580	9104.32	26.49 S	52.61 E	-54.75	0.25	
9164.00	14.610	322.020	9135.33	20.14 S	47.87 E	-46.86	2.64	
9195.00	15.680	318.990	9165.25	13.90 S	42.72 E	-38.77	4.29	
9228.00	16.840	316.670	9196.93	7.05 S	36.51 E	-29.54	4.03	
9259.00	17.280	315.140	9226.57	0.52 S	30.18 E	-20.45	2.03	
9291.00	19.530	316.660	9256.93	6.74 N	23.16 E	-10.36	7.19	
9323.00	19.940	319.560	9287.05	14.78 N	15.95 E	0.45	3.32	
9355.00	17.950	322.210	9317.31	22.83 N	9.39 E	10.82	6.77	
9387.00	18.020	323.980	9347.75	30.73 N	3.45 E	20.67	1.72	
9418.00	19.590	324.190	9377.09	38.82 N	2.41 W	30.61	5.07	
9450.00	20.490	326.660	9407.16	47.85 N	8.62 W	41.49	3.86	
9482.00	19.240	328.030	9437.25	57.00 N	14.49 W	52.23	4.17	
9513.00	18.940	323.920	9466.55	65.40 N	20.16 W	62.27	4.44	
9545.00	18.180	316.030	9496.89	73.20 N	26.69 W	72.43	8.19	
9577.00	18.250	310.650	9527.29	80.05 N	33.96 W	82.38	5.26	
9609.00	18.350	313.050	9557.67	86.76 N	41.44 W	92.36	2.38	
9638.00	17.940	316.840	9585.23	93.13 N	47.83 W	101.38	4.31	
9670.00	17.100	318.150	9615.74	100.23 N	54.34 W	111.01	2.90	
9702.00	16.500	319.770	9646.38	107.20 N	60.41 W	120.25	2.38	
9734.00	16.060	321.830	9677.10	114.15 N	66.08 W	129.22	2.27	
9766.00	15.580	324.640	9707.88	121.14 N	71.31 W	137.91	2.82	
9798.00	15.700	325.860	9738.70	128.23 N	76.22 W	146.47	1.09	
9829.00	15.340	319.120	9768.57	134.80 N	81.26 W	154.73	5.93	
9861.00	16.260	305.840	9799.37	140.62 N	87.66 W	163.34	11.63	
9893.00	19.780	299.850	9829.80	145.94 N	96.00 W	172.85	12.42	
9925.00	19.860	299.330	9859.91	151.30 N	105.43 W	183.12	0.61	
9957.00	19.600	303.200	9890.03	156.90 N	114.66 W	193.44	4.16	
9989.00	20.480	312.520	9920.10	163.63 N	123.28 W	204.20	10.34	
10021.00	21.270	319.900	9950.00	171.85 N	131.15 W	215.57	8.57	
10084.00	20.130	319.900	10008.93	188.89 N	145.49 W	237.83	1.81	
10148.00	19.160	321.660	10069.21	205.55 N	159.10 W	259.32	1.78	
10179.00	18.650	322.800	10098.54	213.49 N	165.25 W	269.34	2.03	
10211.00	18.590	320.490	10128.86	221.50 N	171.59 W	279.54	2.31	
10274.00	19.110	314.740	10188.49	236.50 N	185.31 W	299.87	3.06	
10306.00	18.440	315.750	10218.79	243.82 N	192.56 W	310.16	2.33	
10338.00	18.610	315.250	10249.13	251.07 N	199.69 W	320.31	0.73	
10369.00	19.800	312.290	10278.40	258.11 N	207.05 W	330.47	4.96	
10401.00	20.990	309.230	10308.40	265.39 N	215.50 W	341.52	4.99	
10433.00	21.020	314.320	10338.27	273.02 N	224.05 W	352.90	5.70	
10464.00	20.800	318.280	10367.23	281.01 N	231.69 W	363.96	4.61	

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10496.00	20.900	321.230	10397.14	289.71 N	239.04 W	375.34	3.30	
10528.00	21.120	323.030	10427.01	298.76 N	246.09 W	386.78	2.13	
10560.00	20.230	321.830	10456.95	307.72 N	252.97 W	398.05	3.08	
10591.00	19.430	316.970	10486.11	315.70 N	259.80 W	408.56	5.91	
10623.00	20.190	315.450	10516.22	323.53 N	267.31 W	419.39	2.87	
10655.00	21.190	313.890	10546.16	331.47 N	275.35 W	430.68	3.57	
10686.00	20.840	313.540	10575.09	339.16 N	283.39 W	441.76	1.20	
10719.00	20.480	314.940	10605.97	347.28 N	291.73 W	453.37	1.85	
10783.00	19.390	312.600	10666.14	362.38 N	307.47 W	475.12	2.11	
10846.00	18.110	313.040	10725.79	376.14 N	322.33 W	495.27	2.04	
10877.00	17.840	313.920	10755.28	382.72 N	329.27 W	504.80	1.24	
10909.00	18.020	312.870	10785.73	389.49 N	336.43 W	514.62	1.16	
10972.00	18.630	311.280	10845.53	402.76 N	351.13 W	534.30	1.25	
11035.00	18.190	311.810	10905.31	415.95 N	366.03 W	554.06	0.75	
11097.00	17.670	313.220	10964.30	428.85 N	380.10 W	573.05	1.09	
11161.00	16.260	314.540	11025.51	441.78 N	393.56 W	591.66	2.28	
11225.00	17.630	318.070	11086.73	455.28 N	406.42 W	610.29	2.68	
11288.00	18.920	318.590	11146.55	470.04 N	419.56 W	630.05	2.06	
11352.00	18.840	317.550	11207.11	485.45 N	433.39 W	650.76	0.54	
11414.00	18.760	317.110	11265.80	500.14 N	446.94 W	670.74	0.26	
11478.00	18.930	318.100	11326.37	515.40 N	460.87 W	691.41	0.57	
11542.00	18.480	324.670	11387.00	531.41 N	473.67 W	711.87	3.36	
11605.00	17.050	327.650	11446.99	547.36 N	484.39 W	730.91	2.69	
11637.00	16.680	328.470	11477.62	555.24 N	489.30 W	740.06	1.37	
11668.00	17.280	329.240	11507.26	562.98 N	493.98 W	748.96	2.07	
11701.00	18.290	327.640	11538.69	571.57 N	499.26 W	758.89	3.40	
11732.00	18.550	324.470	11568.10	579.69 N	504.73 W	768.59	3.34	
11764.00	17.220	325.840	11598.55	587.75 N	510.35 W	778.35	4.36	
11795.00	18.400	328.150	11628.07	595.71 N	515.51 W	787.72	4.44	
11827.00	17.810	331.330	11658.48	604.29 N	520.52 W	797.46	3.60	
11859.00	17.250	330.150	11689.00	612.70 N	525.23 W	806.88	2.07	
11891.00	17.570	327.150	11719.53	620.87 N	530.21 W	816.30	2.98	
11922.00	18.270	323.870	11749.03	628.73 N	535.61 W	825.76	3.96	
11953.00	19.970	320.670	11778.32	636.75 N	541.84 W	835.88	6.44	
11985.00	21.360	317.680	11808.26	645.29 N	549.22 W	847.17	5.45	
12049.00	19.500	324.600	11868.24	662.61 N	563.26 W	869.45	4.76	Last MWD Survey @ 12049' md
12121.00	19.500	324.600	11936.11	682.21 N	577.18 W	893.34	0.00	Projection to TD @ 12121' md

All data is in Feet (US) unless otherwise stated. Directions and coordinates are relative to Grid North. Vertical depths are relative to RKB. Northings and Eastings are relative to Wellhead.

The Dogleg Severity is in Degrees per 100 feet.

Vertical Section is from Wellhead and calculated along an Azimuth of 318.352° (Grid).

Survey Report for Sec. 19-T24S-R26E - Estill Ad Federal Well # 2

Coordinate System is NAD27 New Mexico State Planes, Eastern Zone.

Grid Convergence at Surface is 0.004°.

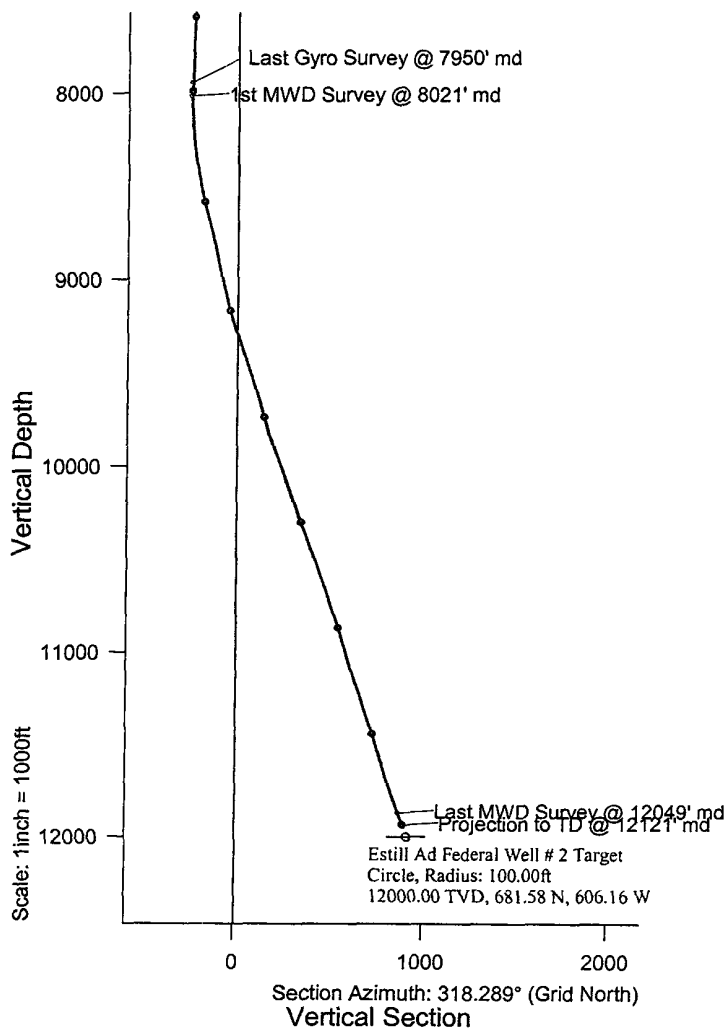
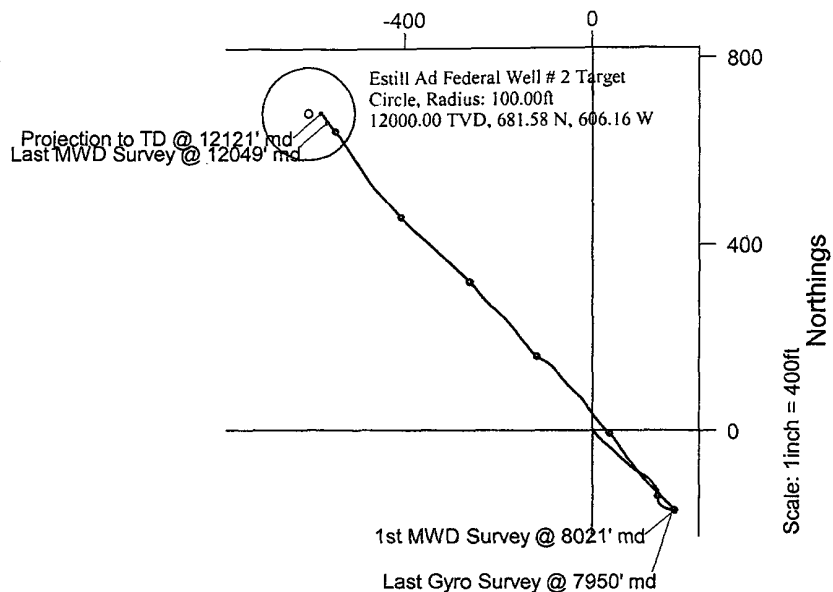
Based upon Minimum Curvature type calculations, at a Measured Depth of 12121.00ft.,

The Bottom Hole Displacement is 893.61ft., in the Direction of 319.767° (Grid).

New Mexico
Eddy County
Sec. 19-T24S-R26E
Estill Ad Federal Well # 2



Eastings
Scale: 1 inch = 400ft



Prepared by:
Admin

Date/Time:
29 June, 2004 - 15:14

Checked:

Approved: