

Company: Energen Resources Corporation
Field: Bloomfield
Site: Bloomfield 10 #1S
Well: Bloomfield 10 #1S
Wellpath: Lower Lateral

Date: 2/1/2006 Time: 13:56:20 Page: 1
Co-ordinate(NE) Reference: Well: Bloomfield 10 #1S, True North
Vertical (TVD) Reference: Est RKB+GL 6205.0
Section (VS) Reference: Well (0.00N,0.00E,202.72Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Field: Bloomfield
San Juan County, NM

Map System: US State Plane Coordinate System 1983
Geo Datum: GRS 1980
Sys Datum: Mean Sea Level

Map Zone: New Mexico, Western Zone
Coordinate System: Well Centre
Geomagnetic Model: igrf2005

Site: Bloomfield 10 #1S
Section 10, T32-N, R6-W
San Juan County, NM

Site Position: Northing: 2182148.72 ft Latitude: 36 59 46.000 N
From: Map Easting: 2835526.43 ft Longitude: 107 26 54.000 W
Position Uncertainty: 0.00 ft North Reference: True
Ground Level: 6190.00 ft Grid Convergence: 0.23 deg

Well: Bloomfield 10 #1S

Slot Name:

Well Position: +N/-S 0.00 ft Northing: 2182148.72 ft Latitude: 36 59 46.000 N
+E/-W 0.00 ft Easting: 2835526.43 ft Longitude: 107 26 54.000 W
Position Uncertainty: 0.00 ft

Wellpath: Lower Lateral

Current Datum: Est RKB+GL Height 6205.00 ft
Magnetic Data: 12/1/2005
Field Strength: 51540 nT
Vertical Section: Depth From (TVD) ft
+N/-S ft
+E/-W ft
Direction deg
0.00 0.00 0.00 202.72

Survey: Pathfinder MWD Surveys

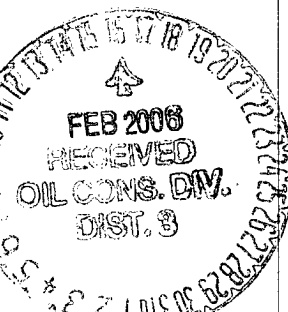
Start Date: 2/1/2006

Company: PathFinder Energy Services
Tool:

Engineer: Roger Federwisch
Tied-to: From Surface

Survey: Pathfinder MWD Surveys

MD ft	Incl deg	Azlm deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.53	166.11	499.99	-2.24	0.56	1.86	0.11	0.11	0.00	
1000.00	0.18	171.65	999.98	-5.27	1.22	4.39	0.07	-0.07	1.11	
1480.00	0.26	139.13	1479.98	-6.84	2.05	5.52	0.03	0.02	-6.77	
1626.00	0.88	292.50	1625.97	-6.66	1.23	5.67	0.77	0.42	105.05	
1658.00	1.23	264.82	1657.97	-6.59	0.66	5.83	1.90	1.09	-86.50	
1689.00	1.49	248.03	1688.96	-6.78	-0.05	6.27	1.53	0.84	-54.16	
1720.00	1.93	241.17	1719.95	-7.18	-0.88	6.96	1.56	1.42	-22.13	
1752.00	2.55	230.63	1751.92	-7.89	-1.90	8.01	2.32	1.94	-32.94	
1782.00	3.08	222.80	1781.89	-8.90	-2.96	9.36	2.18	1.77	-26.10	
1813.00	3.87	218.15	1812.83	-10.34	-4.18	11.15	2.70	2.55	-15.00	
1844.00	4.57	213.22	1843.74	-12.19	-5.50	13.37	2.54	2.26	-15.90	
1876.00	5.72	211.29	1875.62	-14.62	-7.03	16.20	3.63	3.59	-6.03	
1907.00	7.12	207.86	1906.42	-17.64	-8.73	19.64	4.68	4.52	-11.06	
1939.00	8.79	205.75	1938.11	-21.60	-10.71	24.06	5.30	5.22	-6.59	
1970.00	10.29	204.44	1968.68	-26.25	-12.89	29.19	4.89	4.84	-4.23	
2001.00	11.87	202.32	1999.10	-31.72	-15.25	35.15	5.26	5.10	-6.84	
2032.00	13.81	200.04	2029.33	-38.15	-17.73	42.03	6.47	6.26	-7.35	
2063.00	17.15	197.76	2059.20	-45.98	-20.39	50.29	10.95	10.77	-7.35	
2095.00	20.75	197.05	2089.46	-55.90	-23.49	60.63	11.27	11.25	-2.22	
2125.00	24.18	197.58	2117.18	-66.84	-26.91	72.04	11.45	11.43	1.77	
2156.00	28.14	199.60	2145.00	-79.78	-31.28	85.67	13.09	12.77	6.52	
2187.00	31.57	200.83	2171.88	-94.26	-36.62	101.08	11.24	11.06	3.97	
2232.00	33.94	201.62	2209.72	-116.95	-45.43	125.42	5.35	5.27	1.76	



PathFinder

Survey Report

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Survey: Pathfinder MWD Surveys

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
2264.00	34.65	202.32	2236.16	-133.67	-52.18	143.45	2.54	2.22	2.19	
2293.00	36.32	203.38	2259.77	-149.18	-58.72	160.28	6.14	5.76	3.66	
2325.00	37.99	204.35	2285.28	-166.85	-66.54	179.61	5.53	5.22	3.03	
2356.00	39.75	205.05	2309.41	-184.52	-74.67	199.05	5.85	5.68	2.26	
2386.00	41.50	205.49	2332.18	-202.19	-83.01	218.56	5.91	5.83	1.47	
2418.00	42.56	205.67	2355.95	-221.51	-92.26	239.96	3.33	3.31	0.56	
2449.00	43.97	204.96	2378.52	-240.72	-101.35	261.18	4.81	4.55	-2.29	
2480.00	43.97	205.40	2400.83	-260.19	-110.50	282.68	0.99	0.00	1.42	
2512.00	45.64	205.14	2423.54	-280.59	-120.13	305.21	5.25	5.22	-0.81	
2543.00	47.66	204.79	2444.81	-301.02	-129.64	327.74	6.57	6.52	-1.13	
2575.00	49.24	204.87	2466.04	-322.76	-139.70	351.67	4.94	4.94	0.25	
2607.00	50.74	204.70	2486.61	-345.01	-149.97	376.16	4.71	4.69	-0.53	
2638.00	51.62	204.52	2506.04	-366.97	-160.03	400.30	2.87	2.84	-0.58	
2669.00	50.83	204.26	2525.46	-388.98	-170.01	424.46	2.63	-2.55	-0.84	
2701.00	51.62	203.91	2545.50	-411.75	-180.19	449.40	2.61	2.47	-1.09	
2732.00	52.67	204.17	2564.52	-434.11	-190.16	473.87	3.45	3.39	0.84	
2763.00	53.90	204.08	2583.05	-456.78	-200.32	498.71	3.97	3.97	-0.29	
2795.00	55.13	204.00	2601.63	-480.58	-210.93	524.76	3.85	3.84	-0.25	
2826.00	56.19	203.29	2619.12	-504.03	-221.20	550.35	3.91	3.42	-2.29	
2858.00	56.98	203.03	2636.74	-528.59	-231.70	577.06	2.56	2.47	-0.81	
2889.00	58.12	203.38	2653.37	-552.63	-242.01	603.22	3.80	3.68	1.13	
2920.00	59.71	202.94	2669.38	-577.04	-252.45	629.76	5.27	5.13	-1.42	
2952.00	61.99	201.53	2684.96	-602.91	-263.02	657.71	8.10	7.12	-4.41	
2982.00	63.84	200.48	2698.62	-627.84	-272.59	684.40	6.91	6.17	-3.50	
3013.00	64.81	200.65	2712.05	-654.00	-282.41	712.32	3.17	3.13	0.55	
3044.00	66.13	200.83	2724.92	-680.37	-292.39	740.51	4.29	4.26	0.58	
3076.00	65.95	200.74	2737.92	-707.71	-302.77	769.73	0.62	-0.56	-0.28	
3108.00	65.16	200.39	2751.16	-734.99	-313.00	798.84	2.66	-2.47	-1.09	
3139.00	64.02	200.83	2764.46	-761.19	-322.86	826.83	3.89	-3.68	1.42	
3142.00	64.66	200.70	2765.76	-763.72	-323.82	829.53	21.68	21.33	-4.31	KOP @ 3142' MD/2766' TVD
3218.00	80.90	197.76	2788.19	-832.05	-347.57	901.73	21.68	21.37	-3.87	
3250.00	81.43	196.17	2793.11	-862.30	-356.79	933.19	5.18	1.66	-4.97	
3280.00	82.13	197.40	2797.40	-890.72	-365.37	962.72	4.68	2.33	4.10	
3313.00	85.21	196.70	2801.03	-922.08	-374.98	995.36	9.57	9.33	-2.12	
3326.72	85.91	196.66	2802.10	-935.18	-378.91	1008.96	5.10	5.10	-0.29	End of Build @ 3327' MD/2
3344.00	86.79	196.61	2803.20	-951.70	-383.85	1026.11	5.10	5.10	-0.29	
3376.00	87.14	196.70	2804.89	-982.32	-393.01	1057.88	1.13	1.09	0.28	
3408.00	86.61	196.88	2806.63	-1012.91	-402.24	1089.66	1.75	-1.66	0.56	
3440.00	85.65	197.05	2808.79	-1043.45	-411.55	1121.43	3.05	-3.00	0.53	
3471.00	86.88	196.70	2810.81	-1073.05	-420.53	1152.20	4.12	3.97	-1.13	
3503.00	87.76	196.52	2812.31	-1103.68	-429.67	1183.98	2.81	2.75	-0.56	
3535.00	88.37	196.00	2813.39	-1134.38	-438.62	1215.76	2.50	1.91	-1.62	
3566.00	88.99	197.14	2814.10	-1164.08	-447.46	1246.58	4.19	2.00	3.68	
3598.00	89.43	198.37	2814.55	-1194.56	-457.22	1278.45	4.08	1.37	3.84	
3630.00	89.08	199.78	2814.96	-1224.80	-467.67	1310.38	4.54	-1.09	4.41	
3662.00	88.02	201.27	2815.77	-1254.75	-478.89	1342.35	5.71	-3.31	4.66	
3693.00	86.79	202.85	2817.18	-1283.45	-490.52	1373.31	6.45	-3.97	5.10	
3725.00	87.93	203.73	2818.65	-1312.81	-503.16	1405.28	4.50	3.56	2.75	
3757.00	89.96	204.52	2819.24	-1342.01	-516.24	1437.26	6.81	6.34	2.47	
3789.00	91.36	205.93	2818.87	-1370.96	-529.87	1469.23	6.21	4.37	4.41	
3821.00	91.01	207.25	2818.21	-1399.57	-544.19	1501.15	4.27	-1.09	4.12	
3852.00	90.75	207.42	2817.73	-1427.10	-558.42	1532.04	1.00	-0.84	0.55	
3884.00	89.34	207.86	2817.71	-1455.45	-573.27	1563.92	4.62	-4.41	1.37	

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MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
3916.00	89.78	207.95	2817.95	-1483.73	-588.25	1595.79	1.40	1.37	0.28	
3948.00	89.78	208.13	2818.08	-1511.97	-603.29	1627.65	0.56	0.00	0.56	
3980.00	89.08	208.65	2818.39	-1540.12	-618.50	1659.49	2.72	-2.19	1.62	
4012.00	88.50	209.01	2819.07	-1568.15	-633.93	1691.31	2.13	-1.81	1.12	
4043.00	89.16	209.01	2819.70	-1595.25	-648.96	1722.11	2.13	2.13	0.00	
4075.00	88.72	208.65	2820.29	-1623.28	-664.39	1753.92	1.78	-1.37	-1.12	
4107.00	89.25	208.39	2820.86	-1651.39	-679.66	1785.76	1.84	1.66	-0.81	
4139.00	89.69	206.98	2821.16	-1679.73	-694.53	1817.63	4.62	1.37	-4.41	
4171.00	90.13	206.19	2821.21	-1708.34	-708.85	1849.56	2.83	1.37	-2.47	
4202.00	89.60	206.63	2821.28	-1736.11	-722.64	1880.50	2.22	-1.71	1.42	
4234.00	89.16	205.58	2821.63	-1764.84	-736.72	1912.44	3.56	-1.37	-3.28	
4266.00	89.78	204.26	2821.92	-1793.86	-750.20	1944.41	4.56	1.94	-4.12	
4298.00	89.78	202.15	2822.05	-1823.27	-762.81	1976.41	6.59	0.00	-6.59	
4330.00	90.22	198.99	2822.05	-1853.23	-774.05	2008.38	9.97	1.37	-9.87	
4361.00	90.04	198.02	2821.98	-1882.62	-783.89	2039.30	3.18	-0.58	-3.13	
4393.00	89.52	198.11	2822.10	-1913.04	-793.81	2071.19	1.65	-1.62	0.28	
4425.00	88.99	198.28	2822.51	-1943.44	-803.80	2103.09	1.74	-1.66	0.53	
4457.00	88.90	199.07	2823.10	-1973.75	-814.05	2135.00	2.48	-0.28	2.47	
4489.00	91.54	201.18	2822.98	-2003.79	-825.06	2166.97	10.56	8.25	6.59	
4520.00	91.89	202.59	2822.05	-2032.55	-836.61	2197.95	4.68	1.13	4.55	
4552.00	91.63	202.85	2821.07	-2062.05	-848.96	2229.93	1.15	-0.81	0.81	
4584.00	91.71	202.32	2820.14	-2091.58	-861.25	2261.92	1.67	0.25	-1.66	
4616.00	91.89	201.45	2819.13	-2121.26	-873.17	2293.90	2.78	0.56	-2.72	
4689.00	92.00	201.45	2816.66	-2189.17	-899.85	2366.84	0.15	0.15	0.00	

Annotation

MD ft	TVD ft	
3142.00	2765.76	KOP @ 3142' MD/2766' TVD 14.09°/100 Build
3326.72	2802.10	End of Build @ 3327' MD/2807' TVD