

PathFinder Energy Services, Inc.

Survey Report

EOG PETROLEUM, INC.
LUCKY WOLF 30 FC#2H
EDDY COUNTY, NM
Rig: MCVAY 4
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers: CHRIS CARSON

Survey Horiz. Reference: WELLHEAD
Ref Coordinates: LAT: 32.53.29.7035 N LON: 104.13.22.9275 W
Reference: NAD27 new mexico east Transverse Mercator
Ref GRID Coord: X: 533856.8000 Y: 688087.6000
North Aligned To: TRUE NORTH
Total Magnetic Correction: 8.07° EAST TO TRUE
Vertical Section Plane: 93.44
Survey Vert. Reference: 18.50' Rotary Table To Ground
Altitude: 3516.50' Ground To MSL

Survey Calculations by RX5 V5.11i using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)	TEMP (F)
TIE IN TO SURFACE.											
0.00	0.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00@	0.00	0.00	0.00
THE FOLLOWING ARE SINGLES HOT SURVEYS.											
188.00	0.20	214.67	188.00	188.00	-0.17	0.27 S	0.19 W	0.33@	214.67	0.11	0.00
383.00	0.40	33.17	383.00	195.00	-0.01	0.02 N	0.01 W	0.02@	338.59	0.31	0.00
486.00	0.70	58.67	485.99	103.00	0.69	0.65 N	0.73 E	0.97@	48.26	0.37	0.00
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.											
685.00	0.44	3.45	684.99	199.00	1.68	2.04 N	1.81 E	2.73@	41.55	0.29	93.80
873.00	0.53	7.90	872.98	188.00	1.75	3.62 N	1.97 E	4.13@	28.57	0.05	90.18
1060.00	0.62	15.05	1059.97	187.00	2.02	5.46 N	2.36 E	5.94@	23.34	0.06	93.80
1247.00	0.62	4.37	1246.96	187.00	2.24	7.44 N	2.69 E	7.92@	19.90	0.06	93.80
1434.00	0.53	347.17	1433.95	187.00	2.02	9.30 N	2.58 E	9.65@	15.51	0.10	97.41
1622.00	0.79	358.27	1621.94	188.00	1.66	11.44 N	2.35 E	11.68@	11.60	0.15	101.02
1809.00	0.62	9.32	1808.92	187.00	1.64	13.73 N	2.47 E	13.95@	10.21	0.12	101.02
1996.00	0.53	12.26	1995.91	187.00	1.88	15.57 N	2.82 E	15.82@	10.27	0.05	101.02
2183.00	0.62	0.17	2182.90	187.00	1.96	17.43 N	3.01 E	17.68@	9.79	0.08	101.02
2370.00	0.44	350.15	2369.90	187.00	1.73	19.15 N	2.89 E	19.36@	8.58	0.11	101.02
2558.00	0.35	357.24	2557.89	188.00	1.51	20.43 N	2.74 E	20.61@	7.63	0.05	101.02
2745.00	0.44	350.68	2744.89	187.00	1.28	21.71 N	2.59 E	21.86@	6.81	0.05	101.02
2932.00	0.44	339.45	2931.88	187.00	0.83	23.09 N	2.22 E	23.20@	5.50	0.05	104.64
3119.00	0.35	357.78	3118.88	187.00	0.49	24.33 N	1.95 E	24.41@	4.58	0.08	101.02
3306.00	0.18	318.01	3305.87	187.00	0.22	25.12 N	1.73 E	25.18@	3.94	0.13	101.02
3494.00	0.18	325.77	3493.87	188.00	-0.17	25.59 N	1.37 E	25.62@	3.06	0.01	104.64
3681.00	0.09	358.18	3680.87	187.00	-0.36	25.98 N	1.20 E	26.00@	2.64	0.06	104.64
3868.00	0.44	359.73	3867.87	187.00	-0.42	26.84 N	1.19 E	26.87@	2.54	0.19	108.25
4055.00	0.44	346.36	4054.87	187.00	-0.68	28.26 N	1.02 E	28.28@	2.06	0.05	108.25
4242.00	0.18	353.48	4241.86	187.00	-0.94	29.25 N	0.81 E	29.26@	1.59	0.14	104.64

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)	TEMP (F)
4430.00	0.26	296.00	4429.86	188.00	-1.39	29.73 N	0.40 E	29.73@	0.77	0.12	108.25
4617.00	0.09	254.96	4616.86	187.00	-1.92	29.87 N	0.13 W	29.88@	359.76	0.11	108.25
4804.00	0.18	298.11	4803.86	187.00	-2.32	29.98 N	0.53 W	29.98@	358.99	0.07	108.25
4991.00	0.18	222.61	4990.86	187.00	-2.78	29.90 N	0.98 W	29.91@	358.11	0.12	111.87
5178.00	0.26	117.85	5177.86	187.00	-2.58	29.48 N	0.81 W	29.49@	358.43	0.19	104.64
5365.00	0.44	137.53	5364.85	187.00	-1.67	28.76 N	0.05 E	28.76@	0.10	0.12	108.25
5552.00	0.44	124.44	5551.85	187.00	-0.54	27.82 N	1.13 E	27.84@	2.32	0.05	111.87
5647.00	0.62	116.88	5646.85	95.00	0.24	27.38 N	1.89 E	27.45@	3.94	0.20	111.87
5804.00	1.67	97.85	5803.81	157.00	3.30	26.68 N	4.91 E	27.13@	10.43	0.70	111.87
5835.00	4.13	97.25	5834.77	31.00	4.87	26.48 N	6.47 E	27.26@	13.72	7.94	111.87
5867.00	7.03	93.23	5866.62	32.00	7.97	26.23 N	9.57 E	27.92@	20.04	9.14	111.87
5899.00	9.32	90.99	5898.29	32.00	12.52	26.07 N	14.11 E	29.64@	28.43	7.22	111.87
5931.00	12.31	89.52	5929.72	32.00	18.52	26.05 N	20.12 E	32.92@	37.67	9.38	111.87
5962.00	14.77	91.16	5959.85	31.00	25.76	26.00 N	27.37 E	37.75@	46.47	8.03	111.87
5994.00	17.59	92.17	5990.58	32.00	34.67	25.74 N	36.28 E	44.48@	54.65	8.86	111.87
6026.00	21.10	95.18	6020.77	32.00	45.27	25.03 N	46.86 E	53.12@	61.89	11.40	111.87
6058.00	25.15	96.35	6050.19	32.00	57.82	23.76 N	59.36 E	63.93@	68.18	12.74	111.87
6090.00	28.31	95.23	6078.77	32.00	72.20	22.32 N	73.67 E	76.98@	73.15	10.00	111.87
6121.00	32.27	93.77	6105.53	31.00	87.83	21.10 N	89.26 E	91.72@	76.70	12.99	111.87
6153.00	35.88	92.84	6132.04	32.00	105.76	20.07 N	107.15 E	109.02@	79.39	11.40	111.87
6185.00	39.66	92.13	6157.33	32.00	125.35	19.23 N	126.73 E	128.18@	81.37	11.89	115.48
6216.00	43.26	91.58	6180.55	31.00	145.86	18.57 N	147.24 E	148.41@	82.81	11.67	115.48
6248.00	47.04	91.93	6203.12	32.00	168.54	17.87 N	169.91 E	170.85@	84.00	11.84	111.87
6280.00	49.95	92.21	6224.32	32.00	192.49	17.01 N	193.86 E	194.60@	84.99	9.12	115.48
6312.00	53.99	92.54	6244.03	32.00	217.69	15.96 N	219.04 E	219.62@	85.83	12.65	115.48
6343.00	57.16	92.73	6261.56	31.00	243.25	14.78 N	244.58 E	245.03@	86.54	10.24	115.48
6375.00	60.15	93.43	6278.20	32.00	270.58	13.31 N	271.87 E	272.19@	87.20	9.53	111.87
6407.00	62.43	93.76	6293.57	32.00	298.64	11.55 N	299.88 E	300.10@	87.79	7.18	108.25
6438.00	64.63	93.94	6307.39	31.00	326.39	9.69 N	327.56 E	327.70@	88.31	7.12	108.25

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6470.00	66.92	93.33	6320.52	32.00	355.57	7.84 N	356.68 E	356.77@	88.74	7.36	104.64
6502.00	69.03	93.55	6332.52	32.00	385.23	6.06 N	386.29 E	386.34@	89.10	6.62	104.64
6534.00	71.31	94.14	6343.37	32.00	415.33	4.04 N	416.32 E	416.34@	89.44	7.33	108.25
6565.00	73.25	94.61	6352.81	31.00	444.86	1.79 N	445.77 E	445.77@	89.77	6.42	104.64
6597.00	75.53	94.73	6361.42	32.00	475.67	0.72 S	476.48 E	476.48@	90.09	7.13	104.64
6629.00	79.32	94.93	6368.38	32.00	506.88	3.35 S	507.60 E	507.61@	90.38	11.86	104.64
6667.00	85.30	94.28	6373.47	38.00	544.52	6.37 S	545.12 E	545.15@	90.67	15.83	104.64
6730.00	89.69	93.56	6376.22	63.00	607.44	10.67 S	607.89 E	607.99@	91.01	7.06	108.25
6794.00	90.31	93.62	6376.22	64.00	671.44	14.68 S	671.77 E	671.93@	91.25	0.97	108.25
6889.00	88.99	94.60	6376.80	95.00	766.43	21.49 S	766.52 E	766.82@	91.61	1.73	111.87
6984.00	87.23	95.02	6379.93	95.00	861.34	29.45 S	861.13 E	861.63@	91.96	1.91	111.87
7047.00	87.23	95.12	6382.98	63.00	924.24	35.01 S	923.81 E	924.47@	92.17	0.16	111.87
7111.00	87.14	94.98	6386.12	64.00	988.14	40.64 S	987.48 E	988.32@	92.36	0.26	111.87
7174.00	87.23	95.57	6389.21	63.00	1051.03	46.42 S	1050.14 E	1051.17@	92.53	0.95	111.87
7238.00	87.14	95.31	6392.36	64.00	1114.92	52.48 S	1113.77 E	1115.01@	92.70	0.43	111.87
7302.00	86.97	95.28	6395.64	64.00	1178.80	58.38 S	1177.42 E	1178.86@	92.84	0.27	111.87
7366.00	87.58	95.80	6398.69	64.00	1242.68	64.55 S	1241.05 E	1242.72@	92.98	1.25	111.87
7461.00	87.05	95.89	6403.14	95.00	1337.50	74.22 S	1335.45 E	1337.51@	93.18	0.57	111.87
7556.00	87.76	94.35	6407.44	95.00	1432.35	82.69 S	1429.97 E	1432.36@	93.31	1.78	111.87
7651.00	86.44	94.01	6412.25	95.00	1527.22	89.60 S	1524.59 E	1527.22@	93.36	1.44	111.87
7747.00	86.79	94.25	6417.91	96.00	1623.05	96.50 S	1620.18 E	1623.05@	93.41	0.44	115.48
7842.00	87.41	94.56	6422.72	95.00	1717.91	103.79 S	1714.77 E	1717.91@	93.46	0.73	115.48
7905.00	86.44	94.51	6426.10	63.00	1780.81	108.76 S	1777.49 E	1780.81@	93.50	1.54	115.48
7937.00	85.47	94.24	6428.36	32.00	1812.72	111.20 S	1809.31 E	1812.73@	93.52	3.15	115.48
8032.00	87.41	93.77	6434.26	95.00	1907.53	117.82 S	1903.89 E	1907.53@	93.54	2.10	115.48
8096.00	87.85	94.02	6436.90	64.00	1971.47	122.17 S	1967.69 E	1971.48@	93.55	0.79	115.48
8159.00	87.58	93.78	6439.41	63.00	2034.42	126.45 S	2030.49 E	2034.43@	93.56	0.57	115.48
8223.00	87.85	93.56	6441.96	64.00	2098.37	130.54 S	2094.31 E	2098.38@	93.57	0.54	115.48
8286.00	87.93	93.79	6444.28	63.00	2161.33	134.58 S	2157.14 E	2161.33@	93.57	0.39	115.48

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8350.00	88.37	93.73	6446.35	64.00	2225.29	138.77 S	2220.97 E	2225.30@ 93.58	0.69	115.48
8445.00	89.52	94.17	6448.10	95.00	2320.27	145.31 S	2315.72 E	2320.28@ 93.59	1.30	115.48
8541.00	89.52	93.83	6448.90	96.00	2416.26	152.01 S	2411.49 E	2416.27@ 93.61	0.35	115.48
8636.00	89.25	93.26	6449.92	95.00	2511.26	157.88 S	2506.30 E	2511.27@ 93.60	0.66	119.09
8763.00	90.66	93.01	6450.02	127.00	2638.25	164.83 S	2633.11 E	2638.26@ 93.58	1.13	119.09
8858.00	91.45	93.97	6448.27	95.00	2733.23	170.61 S	2727.91 E	2733.24@ 93.58	1.31	119.09
8954.00	89.69	93.88	6447.32	96.00	2829.22	177.18 S	2823.68 E	2829.23@ 93.59	1.84	119.09
9049.00	89.16	92.80	6448.27	95.00	2924.22	182.72 S	2918.51 E	2924.22@ 93.58	1.27	119.09
9080.00	89.87	93.03	6448.54	31.00	2955.21	184.29 S	2949.47 E	2955.22@ 93.58	2.41	119.09
9175.00	89.16	92.17	6449.34	95.00	3050.20	188.60 S	3044.37 E	3050.20@ 93.54	1.17	115.48
9270.00	87.32	90.59	6452.26	95.00	3145.08	190.89 S	3139.29 E	3145.09@ 93.48	2.55	115.48
9365.00	88.64	90.85	6455.61	95.00	3239.92	192.08 S	3234.22 E	3239.92@ 93.40	1.42	115.48
9429.00	89.43	91.43	6456.68	64.00	3303.85	193.35 S	3298.20 E	3303.86@ 93.36	1.53	119.09
9492.00	89.87	91.57	6457.07	63.00	3366.82	195.00 S	3361.17 E	3366.82@ 93.32	0.73	119.09
9556.00	89.78	91.60	6457.26	64.00	3430.78	196.77 S	3425.15 E	3430.80@ 93.29	0.15	119.09
9620.00	89.43	91.82	6457.71	64.00	3494.75	198.68 S	3489.12 E	3494.77@ 93.26	0.65	119.09
9715.00	89.34	92.25	6458.72	95.00	3589.72	202.06 S	3584.05 E	3589.74@ 93.23	0.46	119.09
9810.00	88.72	92.53	6460.33	95.00	3684.69	206.02 S	3678.96 E	3684.72@ 93.21	0.72	119.09
9906.00	88.37	93.47	6462.77	96.00	3780.65	211.04 S	3774.79 E	3780.69@ 93.20	1.04	119.09
10001.00	87.93	93.36	6465.84	95.00	3875.60	216.70 S	3869.57 E	3875.64@ 93.21	0.48	119.09
10096.00	88.02	93.69	6469.19	95.00	3970.54	222.53 S	3964.33 E	3970.58@ 93.21	0.36	119.09
10191.00	88.29	93.70	6472.25	95.00	4065.49	228.65 S	4059.09 E	4065.52@ 93.22	0.28	119.09
10286.00	88.99	94.24	6474.51	95.00	4160.46	235.23 S	4153.83 E	4160.49@ 93.24	0.93	119.09
10381.00	89.78	94.62	6475.53	95.00	4255.44	242.57 S	4248.54 E	4255.46@ 93.27	0.92	119.09
10477.00	90.31	95.03	6475.45	96.00	4351.41	250.64 S	4344.20 E	4351.43@ 93.30	0.70	119.09
10572.00	90.48	95.20	6474.80	95.00	4446.37	259.11 S	4438.82 E	4446.38@ 93.34	0.25	119.09
10667.00	90.75	95.27	6473.78	95.00	4541.32	267.78 S	4533.42 E	4541.32@ 93.38	0.29	122.71
10762.00	91.19	95.52	6472.17	95.00	4636.25	276.71 S	4627.98 E	4636.25@ 93.42	0.53	122.71
10858.00	91.01	94.99	6470.33	96.00	4732.18	285.50 S	4723.56 E	4732.18@ 93.46	0.58	122.71

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir		DLS (dg/100ft)	TEMP (F)
						(ft)	(ft)	(ft)	(deg)		
10905.00	88.29	93.06	6470.61	47.00	4779.17	288.80 S	4770.44 E	4779.17@	93.46	7.10	122.71
STRAIGHT LINE PROJECTION TO BIT @ 10980'MD.											
10980.00	88.29	93.06	6472.85	75.00	4854.14	292.80 S	4845.30 E	4854.14@	93.46	0.00	122.70