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PathFinder Energy Services, Inc.

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Tie-in Date: 01/25/2010

Date Completed: 02/07/2010

COG OPERATING L.L.C.
MOOSE 23 FEDERAL #2H
EDDY COUNTY, NM

Rig: JW #2

PathFinder Office Supervisor: FRANCISCO SINISTERRA

PathFinder Field Engineers: JEFF HULL

PRITHWISH DAS

MIKE ROSTEET

JOHN OVERTON

Survey Calculations by RX5 V6.02B using Minimum Curvature

Survey Report

Survey Horiz. Reference: WELLHEAD

Ref Coordinates: LAT: 32.54.50.4684 N LON: 104.9.11.6649 W

Reference: NAD83 new mexico east Transverse Mercator

Ref GRID Coord: X: 596603.3450 Y: 696301.7570

North Aligned To: GRID NORTH

Total Magnetic Correction: 7.97° EAST TO GRID

Vertical Section Plane: 83.74

Survey Vert. Reference: 18.00' Rotary Table To Ground

Altitude: 3734.00' Ground To MSL

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)
THE FOLLOWING ARE SCIENTIFIC GYRO SURVEYS.										
100.00	0.32	117.10	100.00	0.00	0.24	0.13 S	0.25 E	0.28@	117.11	0.00
200.00	0.48	116.59	199.99	100.00	0.82	0.44 S	0.87 E	0.98@	116.88	0.16
300.00	0.60	112.64	299.99	100.00	1.63	0.83 S	1.73 E	1.92@	115.66	0.13
400.00	0.61	101.58	399.98	100.00	2.60	1.14 S	2.74 E	2.96@	112.63	0.12
500.00	0.65	104.07	499.98	100.00	3.63	1.39 S	3.81 E	4.05@	109.99	0.05
600.00	0.78	100.94	599.97	100.00	4.82	1.65 S	5.03 E	5.29@	108.20	0.14
700.00	0.56	99.19	699.96	100.00	5.94	1.86 S	6.18 E	6.45@	106.75	0.22
800.00	0.43	100.57	799.96	100.00	6.77	2.01 S	7.03 E	7.31@	105.93	0.13
900.00	0.44	97.58	899.96	100.00	7.50	2.13 S	7.78 E	8.06@	105.29	0.02
1000.00	0.38	100.80	999.95	100.00	8.19	2.24 S	8.48 E	8.78@	104.78	0.06
1100.00	0.20	89.87	1099.95	100.00	8.68	2.30 S	8.98 E	9.27@	104.36	0.19
1200.00	0.08	119.29	1199.95	100.00	8.91	2.33 S	9.22 E	9.51@	104.21	0.14
1300.00	0.07	100.14	1299.95	100.00	9.03	2.38 S	9.34 E	9.64@	104.29	0.03
1400.00	0.18	219.77	1399.95	100.00	8.97	2.51 S	9.30 E	9.63@	105.11	0.22
1500.00	0.18	220.25	1499.95	100.00	8.74	2.75 S	9.10 E	9.51@	106.82	0.00
1600.00	0.10	185.10	1599.95	100.00	8.61	2.96 S	8.99 E	9.46@	108.21	0.11
1700.00	0.27	272.13	1699.95	100.00	8.36	3.04 S	8.75 E	9.26@	109.14	0.28
1800.00	0.58	258.79	1799.95	100.00	7.63	3.13 S	8.01 E	8.60@	111.31	0.32
1900.00	0.48	246.94	1899.94	100.00	6.72	3.39 S	7.13 E	7.90@	115.41	0.15
2000.00	0.53	257.80	1999.94	100.00	5.86	3.65 S	6.30 E	7.28@	120.11	0.11
2100.00	0.57	263.20	2099.93	100.00	4.90	3.81 S	5.35 E	6.57@	125.44	0.06
2200.00	0.53	272.60	2199.93	100.00	3.95	3.84 S	4.39 E	5.84@	131.19	0.10
2300.00	0.42	269.36	2299.93	100.00	3.13	3.83 S	3.56 E	5.23@	137.04	0.11
2400.00	0.36	286.57	2399.92	100.00	2.47	3.74 S	2.90 E	4.73@	142.25	0.13
2500.00	0.40	282.54	2499.92	100.00	1.85	3.58 S	2.26 E	4.23@	147.77	0.05
2600.00	0.26	241.06	2599.92	100.00	1.31	3.61 S	1.72 E	4.00@	154.58	0.27

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Survey Report

COG OPERATING L.L.C.
MOOSE 23 FEDERAL #2H
EDDY COUNTY, NM
RIG:JW #2

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
2700.00	0.07	145.09	2699.92	100.00	1.13	3.77 S	1.55 E	4.08@	157.62	0.28
2800.00	0.14	94.82	2799.92	100.00	1.28	3.83 S	1.71 E	4.20@	155.96	0.11
2900.00	0.07	111.42	2899.92	100.00	1.46	3.86 S	1.89 E	4.30@	153.96	0.08
3000.00	0.09	63.27	2999.92	100.00	1.58	3.85 S	2.02 E	4.35@	152.38	0.07
3100.00	0.04	120.71	3099.92	100.00	1.68	3.83 S	2.12 E	4.38@	151.11	0.08
3200.00	0.13	72.92	3199.92	100.00	1.82	3.82 S	2.25 E	4.43@	149.45	0.11
3300.00	0.14	80.18	3299.92	100.00	2.06	3.76 S	2.48 E	4.51@	146.59	0.02
3400.00	0.04	106.37	3399.92	100.00	2.21	3.75 S	2.64 E	4.59@	144.91	0.10
3500.00	0.07	180.97	3499.92	100.00	2.24	3.82 S	2.67 E	4.66@	145.09	0.07
3600.00	0.35	275.34	3599.92	100.00	1.93	3.86 S	2.36 E	4.52@	148.50	0.36
3700.00	0.34	283.35	3699.92	100.00	1.35	3.76 S	1.77 E	4.16@	154.78	0.05
3800.00	0.36	259.37	3799.91	100.00	0.76	3.75 S	1.17 E	3.93@	162.62	0.15
3900.00	0.37	250.68	3899.91	100.00	0.13	3.91 S	0.56 E	3.95@	171.86	0.06
4000.00	0.36	259.19	3999.91	100.00	-0.50	4.08 S	0.05 W	4.08@	180.75	0.06
4100.00	0.27	248.88	4099.91	100.00	-1.04	4.22 S	0.58 W	4.26@	187.84	0.11
4200.00	0.28	221.37	4199.91	100.00	-1.45	4.49 S	0.96 W	4.59@	192.10	0.13
4300.00	0.09	207.57	4299.91	100.00	-1.67	4.74 S	1.16 W	4.88@	193.75	0.19
4400.00	0.11	143.55	4399.91	100.00	-1.67	4.89 S	1.14 W	5.02@	193.12	0.11
4500.00	0.13	158.44	4499.91	100.00	-1.59	5.07 S	1.04 W	5.18@	191.60	0.04
4600.00	0.10	187.40	4599.91	100.00	-1.58	5.27 S	1.01 W	5.36@	190.87	0.06
4700.00	0.13	307.67	4699.91	100.00	-1.68	5.28 S	1.11 W	5.40@	191.89	0.20
4800.00	0.17	286.29	4799.91	100.00	-1.90	5.17 S	1.34 W	5.34@	194.57	0.07
4900.00	0.30	308.20	4899.91	100.00	-2.22	4.97 S	1.69 W	5.25@	198.81	0.16
5000.00	0.40	312.76	4999.90	100.00	-2.64	4.57 S	2.15 W	5.05@	205.24	0.10
5100.00	0.32	321.82	5099.90	100.00	-3.02	4.11 S	2.58 W	4.86@	212.13	0.10
5200.00	0.25	282.97	5199.90	100.00	-3.37	3.84 S	2.97 W	4.86@	217.67	0.20
5300.00	0.33	274.61	5299.90	100.00	-3.86	3.77 S	3.47 W	5.12@	222.59	0.09
5400.00	0.39	264.11	5399.90	100.00	-4.48	3.78 S	4.09 W	5.58@	227.25	0.09
5500.00	0.16	235.62	5499.90	100.00	-4.95	3.90 S	4.55 W	5.99@	229.40	0.26

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Survey Report

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MOOSE 23 FEDERAL #2H
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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
5600.00	0.18	319.54	5599.90	100.00	-5.16	3.86 S	4.76 W	6.13@	231.01	0.23
5700.00	0.29	356.83	5699.89	100.00	-5.23	3.49 S	4.88 W	6.00@	234.47	0.18
5800.00	0.28	352.20	5799.89	100.00	-5.22	2.99 S	4.93 W	5.76@	238.75	0.02
5900.00	0.28	344.48	5899.89	100.00	-5.27	2.51 S	5.03 W	5.62@	243.43	0.04
6000.00	0.29	357.47	5999.89	100.00	-5.29	2.03 S	5.10 W	5.49@	248.36	0.06
** TIED INTO SCIENTIFIC GYRO SURVEY AT 6100' MD.										
6100.00	0.32	56.97	6099.89	100.00	-5.03	1.62 S	4.88 W	5.14@	251.64	0.30
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
6181.00	0.53	93.93	6180.89	81.00	-4.46	1.52 S	4.32 W	4.58@	250.57	0.41
6213.00	1.58	91.03	6212.88	32.00	-3.87	1.54 S	3.73 W	4.03@	247.55	3.28
6244.00	5.45	91.55	6243.82	31.00	-1.99	1.59 S	1.83 W	2.42@	229.02	12.48
6276.00	10.73	90.85	6275.49	32.00	2.47	1.67 S	2.67 E	3.15@	122.05	16.50
6308.00	15.92	89.01	6306.62	32.00	9.81	1.64 S	10.04 E	10.18@	99.28	16.27
6339.00	20.05	87.95	6336.10	31.00	19.34	1.38 S	19.61 E	19.66@	94.02	13.36
6371.00	22.51	86.90	6365.91	32.00	30.93	0.85 S	31.21 E	31.22@	91.56	7.78
6402.00	24.80	85.93	6394.30	31.00	43.36	0.07 S	43.62 E	43.62@	90.09	7.49
6434.00	28.40	85.23	6422.91	32.00	57.67	1.04 N	57.91 E	57.91@	88.97	11.29
6466.00	32.01	86.37	6450.56	32.00	73.76	2.21 N	73.96 E	73.99@	88.29	11.42
6498.00	35.61	85.67	6477.15	32.00	91.55	3.45 N	91.72 E	91.78@	87.84	11.31
6529.00	38.95	85.31	6501.81	31.00	110.31	4.93 N	110.43 E	110.54@	87.44	10.80
6561.00	42.38	85.84	6526.08	32.00	131.15	6.54 N	131.22 E	131.38@	87.15	10.77
6593.00	44.76	86.81	6549.26	32.00	153.18	7.95 N	153.23 E	153.44@	87.03	7.73
6625.00	47.57	86.81	6571.42	32.00	176.23	9.23 N	176.27 E	176.52@	87.00	8.78
6656.00	50.91	85.75	6591.66	31.00	199.68	10.76 N	199.70 E	199.99@	86.92	11.08
6688.00	54.78	84.61	6610.99	32.00	225.17	12.91 N	225.11 E	225.48@	86.72	12.42
6720.00	56.98	84.87	6628.93	32.00	251.66	15.34 N	251.49 E	251.96@	86.51	6.91
6751.00	60.41	84.08	6645.04	31.00	278.14	17.89 N	277.85 E	278.42@	86.32	11.28
6783.00	64.28	83.64	6659.89	32.00	306.48	20.92 N	306.02 E	306.74@	86.09	12.15
6815.00	67.97	83.82	6672.84	32.00	335.74	24.12 N	335.10 E	335.97@	85.88	11.54
6846.00	71.49	84.08	6683.58	31.00	364.81	27.18 N	364.02 E	365.03@	85.73	11.38

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Survey Report

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
6878.00	74.83	83.73	6692.85	32.00	395.43	30.43 N	394.47 E	395.64@	85.59	10.49
6910.00	78.08	83.12	6700.34	32.00	426.54	33.99 N	425.37 E	426.73@	85.43	10.32
6941.00	79.93	83.64	6706.25	31.00	456.97	37.50 N	455.60 E	457.14@	85.29	6.19
6973.00	81.95	83.64	6711.29	32.00	488.57	41.00 N	487.00 E	488.72@	85.19	6.31
7005.00	85.03	82.94	6714.92	32.00	520.36	44.72 N	518.57 E	520.50@	85.07	9.87
7037.00	86.70	83.12	6717.23	32.00	552.27	48.59 N	550.25 E	552.39@	84.95	5.25
7068.00	88.20	83.03	6718.60	31.00	583.24	52.32 N	581.00 E	583.35@	84.85	4.85
7100.00	89.69	83.03	6719.19	32.00	615.23	56.21 N	612.75 E	615.33@	84.76	4.66
7131.00	91.45	82.76	6718.89	31.00	646.22	60.04 N	643.51 E	646.31@	84.67	5.74
7163.00	91.71	82.59	6718.00	32.00	678.20	64.12 N	675.24 E	678.28@	84.58	0.97
7195.00	90.57	81.97	6717.37	32.00	710.19	68.42 N	706.94 E	710.24@	84.47	4.06
7228.00	89.25	81.54	6717.42	33.00	743.17	73.15 N	739.60 E	743.21@	84.35	4.21
7259.00	88.37	82.16	6718.06	31.00	774.14	77.54 N	770.28 E	774.17@	84.25	3.47
7291.00	88.37	81.72	6718.97	32.00	806.11	82.03 N	801.95 E	806.13@	84.16	1.37
7323.00	88.64	81.33	6719.81	32.00	838.08	86.74 N	833.59 E	838.09@	84.06	1.48
7355.00	87.14	81.53	6720.99	32.00	870.03	91.51 N	865.21 E	870.04@	83.96	4.73
7386.00	86.17	81.46	6722.79	31.00	900.95	96.08 N	895.82 E	900.95@	83.88	3.14
7418.00	85.56	81.59	6725.10	32.00	932.84	100.79 N	927.38 E	932.85@	83.80	1.95
7450.00	86.53	81.88	6727.31	32.00	964.75	105.38 N	958.98 E	964.75@	83.73	3.16
7482.00	87.32	82.06	6729.03	32.00	996.69	109.84 N	990.62 E	996.69@	83.67	2.53
7514.00	88.02	82.38	6730.33	32.00	1028.65	114.17 N	1022.30 E	1028.65@	83.63	2.40
7545.00	88.81	82.66	6731.18	31.00	1059.63	118.20 N	1053.02 E	1059.63@	83.60	2.70
7577.00	89.16	82.11	6731.75	32.00	1091.62	122.44 N	1084.73 E	1091.62@	83.56	2.04
7609.00	89.25	82.39	6732.19	32.00	1123.60	126.76 N	1116.44 E	1123.61@	83.52	0.92
7641.00	89.25	82.57	6732.61	32.00	1155.59	130.95 N	1148.16 E	1155.60@	83.49	0.56
7673.00	89.43	82.99	6732.98	32.00	1187.59	134.97 N	1179.90 E	1187.60@	83.47	1.43
7705.00	89.43	82.93	6733.30	32.00	1219.58	138.89 N	1211.66 E	1219.59@	83.46	0.19
7737.00	89.43	83.29	6733.62	32.00	1251.58	142.73 N	1243.43 E	1251.59@	83.45	1.12
7769.00	90.13	84.11	6733.74	32.00	1283.58	146.24 N	1275.23 E	1283.59@	83.46	3.37

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7800.00	90.31	83.51	6733.62	31.00	1314.58	149.58 N	1306.05 E	1314.59@	83.47	2.02
7832.00	90.66	83.74	6733.35	32.00	1346.57	153.13 N	1337.85 E	1346.59@	83.47	1.31
7864.00	91.01	83.34	6732.89	32.00	1378.57	156.73 N	1369.65 E	1378.59@	83.47	1.66
7896.00	91.10	83.38	6732.30	32.00	1410.56	160.43 N	1401.43 E	1410.58@	83.47	0.31
7928.00	91.19	83.32	6731.66	32.00	1442.56	164.14 N	1433.21 E	1442.57@	83.47	0.34
7960.00	91.19	82.70	6730.99	32.00	1474.55	168.03 N	1464.96 E	1474.57@	83.46	1.94
7992.00	90.92	82.31	6730.40	32.00	1506.54	172.21 N	1496.68 E	1506.56@	83.44	1.48
8024.00	90.92	82.09	6729.89	32.00	1538.52	176.55 N	1528.38 E	1538.54@	83.41	0.69
8056.00	90.92	81.99	6729.38	32.00	1570.50	180.98 N	1560.07 E	1570.53@	83.38	0.31
8087.00	90.66	82.04	6728.95	31.00	1601.48	185.28 N	1590.77 E	1601.52@	83.36	0.85
8119.00	89.78	81.99	6728.83	32.00	1633.47	189.73 N	1622.45 E	1633.51@	83.33	2.75
8151.00	89.96	81.79	6728.90	32.00	1665.45	194.24 N	1654.13 E	1665.50@	83.30	0.84
8183.00	88.90	79.56	6729.22	32.00	1697.40	199.43 N	1685.71 E	1697.46@	83.25	7.72
8215.00	88.37	77.23	6729.98	32.00	1729.25	205.86 N	1717.04 E	1729.34@	83.16	7.47
8247.00	87.41	75.59	6731.16	32.00	1760.97	213.38 N	1748.12 E	1761.10@	83.04	5.94
8279.00	87.76	75.86	6732.51	32.00	1792.63	221.26 N	1779.11 E	1792.81@	82.91	1.38
8310.00	87.14	76.80	6733.88	31.00	1823.34	228.58 N	1809.20 E	1823.58@	82.80	3.63
8342.00	86.44	77.43	6735.68	32.00	1855.07	235.70 N	1840.34 E	1855.38@	82.70	2.94
8374.00	85.47	78.94	6737.93	32.00	1886.84	242.24 N	1871.59 E	1887.20@	82.63	5.60
8406.00	85.03	79.79	6740.58	32.00	1918.64	248.13 N	1902.93 E	1919.04@	82.57	2.98
8437.00	83.98	80.44	6743.55	31.00	1949.43	253.42 N	1933.33 E	1949.87@	82.53	3.98
8469.00	83.89	82.00	6746.93	32.00	1981.22	258.28 N	1964.78 E	1981.68@	82.51	4.86
8501.00	83.98	82.84	6750.31	32.00	2013.03	262.48 N	1996.32 E	2013.50@	82.51	2.62
8532.00	83.98	83.42	6753.57	31.00	2043.86	266.16 N	2026.92 E	2044.33@	82.52	1.86
8564.00	84.42	83.76	6756.80	32.00	2075.70	269.72 N	2058.56 E	2076.16@	82.54	1.73
8596.00	84.86	85.14	6759.79	32.00	2107.55	272.80 N	2090.27 E	2108.00@	82.56	4.51
8628.00	84.42	84.74	6762.78	32.00	2139.41	275.61 N	2122.01 E	2139.83@	82.60	1.85
8660.00	84.24	84.66	6765.94	32.00	2171.25	278.55 N	2153.72 E	2171.65@	82.63	0.61
8691.00	84.24	84.90	6769.05	31.00	2202.09	281.36 N	2184.43 E	2202.48@	82.66	0.77

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Survey Report

COG OPERATING L.L.C.
MOOSE 23 FEDERAL #2H
EDDY COUNTY, NM
RIG:JW #2

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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)
8723.00	84.50	85.13	6772.19	32.00	2233.92	284.12 N	2216.16 E	2234.29@	82.69	1.08
8755.00	84.24	85.28	6775.33	32.00	2265.76	286.79 N	2247.89 E	2266.11@	82.73	0.94
8786.00	84.33	85.17	6778.42	31.00	2296.59	289.35 N	2278.63 E	2296.93@	82.76	0.46
8818.00	83.98	85.18	6781.67	32.00	2328.42	292.03 N	2310.35 E	2328.73@	82.80	1.09
8850.00	83.98	85.28	6785.03	32.00	2360.23	294.68 N	2342.06 E	2360.53@	82.83	0.31
8882.00	83.54	85.51	6788.51	32.00	2392.03	297.23 N	2373.77 E	2392.31@	82.86	1.55
8913.00	83.54	85.43	6792.00	31.00	2422.82	299.67 N	2404.48 E	2423.08@	82.90	0.26
8945.00	83.62	85.14	6795.58	32.00	2454.60	302.28 N	2436.17 E	2454.85@	82.93	0.93
8977.00	85.03	84.55	6798.74	32.00	2486.44	305.14 N	2467.88 E	2486.68@	82.95	4.77
9007.00	85.03	84.62	6801.34	30.00	2516.32	307.96 N	2497.64 E	2516.55@	82.97	0.23
9039.00	85.38	84.88	6804.01	32.00	2548.21	310.88 N	2529.39 E	2548.42@	82.99	1.36
9071.00	87.58	85.70	6805.98	32.00	2580.13	313.50 N	2561.22 E	2580.34@	83.02	7.33
9103.00	89.34	86.20	6806.84	32.00	2612.10	315.76 N	2593.13 E	2612.28@	83.06	5.72
9135.00	91.28	86.41	6806.66	32.00	2644.06	317.82 N	2625.06 E	2644.23@	83.10	6.10
9166.00	91.28	86.50	6805.97	31.00	2675.02	319.74 N	2655.99 E	2675.17@	83.14	0.29
9198.00	90.84	87.06	6805.38	32.00	2706.97	321.54 N	2687.94 E	2707.10@	83.18	2.22
9229.00	88.81	86.89	6805.48	31.00	2737.92	323.17 N	2718.89 E	2738.03@	83.22	6.57
9261.00	88.64	86.96	6806.19	32.00	2769.86	324.89 N	2750.84 E	2769.96@	83.26	0.57
9293.00	88.81	87.31	6806.90	32.00	2801.80	326.49 N	2782.79 E	2801.88@	83.31	1.22
9325.00	88.99	87.49	6807.51	32.00	2833.73	327.94 N	2814.75 E	2833.79@	83.35	0.79
9357.00	89.25	87.40	6808.00	32.00	2865.65	329.36 N	2846.71 E	2865.70@	83.40	0.86
9388.00	88.99	87.46	6808.48	31.00	2896.59	330.75 N	2877.68 E	2896.63@	83.44	0.86
9420.00	88.81	87.82	6809.10	32.00	2928.51	332.07 N	2909.65 E	2928.53@	83.49	1.26
9452.00	88.72	87.69	6809.79	32.00	2960.42	333.32 N	2941.61 E	2960.44@	83.54	0.49
9484.00	88.72	87.49	6810.50	32.00	2992.34	334.67 N	2973.58 E	2992.35@	83.58	0.63
9516.00	89.08	86.48	6811.11	32.00	3024.28	336.35 N	3005.53 E	3024.29@	83.61	3.35
9548.00	88.81	86.38	6811.70	32.00	3056.24	338.34 N	3037.46 E	3056.25@	83.64	0.90
9579.00	89.34	86.44	6812.20	31.00	3087.20	340.29 N	3068.39 E	3087.21@	83.67	1.72
9611.00	90.57	86.96	6812.23	32.00	3119.16	342.13 N	3100.34 E	3119.16@	83.70	4.17

PathFinder Energy Services, Inc.

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9643.00	90.40	86.96	6811.96	32.00	3151.11	343.82 N	3132.29 E	3151.11@	83.74	0.53
9675.00	90.40	86.66	6811.74	32.00	3183.06	345.61 N	3164.24 E	3183.06@	83.77	0.94
9707.00	90.48	86.48	6811.49	32.00	3215.02	347.52 N	3196.19 E	3215.02@	83.79	0.61
9739.00	90.48	85.89	6811.22	32.00	3246.99	349.65 N	3228.11 E	3247.00@	83.82	1.84
9771.00	90.13	85.55	6811.05	32.00	3278.97	352.04 N	3260.02 E	3278.98@	83.84	1.52
9803.00	89.34	84.62	6811.20	32.00	3310.96	354.78 N	3291.91 E	3310.97@	83.85	3.81
9835.00	89.87	84.44	6811.42	32.00	3342.96	357.83 N	3323.76 E	3342.97@	83.86	1.75
9866.00	90.31	84.20	6811.37	31.00	3373.96	360.90 N	3354.61 E	3373.96@	83.86	1.62
9898.00	88.90	83.23	6811.59	32.00	3405.95	364.40 N	3386.41 E	3405.96@	83.86	5.35
9930.00	88.02	82.35	6812.45	32.00	3437.94	368.41 N	3418.15 E	3437.94@	83.85	3.89
9962.00	87.58	81.95	6813.68	32.00	3469.90	372.78 N	3449.82 E	3469.91@	83.83	1.86
9994.00	87.76	82.98	6814.98	32.00	3501.87	376.97 N	3481.52 E	3501.87@	83.82	3.27
10025.00	88.11	84.04	6816.10	31.00	3532.85	380.48 N	3512.30 E	3532.85@	83.82	3.60
10057.00	87.85	84.14	6817.23	32.00	3564.83	383.77 N	3544.11 E	3564.83@	83.82	0.87
10089.00	87.93	84.14	6818.40	32.00	3596.80	387.03 N	3575.92 E	3596.81@	83.82	0.25
10121.00	88.55	84.38	6819.39	32.00	3628.79	390.23 N	3607.75 E	3628.79@	83.83	2.08
10153.00	88.37	83.92	6820.25	32.00	3660.77	393.49 N	3639.57 E	3660.78@	83.83	1.54
10185.00	86.70	84.06	6821.62	32.00	3692.74	396.84 N	3671.36 E	3692.75@	83.83	5.24
10217.00	85.65	83.74	6823.76	32.00	3724.67	400.23 N	3703.11 E	3724.68@	83.83	3.43
10249.00	84.94	83.69	6826.38	32.00	3756.56	403.72 N	3734.81 E	3756.57@	83.83	2.22
10281.00	84.24	84.44	6829.40	32.00	3788.42	407.02 N	3766.50 E	3788.42@	83.83	3.20
10312.00	82.39	85.34	6833.01	31.00	3819.20	409.76 N	3797.16 E	3819.21@	83.84	6.63
10335.00	83.36	85.05	6835.86	23.00	3842.02	411.67 N	3819.90 E	3842.02@	83.85	4.40
STRAIGHT LINE PROJECTION TO BIT AT 10410'MD.										
10410.00	83.36	85.05	6844.53	75.00	3916.49	418.10 N	3894.12 E	3916.50@	83.87	0.00

** The survey data at tie-in point was furnished by a recognized survey company and entered as submitted. Survey stations above the tie-in point represent recalculated data by PathFinder Energy Services, Inc. and may reflect minor changes due to rounding differences between survey programs. Only survey stations taken by qualified PathFinder personnel are subject to certification.