

PathFinder Energy Services, Inc.

Survey Report

MURCHISON OIL & GAS, INC
 CARBON VALLEY 31 FED COM 1H
 EDDY COUNTY, NEW MEXICO
 Rig: PATTERSON 74
 PathFinder Office Supervisor: FRANCISCO SINISTERRA
 PathFinder Field Engineers: JOHN OVERTON
 JOHN MAYERS
 BILLY RICHARD

Survey Calculations by RX5 V6.03A using Minimum Curvature

Survey Horiz. Reference: WELLHEAD
 Ref Coordinates: LAT: 32.52.33.0748 N LON: 104.12.24.6119 W
 GRID Reference: NAD27 new mexico east Transverse Mercator
 Ref GRID Coord: X: 538836.0000 Y: 682370.4000
 North Aligned To: GRID NORTH
 Total Magnetic Correction: 7.98° EAST TO GRID
 Vertical Section Plane: 272.88
 Survey Vert. Reference: 21.50' Kelly Bushing To Ground
 Altitude: 3558.00' 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)
0.00	0.00	0.00	-0.00	0.00	0.00	0.00 S	0.00 W	0.00@	218.76	0.00
THE FOLLOWING ARE SCIENTIFIC DRILLING GYROSCOPIC SURVEYS.										
100.00	0.15	67.88	100.00	100.00	-0.12	0.05 N	0.12 E	0.13@	68.40	0.15
200.00	0.31	111.30	200.00	100.00	-0.49	0.00 S	0.49 E	0.49@	90.18	0.23
300.00	0.09	200.22	300.00	100.00	-0.73	0.17 S	0.72 E	0.74@	103.59	0.32
400.00	0.10	47.80	400.00	100.00	-0.76	0.19 S	0.76 E	0.78@	104.02	0.19
500.00	0.10	216.04	500.00	100.00	-0.78	0.20 S	0.77 E	0.79@	104.62	0.20
600.00	0.19	228.13	599.99	100.00	-0.61	0.38 S	0.59 E	0.71@	122.73	0.09
700.00	0.15	261.53	699.99	100.00	-0.37	0.51 S	0.34 E	0.62@	146.32	0.10
800.00	0.17	248.53	799.99	100.00	-0.10	0.59 S	0.07 E	0.59@	172.84	0.04
900.00	0.26	298.91	899.99	100.00	0.24	0.53 S	0.26 W	0.59@	206.41	0.20
1000.00	0.18	278.57	999.99	100.00	0.60	0.40 S	0.62 W	0.73@	237.26	0.11
1100.00	0.38	325.47	1099.99	100.00	0.95	0.10 S	0.96 W	0.97@	264.04	0.29
1200.00	0.33	312.01	1199.99	100.00	1.38	0.37 N	1.36 W	1.41@	285.02	0.10
1300.00	0.32	297.86	1299.99	100.00	1.86	0.69 N	1.82 W	1.95@	290.70	0.08
1400.00	0.32	281.71	1399.99	100.00	2.38	0.88 N	2.34 W	2.50@	290.50	0.09
1500.00	0.43	271.01	1499.98	100.00	3.04	0.94 N	2.99 W	3.14@	287.43	0.13
1600.00	0.42	266.30	1599.98	100.00	3.77	0.92 N	3.73 W	3.85@	283.88	0.04
1700.00	0.91	261.35	1699.97	100.00	4.92	0.78 N	4.88 W	4.95@	279.07	0.49
1800.00	1.31	260.00	1799.96	100.00	6.81	0.46 N	6.79 W	6.81@	273.88	0.40
1900.00	1.26	258.06	1899.93	100.00	8.99	0.04 N	9.00 W	9.00@	270.23	0.07
2000.00	1.27	254.96	1999.91	100.00	11.10	0.48 S	11.14 W	11.15@	267.53	0.07
2100.00	0.94	252.69	2099.89	100.00	12.93	1.01 S	13.00 W	13.03@	265.55	0.33
2200.00	0.75	258.92	2199.88	100.00	14.33	1.38 S	14.42 W	14.49@	264.53	0.21
2300.00	0.84	262.69	2299.87	100.00	15.69	1.60 S	15.79 W	15.87@	264.21	0.10
2400.00	0.76	262.88	2399.86	100.00	17.06	1.78 S	17.18 W	17.27@	264.10	0.08

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PathFinder Energy Services, Inc.

Survey Report

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CARBON VALLEY 31 FED COM 1H
EDDY COUNTY, NEW MEXICO
RIG:PATTERSON 74

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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)
2500.00	0.76	263.13	2499.85	100.00	18.37	1.94 S	18.49 W	18.59@	264.02	0.00
2600.00	0.73	259.10	2599.84	100.00	19.64	2.14 S	19.78 W	19.89@	263.83	0.06
2700.00	0.56	236.94	2699.83	100.00	20.66	2.52 S	20.81 W	20.96@	263.08	0.30
2800.00	0.64	231.20	2799.83	100.00	21.47	3.14 S	21.66 W	21.88@	261.75	0.10
2900.00	0.59	226.28	2899.82	100.00	22.24	3.85 S	22.46 W	22.79@	260.28	0.07
3000.00	0.56	226.60	2999.82	100.00	22.93	4.54 S	23.19 W	23.63@	258.93	0.03
3100.00	0.54	210.49	3099.81	100.00	23.49	5.28 S	23.78 W	24.36@	257.48	0.16
3200.00	0.52	220.34	3199.81	100.00	23.98	6.03 S	24.32 W	25.05@	256.07	0.09
3300.00	0.60	205.48	3299.80	100.00	24.46	6.85 S	24.84 W	25.76@	254.58	0.17
3400.00	0.28	196.63	3399.80	100.00	24.72	7.56 S	25.13 W	26.24@	253.26	0.33
3500.00	0.57	185.28	3499.80	100.00	24.80	8.29 S	25.25 W	26.57@	251.83	0.30
3600.00	0.37	185.04	3599.79	100.00	24.83	9.10 S	25.32 W	26.91@	250.23	0.20
3700.00	0.52	202.59	3699.79	100.00	25.00	9.84 S	25.52 W	27.36@	248.91	0.20
3800.00	0.42	210.77	3799.79	100.00	25.32	10.58 S	25.89 W	27.96@	247.77	0.12
3900.00	0.17	222.02	3899.79	100.00	25.59	11.00 S	26.17 W	28.39@	247.20	0.25
4000.00	0.11	193.89	3999.79	100.00	25.70	11.21 S	26.30 W	28.58@	246.92	0.09
4100.00	0.07	39.29	4099.79	100.00	25.68	11.25 S	26.28 W	28.59@	246.82	0.18
4200.00	0.19	50.50	4199.79	100.00	25.52	11.10 S	26.11 W	28.37@	246.97	0.12
4300.00	0.06	314.63	4299.79	100.00	25.44	10.96 S	26.02 W	28.23@	247.16	0.20
4400.00	0.17	238.35	4399.79	100.00	25.60	11.00 S	26.19 W	28.40@	247.22	0.17
4500.00	0.20	243.22	4499.79	100.00	25.87	11.15 S	26.47 W	28.72@	247.15	0.03
4600.00	0.27	232.77	4599.78	100.00	26.21	11.38 S	26.81 W	29.12@	247.01	0.08
4700.00	0.26	223.68	4699.78	100.00	26.53	11.68 S	27.16 W	29.56@	246.72	0.04
4800.00	0.07	306.76	4799.78	100.00	26.73	11.81 S	27.36 W	29.80@	246.65	0.26
4900.00	0.08	297.18	4899.78	100.00	26.85	11.74 S	27.47 W	29.88@	246.86	0.02
5000.00	0.11	291.31	4999.78	100.00	27.00	11.68 S	27.62 W	29.99@	247.09	0.03
5100.00	0.17	263.76	5099.78	100.00	27.24	11.66 S	27.86 W	30.20@	247.30	0.09
5200.00	0.23	178.55	5199.78	100.00	27.37	11.87 S	28.00 W	30.42@	247.02	0.27

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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)
5300.00	0.41	141.19	5299.78	100.00	27.12	12.35 S	27.77 W	30.40@	246.02	0.27
5400.00	0.32	147.69	5399.78	100.00	26.72	12.87 S	27.40 W	30.27@	244.84	0.10
5500.00	0.31	148.01	5499.78	100.00	26.40	13.33 S	27.11 W	30.21@	243.81	0.01
5600.00	0.39	149.74	5599.78	100.00	26.06	13.86 S	26.79 W	30.16@	242.65	0.08
5700.00	0.53	95.37	5699.77	100.00	25.41	14.19 S	26.16 W	29.76@	241.52	0.44
5800.00	0.86	93.28	5799.76	100.00	24.20	14.28 S	24.95 W	28.75@	240.22	0.33
5900.00	1.07	77.28	5899.75	100.00	22.55	14.12 S	23.29 W	27.24@	238.78	0.34
** TIED INTO SCIENTIFIC DRILLING GYROSCOPIC SURVEY AT 6000' MD.										
6000.00	1.72	78.41	5999.72	100.00	20.20	13.61 S	20.91 W	24.95@	236.94	0.65
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
6023.00	0.88	75.28	6022.71	23.00	19.70	13.50 S	20.40 W	24.46@	236.51	3.66
6055.00	1.06	275.41	6054.71	32.00	19.76	13.41 S	20.46 W	24.46@	236.76	5.97
6086.00	4.75	277.25	6085.67	31.00	21.33	13.22 S	22.02 W	25.68@	239.02	11.91
6118.00	8.53	276.05	6117.45	32.00	25.02	12.80 S	25.69 W	28.70@	243.52	11.82
6150.00	12.31	274.44	6148.91	32.00	30.80	12.28 S	31.46 W	33.77@	248.67	11.85
6182.00	16.27	272.15	6179.92	32.00	38.69	11.85 S	39.34 W	41.09@	253.23	12.50
6213.00	20.05	272.38	6209.37	31.00	48.35	11.47 S	48.99 W	50.32@	256.83	12.19
6245.00	23.83	273.45	6239.05	32.00	60.31	10.85 S	60.93 W	61.89@	259.90	11.88
6277.00	27.44	275.08	6267.89	32.00	74.14	9.81 S	74.73 W	75.37@	262.52	11.49
6309.00	31.22	274.87	6295.78	32.00	89.81	8.45 S	90.34 W	90.74@	264.66	11.82
6340.00	34.82	275.02	6321.77	31.00	106.68	6.99 S	107.17 W	107.40@	266.27	11.62
6372.00	38.87	275.13	6347.38	32.00	125.86	5.30 S	126.28 W	126.39@	267.60	12.66
6404.00	42.82	274.90	6371.58	32.00	146.77	3.47 S	147.13 W	147.17@	268.65	12.35
6435.00	46.78	274.40	6393.57	31.00	168.59	1.70 S	168.89 W	168.90@	269.42	12.83
6467.00	50.74	273.69	6414.66	32.00	192.65	0.01 S	192.89 W	192.89@	270.00	12.49
6499.00	54.78	272.84	6434.02	32.00	218.12	1.44 N	218.32 W	218.32@	270.38	12.80
6531.00	59.00	272.17	6451.50	32.00	244.91	2.60 N	245.09 W	245.11@	270.61	13.30
6563.00	63.40	272.36	6466.91	32.00	272.95	3.71 N	273.10 W	273.13@	270.78	13.76
6594.00	67.88	273.01	6479.69	31.00	301.18	5.04 N	301.31 W	301.35@	270.96	14.58

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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)
6625.00	71.84	274.01	6490.37	31.00	330.28	6.82 N	330.35 W	330.42@	271.18	13.13
6657.00	74.57	274.46	6499.61	32.00	360.90	9.09 N	360.90 W	361.01@	271.44	8.64
6688.00	77.03	274.79	6507.22	31.00	390.94	11.51 N	390.85 W	391.02@	271.69	8.00
6720.00	79.14	274.87	6513.82	32.00	422.23	14.15 N	422.05 W	422.29@	271.92	6.60
6752.00	79.67	275.18	6519.71	32.00	453.66	16.90 N	453.38 W	453.70@	272.13	1.91
6784.00	83.19	275.25	6524.47	32.00	485.27	19.78 N	484.89 W	485.29@	272.34	11.00
6815.00	85.30	275.11	6527.58	31.00	516.09	22.56 N	515.60 W	516.10@	272.51	6.82
6847.00	89.10	275.67	6529.15	32.00	548.01	25.56 N	547.42 W	548.02@	272.67	12.00
6879.00	89.78	275.61	6529.46	32.00	579.97	28.71 N	579.26 W	579.97@	272.84	2.13
6910.00	89.61	275.77	6529.62	31.00	610.94	31.78 N	610.11 W	610.94@	272.98	0.75
6941.00	89.10	275.34	6529.97	31.00	641.90	34.78 N	640.96 W	641.90@	273.11	2.15
6973.00	88.82	275.88	6530.55	32.00	673.86	37.91 N	672.80 W	673.87@	273.22	1.90
7005.00	90.78	275.85	6530.66	32.00	705.81	41.18 N	704.63 W	705.84@	273.34	6.13
7036.00	91.84	276.12	6529.96	31.00	736.76	44.41 N	735.46 W	736.80@	273.46	3.53
7068.00	91.90	276.44	6528.91	32.00	768.69	47.91 N	767.25 W	768.74@	273.57	1.02
7100.00	91.79	276.48	6527.88	32.00	800.61	51.51 N	799.03 W	800.69@	273.69	0.36
7132.00	92.18	276.37	6526.77	32.00	832.53	55.09 N	830.81 W	832.63@	273.79	1.27
7163.00	92.46	276.05	6525.52	31.00	863.45	58.44 N	861.60 W	863.58@	273.88	1.37
7195.00	91.51	276.00	6524.41	32.00	895.38	61.79 N	893.40 W	895.54@	273.96	2.97
7226.00	90.95	275.94	6523.74	31.00	926.33	65.02 N	924.23 W	926.51@	274.02	1.82
7258.00	90.67	275.89	6523.29	32.00	958.28	68.31 N	956.05 W	958.49@	274.09	0.89
7290.00	90.62	275.80	6522.93	32.00	990.23	71.57 N	987.89 W	990.48@	274.14	0.32
7321.00	91.12	275.66	6522.46	31.00	1021.19	74.67 N	1018.73 W	1021.46@	274.19	1.67
7353.00	92.01	274.21	6521.59	32.00	1053.16	77.42 N	1050.60 W	1053.44@	274.21	5.32
7385.00	92.24	274.02	6520.40	32.00	1085.13	79.71 N	1082.49 W	1085.42@	274.21	0.93
7417.00	91.62	272.57	6519.32	32.00	1117.11	81.55 N	1114.42 W	1117.40@	274.19	4.92
7448.00	91.68	272.87	6518.43	31.00	1148.10	83.02 N	1145.37 W	1148.38@	274.15	0.99
7480.00	92.58	272.85	6517.24	32.00	1180.07	84.62 N	1177.31 W	1180.35@	274.11	2.81

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7512.00	93.25	272.96	6515.61	32.00	1212.03	86.24 N	1209.23 W	1212.30@	274.08	2.12
7543.00	93.25	272.97	6513.86	31.00	1242.98	87.84 N	1240.14 W	1243.24@	274.05	0.03
7575.00	93.19	272.91	6512.06	32.00	1274.93	89.48 N	1272.04 W	1275.19@	274.02	0.27
7606.00	93.30	273.43	6510.30	31.00	1305.88	91.19 N	1302.95 W	1306.13@	274.00	1.71
7638.00	93.42	273.31	6508.43	32.00	1337.83	93.07 N	1334.84 W	1338.08@	273.99	0.53
7670.00	91.79	272.64	6506.97	32.00	1369.79	94.73 N	1366.76 W	1370.04@	273.96	5.51
7702.00	91.79	272.94	6505.97	32.00	1401.78	96.28 N	1398.70 W	1402.01@	273.94	0.94
7733.00	92.02	273.01	6504.94	31.00	1432.76	97.89 N	1429.65 W	1432.99@	273.92	0.78
7765.00	92.13	273.35	6503.79	32.00	1464.74	99.66 N	1461.58 W	1464.97@	273.90	1.12
7795.00	91.96	273.17	6502.71	30.00	1494.72	101.37 N	1491.51 W	1494.95@	273.89	0.82
7827.00	92.29	273.60	6501.53	32.00	1526.69	103.26 N	1523.43 W	1526.93@	273.88	1.69
7859.00	92.69	273.60	6500.14	32.00	1558.66	105.26 N	1555.34 W	1558.89@	273.87	1.25
7890.00	92.86	273.09	6498.64	31.00	1589.62	107.07 N	1586.25 W	1589.86@	273.86	1.73
7921.00	92.97	273.16	6497.06	31.00	1620.58	108.76 N	1617.16 W	1620.81@	273.85	0.42
7953.00	93.19	272.77	6495.34	32.00	1652.54	110.41 N	1649.07 W	1652.76@	273.83	1.40
7985.00	92.74	272.42	6493.69	32.00	1684.49	111.86 N	1681.00 W	1684.71@	273.81	1.78
8017.00	92.97	272.03	6492.09	32.00	1716.45	113.10 N	1712.93 W	1716.66@	273.78	1.41
8048.00	92.80	271.94	6490.53	31.00	1747.41	114.17 N	1743.87 W	1747.61@	273.75	0.62
8080.00	93.02	271.65	6488.91	32.00	1779.36	115.17 N	1775.82 W	1779.55@	273.71	1.14
8112.00	92.46	270.66	6487.38	32.00	1811.31	115.82 N	1807.77 W	1811.48@	273.67	3.55
8144.00	92.41	270.96	6486.02	32.00	1843.26	116.27 N	1839.74 W	1843.41@	273.62	0.95
8175.00	91.34	269.98	6485.00	31.00	1874.22	116.52 N	1870.72 W	1874.35@	273.56	4.68
8207.00	91.29	269.79	6484.27	32.00	1906.16	116.46 N	1902.72 W	1906.28@	273.50	0.61
8239.00	92.01	270.39	6483.35	32.00	1938.11	116.51 N	1934.70 W	1938.21@	273.45	2.93
8271.00	91.12	270.05	6482.47	32.00	1970.06	116.63 N	1966.69 W	1970.14@	273.39	2.98
8303.00	91.40	269.68	6481.77	32.00	2002.01	116.56 N	1998.68 W	2002.08@	273.34	1.45
8334.00	90.56	268.54	6481.24	31.00	2032.94	116.08 N	2029.67 W	2032.99@	273.27	4.57
8366.00	90.28	268.16	6481.01	32.00	2064.84	115.15 N	2061.66 W	2064.87@	273.20	1.48

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8398.00	90.56	269.06	6480.77	32.00	2096.75	114.38 N	2093.65 W	2096.77@	273.13	2.95
8430.00	90.95	268.31	6480.35	32.00	2128.66	113.64 N	2125.64 W	2128.67@	273.06	2.64
8462.00	89.83	267.36	6480.13	32.00	2160.54	112.43 N	2157.61 W	2160.54@	272.98	4.59
8494.00	89.89	266.98	6480.21	32.00	2192.38	110.85 N	2189.57 W	2192.38@	272.90	1.20
8525.00	90.17	266.97	6480.19	31.00	2223.21	109.22 N	2220.53 W	2223.21@	272.82	0.90
8557.00	90.34	266.86	6480.05	32.00	2255.04	107.50 N	2252.48 W	2255.05@	272.73	0.63
8589.00	89.83	266.53	6480.00	32.00	2286.85	105.65 N	2284.43 W	2286.87@	272.65	1.90
8621.00	90.06	266.35	6480.03	32.00	2318.65	103.66 N	2316.37 W	2318.69@	272.56	0.91
8652.00	89.50	267.06	6480.15	31.00	2349.47	101.88 N	2347.32 W	2349.53@	272.49	2.92
8684.00	89.38	267.63	6480.47	32.00	2381.32	100.40 N	2379.28 W	2381.40@	272.42	1.82
8716.00	89.72	267.14	6480.72	32.00	2413.17	98.94 N	2411.24 W	2413.27@	272.35	1.86
8748.00	89.44	267.49	6480.95	32.00	2445.02	97.44 N	2443.21 W	2445.15@	272.28	1.40
8780.00	89.10	267.92	6481.36	32.00	2476.89	96.16 N	2475.18 W	2477.05@	272.22	1.71
8811.00	89.27	267.65	6481.80	31.00	2507.76	94.96 N	2506.15 W	2507.95@	272.17	1.03
8843.00	89.22	268.46	6482.22	32.00	2539.64	93.88 N	2538.13 W	2539.87@	272.12	2.54
8875.00	89.44	268.63	6482.60	32.00	2571.55	93.06 N	2570.12 W	2571.80@	272.07	0.87
8906.00	89.66	268.13	6482.84	31.00	2602.45	92.19 N	2601.11 W	2602.74@	272.03	1.76
8938.00	90.06	267.77	6482.92	32.00	2634.33	91.04 N	2633.09 W	2634.66@	271.98	1.68
8970.00	89.16	268.61	6483.14	32.00	2666.23	90.03 N	2665.07 W	2666.59@	271.93	3.85
9002.00	89.05	269.21	6483.64	32.00	2698.14	89.42 N	2697.06 W	2698.54@	271.90	1.91
9034.00	88.82	269.86	6484.23	32.00	2730.09	89.16 N	2729.05 W	2730.51@	271.87	2.16
9066.00	88.60	270.42	6484.95	32.00	2762.04	89.24 N	2761.04 W	2762.49@	271.85	1.88
9098.00	90.06	271.26	6485.32	32.00	2794.02	89.71 N	2793.04 W	2794.48@	271.84	5.26
9129.00	90.84	271.73	6485.08	31.00	2825.01	90.52 N	2824.03 W	2825.48@	271.84	2.94
9161.00	90.78	271.63	6484.63	32.00	2857.00	91.46 N	2856.01 W	2857.47@	271.83	0.36
9193.00	91.23	272.92	6484.07	32.00	2888.99	92.73 N	2887.98 W	2889.47@	271.84	4.27
9225.00	91.46	273.65	6483.32	32.00	2920.98	94.56 N	2919.92 W	2921.45@	271.85	2.39
9256.00	91.51	273.75	6482.51	31.00	2951.96	96.56 N	2950.84 W	2952.42@	271.87	0.36

PathFinder Energy Services, Inc.

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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)
9288.00	92.18	273.78	6481.48	32.00	2983.94	98.66 N	2982.75 W	2984.39@	271.89	2.10
9320.00	92.18	273.91	6480.27	32.00	3015.92	100.81 N	3014.66 W	3016.34@	271.92	0.41
9352.00	92.24	274.11	6479.03	32.00	3047.89	103.04 N	3046.56 W	3048.30@	271.94	0.65
9384.00	92.47	273.81	6477.72	32.00	3079.85	105.25 N	3078.45 W	3080.25@	271.96	1.18
9416.00	92.46	273.92	6476.34	32.00	3111.82	107.40 N	3110.35 W	3112.21@	271.98	0.35
9447.00	91.46	274.01	6475.28	31.00	3142.80	109.55 N	3141.26 W	3143.17@	272.00	3.24
9479.00	91.29	274.29	6474.51	32.00	3174.78	111.86 N	3173.17 W	3175.14@	272.02	1.02
9511.00	91.46	274.24	6473.74	32.00	3206.76	114.24 N	3205.07 W	3207.10@	272.04	0.55
9543.00	91.51	274.23	6472.92	32.00	3238.74	116.60 N	3236.97 W	3239.07@	272.06	0.16
9574.00	91.68	274.17	6472.05	31.00	3269.72	118.87 N	3267.87 W	3270.04@	272.08	0.58
9606.00	90.11	274.54	6471.55	32.00	3301.70	121.30 N	3299.78 W	3302.01@	272.11	5.04
9638.00	89.50	274.85	6471.66	32.00	3333.69	123.92 N	3331.67 W	3333.97@	272.13	2.14
9670.00	89.78	274.88	6471.86	32.00	3365.67	126.64 N	3363.55 W	3365.94@	272.16	0.88
9701.00	89.83	275.11	6471.97	31.00	3396.65	129.33 N	3394.44 W	3396.90@	272.18	0.76
9733.00	89.50	274.97	6472.15	32.00	3428.62	132.15 N	3426.31 W	3428.86@	272.21	1.12
9765.00	89.33	274.91	6472.48	32.00	3460.60	134.90 N	3458.19 W	3460.82@	272.23	0.56
9796.00	89.22	275.18	6472.87	31.00	3491.58	137.63 N	3489.07 W	3491.78@	272.26	0.94
9828.00	89.83	274.98	6473.14	32.00	3523.55	140.46 N	3520.94 W	3523.74@	272.28	2.01
9860.00	89.94	274.83	6473.20	32.00	3555.53	143.20 N	3552.82 W	3555.71@	272.31	0.58
9891.00	89.61	274.71	6473.33	31.00	3586.51	145.77 N	3583.72 W	3586.68@	272.33	1.13
9923.00	89.44	274.99	6473.59	32.00	3618.49	148.48 N	3615.60 W	3618.65@	272.35	1.02
9955.00	89.55	274.85	6473.87	32.00	3650.47	151.22 N	3647.48 W	3650.61@	272.37	0.56
9986.00	89.94	274.72	6474.01	31.00	3681.45	153.81 N	3678.37 W	3681.59@	272.39	1.33
10018.00	90.22	274.64	6473.97	32.00	3713.44	156.42 N	3710.27 W	3713.56@	272.41	0.91
10050.00	90.67	274.60	6473.72	32.00	3745.42	159.00 N	3742.16 W	3745.54@	272.43	1.41
10082.00	90.45	274.32	6473.40	32.00	3777.41	161.49 N	3774.06 W	3777.52@	272.45	1.11
10114.00	90.78	273.88	6473.06	32.00	3809.40	163.77 N	3805.98 W	3809.50@	272.46	1.72
10144.00	90.84	273.50	6472.64	30.00	3839.39	165.71 N	3835.91 W	3839.49@	272.47	1.28

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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)
						(ft)	(ft)	(ft)	(deg)	
10176.00	90.84	273.49	6472.17	32.00	3871.39	167.66 N	3867.85 W	3871.48@	272.48	0.03
10208.00	90.73	273.30	6471.73	32.00	3903.38	169.55 N	3899.79 W	3903.48@	272.49	0.69
10240.00	90.50	273.38	6471.39	32.00	3935.38	171.41 N	3931.73 W	3935.47@	272.50	0.76
10271.00	90.73	273.17	6471.05	31.00	3966.38	173.19 N	3962.68 W	3966.47@	272.50	1.00
10303.00	90.84	273.15	6470.61	32.00	3998.38	174.95 N	3994.63 W	3998.46@	272.51	0.35
10335.00	91.73	273.21	6469.90	32.00	4030.37	176.72 N	4026.57 W	4030.45@	272.51	2.79
10367.00	91.90	273.06	6468.88	32.00	4062.35	178.47 N	4058.51 W	4062.43@	272.52	0.71
10398.00	91.57	273.02	6467.94	31.00	4093.34	180.12 N	4089.45 W	4093.42@	272.52	1.07
10430.00	90.89	272.91	6467.26	32.00	4125.33	181.77 N	4121.40 W	4125.41@	272.53	2.15
10462.00	90.28	272.61	6466.93	32.00	4157.33	183.31 N	4153.36 W	4157.41@	272.53	2.12
10494.00	90.95	272.52	6466.59	32.00	4189.32	184.74 N	4185.33 W	4189.40@	272.53	2.11
10524.00	90.95	272.39	6466.09	30.00	4219.32	186.03 N	4215.30 W	4219.40@	272.53	0.43
10556.00	90.78	272.34	6465.61	32.00	4251.31	187.35 N	4247.27 W	4251.40@	272.53	0.55
10588.00	90.62	272.26	6465.22	32.00	4283.31	188.63 N	4279.24 W	4283.39@	272.52	0.56
10619.00	90.62	272.16	6464.88	31.00	4314.31	189.83 N	4310.21 W	4314.39@	272.52	0.32
10650.00	90.39	272.22	6464.61	31.00	4345.30	191.01 N	4341.19 W	4345.39@	272.52	0.77
10681.00	90.39	272.34	6464.40	31.00	4376.30	192.25 N	4372.16 W	4376.39@	272.52	0.39
10712.00	91.68	272.99	6463.84	31.00	4407.29	193.69 N	4403.12 W	4407.38@	272.52	4.66
10744.00	92.41	273.23	6462.69	32.00	4439.27	195.42 N	4435.06 W	4439.36@	272.52	2.40
10776.00	91.90	273.17	6461.49	32.00	4471.25	197.21 N	4466.98 W	4471.33@	272.53	1.60
10807.00	91.51	272.94	6460.57	31.00	4502.24	198.86 N	4497.93 W	4502.32@	272.53	1.46
10839.00	91.46	272.71	6459.74	32.00	4534.23	200.44 N	4529.88 W	4534.31@	272.53	0.74
10869.00	91.01	272.26	6459.09	30.00	4564.22	201.74 N	4559.84 W	4564.30@	272.53	2.12
10901.00	91.01	272.39	6458.53	32.00	4596.21	203.03 N	4591.81 W	4596.30@	272.53	0.41
10933.00	91.29	272.89	6457.89	32.00	4628.20	204.51 N	4623.77 W	4628.29@	272.53	1.79
10964.00	91.51	273.63	6457.13	31.00	4659.19	206.27 N	4654.71 W	4659.28@	272.54	2.49
10993.00	91.85	274.25	6456.28	29.00	4688.18	208.26 N	4683.63 W	4688.26@	272.55	2.44
STRAIGHT LINE PROJECTION TO BIT AT 11050' MD.										
11050.00	91.85	274.25	6454.44	57.00	4745.13	212.48 N	4740.44 W	4745.20@	272.57	0.00

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** 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.