



GASTAR EXPLORATION USA, INC.

Location: Marshall County, WV
 Field: Marshall
 Facility: Hansen Unit

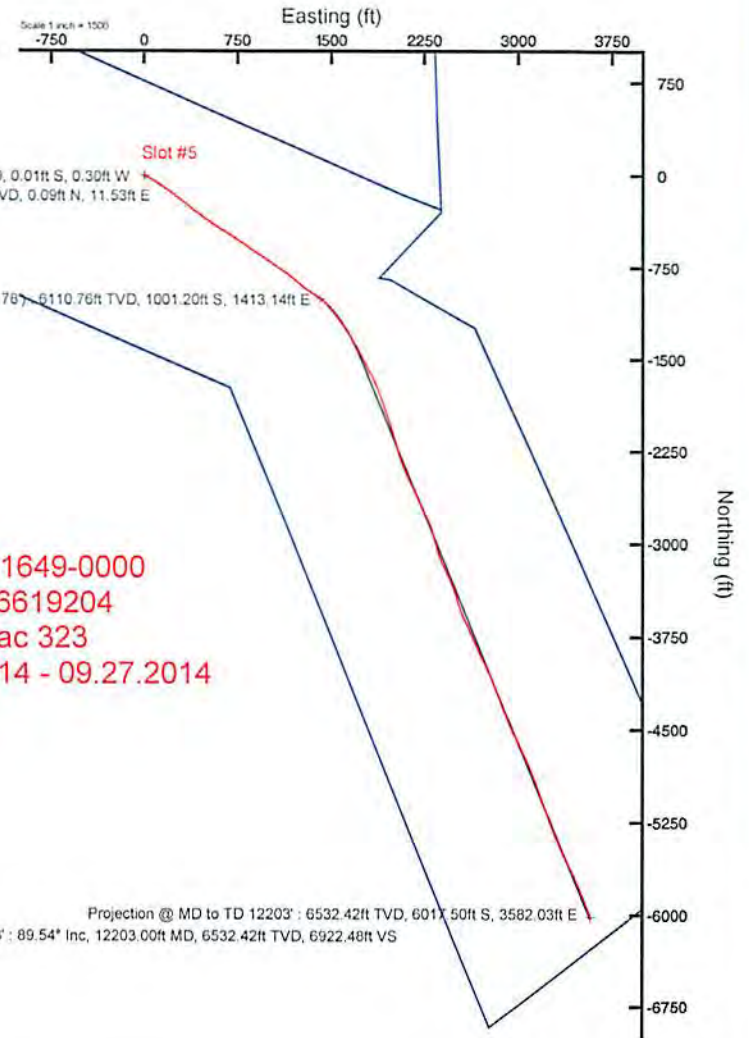
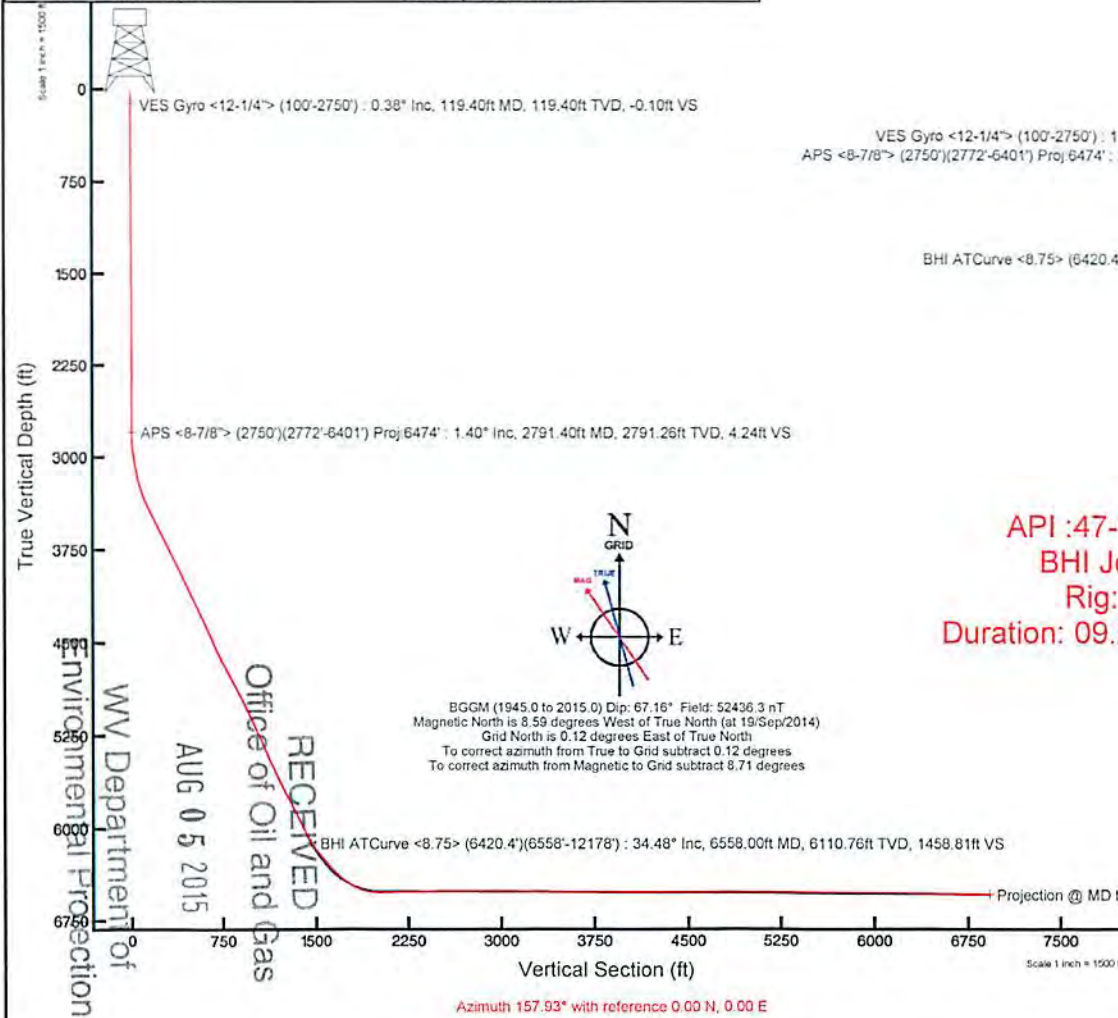
Slot: Slot #5
 Well: Hansen Unit 5H
 Wellbore: Hansen Unit 5H (PWB)



51-01649

Location Information				
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Hansen Unit	1692627.590	14427215.002	39°43'35.573"N	80°48'51.498"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
Slot #5	79.28	10.90	1692638.450	14427294.250
			Latitude	Longitude
			39°43'36.356"N	80°48'51.356"W
Nomac 323 (RT) to Mud line (At Slot: Slot #5)			29.4ft	
Mean Sea Level to Mud line (At Slot: Slot #5)			-1245ft	
Nomac 323 (RT) to Mean Sea Level			1274.4ft	
Plot reference wellpath is Hansen Unit 5H Rev-B.0				
True vertical depths are referenced to Nomac 323 (RT)			Grid System: NAD83 / UTM Zone 17 North, US feet	
Measured depths are referenced to Nomac 323 (RT)			North Reference: Grid north	
Nomac 323 (RT) to Mean Sea Level: 1274.4 feet			Scale: True distance	
Mean Sea Level to Mud line (At Slot: Slot #5): -1245 feet			Depths are in feet	
Coordinates are in feet referenced to Slot			Created by: harejuk on 02/Oct/2014	

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #5	Hansen Unit 5H	Hansen Unit 5H (PWB)	Hansen Unit 5H Rev-B.0
Slot #5	Hansen Unit 5H	Hansen Unit 5H AWB	Hansen Unit 5H AWP Proj: 12203'



API :47-051-01649-0000
 BHI Job #: 6619204
 Rig: Nomac 323
 Duration: 09.23.2014 - 09.27.2014

51-01649

REFERENCE WELLPATH IDENTIFICATION

Operator	GASTAR EXPLORATION INC.	Slot	Slot #5
Area	Marshall County, WV	Well	Hansen 5H
Field	Marshall	Wellbore	Hansen 5H (AWB)
Facility	Hansen Unit	Wellpath	Hansen 5H (AWP) Proj: 12,203'
		Sidetrack	(none)

WELLPATH DATA † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [M]	Grid North [M]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]
0.00	0.00	267.12	0.00	0.00	0.00	0.00	515917.3	4397448.1	39°43'36.356"N	80°48'51.356"W	0.00	0.00	0.00
29.40	0.00	267.12	29.40	0.00	0.00	0.00	515917.3	4397448.1	39°43'36.356"N	80°48'51.356"W	0.00	0.00	0.00
119.40	0.38	267.12	119.40	-0.10	-0.01	-0.30	515917.3	4397448.1	39°43'36.356"N	80°48'51.360"W	0.30	267.12	0.42
219.40	0.43	250.60	219.40	-0.22	-0.16	-0.98	515916.9	4397448.0	39°43'36.355"N	80°48'51.369"W	1.00	260.97	0.13
319.40	0.49	252.48	319.39	-0.28	-0.41	-1.74	515916.7	4397448.0	39°43'36.352"N	80°48'51.379"W	1.79	256.79	0.06
419.40	0.27	253.59	419.39	-0.33	-0.60	-2.38	515916.5	4397447.9	39°43'36.350"N	80°48'51.387"W	2.45	255.73	0.22
519.40	0.33	221.90	519.39	-0.23	-0.89	-2.80	515916.4	4397447.8	39°43'36.348"N	80°48'51.392"W	2.93	252.43	0.17
619.40	0.39	193.33	619.39	0.17	-1.43	-3.07	515916.3	4397447.6	39°43'36.342"N	80°48'51.396"W	3.39	244.99	0.19
719.40	0.47	193.50	719.39	0.78	-2.16	-3.24	515916.3	4397447.4	39°43'36.335"N	80°48'51.398"W	3.90	236.31	0.08
819.40	0.43	201.53	819.38	1.39	-2.91	-3.48	515916.2	4397447.2	39°43'36.328"N	80°48'51.401"W	4.53	230.07	0.07
919.40	0.46	202.23	919.38	1.95	-3.63	-3.77	515916.1	4397447.0	39°43'36.320"N	80°48'51.405"W	5.23	226.05	0.03
1019.40	0.22	201.91	1019.38	2.37	-4.18	-3.99	515916.0	4397446.8	39°43'36.315"N	80°48'51.407"W	5.78	223.66	0.24
1119.40	0.06	202.87	1119.38	2.55	-4.41	-4.08	515916.0	4397446.7	39°43'36.313"N	80°48'51.409"W	6.01	222.80	0.16
1219.40	0.13	213.25	1219.38	2.65	-4.55	-4.16	515916.0	4397446.7	39°43'36.311"N	80°48'51.410"W	6.17	222.46	0.07
1319.40	0.17	112.46	1319.38	2.82	-4.70	-4.09	515916.0	4397446.7	39°43'36.310"N	80°48'51.409"W	6.23	221.01	0.23
1419.40	0.33	108.34	1419.38	3.11	-4.85	-3.68	515916.1	4397446.6	39°43'36.308"N	80°48'51.404"W	6.09	217.19	0.16
1519.40	0.26	110.25	1519.37	3.45	-5.02	-3.19	515916.3	4397446.6	39°43'36.307"N	80°48'51.397"W	5.95	212.46	0.07
1619.40	0.30	90.08	1619.37	3.70	-5.10	-2.72	515916.4	4397446.5	39°43'36.306"N	80°48'51.391"W	5.77	208.06	0.11
1719.40	0.51	90.05	1719.37	3.97	-5.10	-2.01	515916.6	4397446.5	39°43'36.306"N	80°48'51.382"W	5.48	201.52	0.21
1819.40	0.91	92.21	1819.36	4.46	-5.13	-0.77	515917.0	4397446.5	39°43'36.306"N	80°48'51.366"W	5.19	188.56	0.40
1919.40	1.05	98.32	1919.35	5.25	-5.29	0.93	515917.5	4397446.5	39°43'36.304"N	80°48'51.345"W	5.37	170.05	0.17
2019.40	0.87	89.80	2019.33	6.00	-5.42	2.59	515918.0	4397446.4	39°43'36.303"N	80°48'51.323"W	6.01	154.42	0.23
2119.40	0.77	72.80	2119.32	6.34	-5.22	4.00	515918.5	4397446.5	39°43'36.305"N	80°48'51.305"W	6.57	142.57	0.26
2219.40	0.76	70.53	2219.32	6.43	-4.80	5.26	515918.8	4397446.6	39°43'36.309"N	80°48'51.289"W	7.12	132.37	0.03
2319.40	0.86	61.59	2319.31	6.37	-4.22	6.55	515919.2	4397446.8	39°43'36.314"N	80°48'51.273"W	7.79	122.81	0.16

Department of Environmental Protection
 2015
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 Office of Oil and Gas

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MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [M]	Grid North [M]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]
2419.40	0.92	50.65	2419.29	6.05	-3.36	7.83	515919.6	4397447.1	39°43'36.323"N	80°48'51.256"W	8.52	113.20	0.18
2519.40	0.78	44.57	2519.28	5.54	-2.36	8.93	515920.0	4397447.4	39°43'36.333"N	80°48'51.242"W	9.23	104.82	0.17
2619.40	0.74	45.47	2619.27	5.03	-1.42	9.87	515920.2	4397447.6	39°43'36.342"N	80°48'51.230"W	9.97	98.21	0.04
2719.40	0.74	42.41	2719.27	4.50	-0.49	10.76	515920.5	4397447.9	39°43'36.351"N	80°48'51.219"W	10.77	92.63	0.04
2769.40	0.70	39.29	2769.26	4.22	-0.02	11.17	515920.6	4397448.1	39°43'36.356"N	80°48'51.213"W	11.17	90.10	0.11
2791.40	1.40	88.19	2791.26	4.24	0.09	11.53	515920.8	4397448.1	39°43'36.357"N	80°48'51.209"W	11.53	89.54	4.90
2823.40	2.47	114.99	2823.24	4.88	-0.19	12.54	515921.1	4397448.0	39°43'36.354"N	80°48'51.196"W	12.54	90.85	4.29
2855.40	3.80	123.04	2855.19	6.26	-1.06	14.06	515921.5	4397447.8	39°43'36.346"N	80°48'51.176"W	14.10	94.29	4.37
2887.40	5.08	123.58	2887.09	8.30	-2.42	16.13	515922.2	4397447.3	39°43'36.332"N	80°48'51.150"W	16.31	98.53	4.00
2918.40	6.70	126.53	2917.93	10.98	-4.25	18.72	515922.9	4397446.8	39°43'36.314"N	80°48'51.117"W	19.20	102.80	5.31
2950.40	8.21	127.13	2949.66	14.53	-6.74	22.04	515924.0	4397446.0	39°43'36.289"N	80°48'51.074"W	23.05	107.01	4.72
2981.40	9.48	127.93	2980.29	18.64	-9.65	25.82	515925.1	4397445.1	39°43'36.260"N	80°48'51.026"W	27.57	110.49	4.12
3013.40	10.77	123.64	3011.79	23.40	-12.93	30.39	515926.5	4397444.1	39°43'36.228"N	80°48'50.968"W	33.02	113.04	4.67
3043.40	11.90	120.62	3041.21	28.17	-16.05	35.39	515928.0	4397443.2	39°43'36.197"N	80°48'50.904"W	38.86	114.40	4.25
3075.40	12.48	118.66	3072.48	33.47	-19.39	41.26	515929.8	4397442.2	39°43'36.164"N	80°48'50.829"W	45.59	115.17	2.23
3107.40	13.77	117.50	3103.65	39.05	-22.81	47.67	515931.8	4397441.1	39°43'36.130"N	80°48'50.747"W	52.85	115.57	4.11
3139.40	15.19	118.12	3134.63	45.17	-26.54	54.75	515933.9	4397440.0	39°43'36.093"N	80°48'50.656"W	60.84	115.87	4.46
3170.40	16.45	119.42	3164.46	51.72	-30.61	62.15	515936.2	4397438.8	39°43'36.052"N	80°48'50.562"W	69.28	116.22	4.22
3202.40	17.76	119.01	3195.04	59.07	-35.21	70.37	515938.7	4397437.4	39°43'36.007"N	80°48'50.457"W	78.68	116.58	4.11
3233.40	19.48	119.83	3224.42	66.81	-40.07	78.99	515941.3	4397435.9	39°43'35.959"N	80°48'50.346"W	88.57	116.90	5.61
3265.40	21.00	121.91	3254.44	75.65	-45.76	88.48	515944.2	4397434.1	39°43'35.902"N	80°48'50.225"W	99.61	117.34	5.25
3296.40	22.34	124.12	3283.25	85.04	-52.00	98.08	515947.1	4397432.2	39°43'35.840"N	80°48'50.102"W	111.01	117.93	5.06
3328.40	24.39	125.40	3312.62	95.66	-59.24	108.50	515950.3	4397430.0	39°43'35.769"N	80°48'49.969"W	123.62	118.63	6.60
3359.40	26.29	125.30	3340.64	106.84	-66.91	119.32	515953.6	4397427.7	39°43'35.693"N	80°48'49.831"W	136.80	119.28	6.13
3391.40	27.76	125.69	3369.14	119.12	-75.36	131.16	515957.2	4397425.1	39°43'35.609"N	80°48'49.680"W	151.26	119.88	4.63
3422.40	29.74	124.56	3396.32	131.64	-83.93	143.35	515960.9	4397422.5	39°43'35.524"N	80°48'49.524"W	166.12	120.35	6.62
3454.40	31.36	124.76	3423.88	145.24	-93.18	156.73	515965.0	4397419.7	39°43'35.432"N	80°48'49.353"W	182.34	120.73	5.07
3486.40	32.11	123.87	3451.09	159.26	-102.67	170.63	515969.2	4397416.8	39°43'35.338"N	80°48'49.175"W	199.14	121.04	2.76
3517.40	31.70	124.08	3477.41	172.85	-111.82	184.22	515973.4	4397414.0	39°43'35.247"N	80°48'49.002"W	215.50	121.26	1.37
3549.40	31.47	124.26	3504.67	186.78	-121.24	198.09	515977.6	4397411.1	39°43'35.154"N	80°48'48.824"W	232.25	121.47	0.78
3621.40	30.36	126.75	3557.86	213.66	-139.72	224.02	515985.5	4397405.5	39°43'34.971"N	80°48'48.493"W	264.02	121.95	2.73

67910-15

WELL PATH DATA † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [M]	Grid North [M]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]
3674.40	29.76	129.09	3612.39	240.98	-159.11	248.91	515993.1	4397399.6	39°43'34.779"N	80°48'48.175"W	295.42	122.59	2.09
3737.40	29.81	128.23	3667.07	268.28	-178.66	273.35	516000.5	4397393.6	39°43'34.585"N	80°48'47.863"W	326.56	123.17	0.68
3800.40	30.28	128.32	3721.60	295.69	-198.20	298.11	516008.1	4397387.7	39°43'34.391"N	80°48'47.546"W	357.99	123.62	0.75
3863.40	29.99	128.48	3776.09	323.21	-217.84	322.90	516015.6	4397381.7	39°43'34.197"N	80°48'47.229"W	389.51	124.01	0.48
3927.40	29.12	129.10	3831.76	350.78	-237.62	347.51	516023.1	4397375.7	39°43'34.001"N	80°48'46.915"W	420.98	124.36	1.44
3990.40	29.92	128.27	3886.58	377.86	-257.02	371.74	516030.5	4397369.8	39°43'33.809"N	80°48'46.605"W	451.94	124.66	1.43
4053.40	29.90	126.75	3941.19	404.95	-276.14	396.66	516038.1	4397363.9	39°43'33.619"N	80°48'46.287"W	483.31	124.85	1.20
4116.40	29.26	125.92	3995.98	431.44	-294.57	421.71	516045.7	4397358.3	39°43'33.436"N	80°48'45.967"W	514.40	124.94	1.21
4179.40	29.09	126.82	4050.99	457.61	-312.78	446.44	516053.3	4397352.8	39°43'33.256"N	80°48'45.651"W	545.10	125.02	0.75
4242.40	29.86	127.33	4105.83	484.22	-331.47	471.17	516060.8	4397347.1	39°43'33.071"N	80°48'45.335"W	576.08	125.13	1.29
4306.40	30.10	125.92	4161.27	511.54	-350.55	496.83	516068.6	4397341.3	39°43'32.882"N	80°48'45.007"W	608.05	125.21	1.16
4368.40	29.41	125.13	4215.10	537.52	-368.43	521.87	516076.2	4397335.8	39°43'32.704"N	80°48'44.687"W	638.82	125.22	1.28
4431.40	30.03	124.93	4269.81	563.74	-386.36	547.45	516084.0	4397330.4	39°43'32.527"N	80°48'44.360"W	670.05	125.21	1.00
4494.40	30.57	124.75	4324.20	590.37	-404.51	573.54	516092.0	4397324.8	39°43'32.347"N	80°48'44.027"W	701.84	125.20	0.87
4558.40	29.82	123.13	4379.52	617.06	-422.49	600.24	516100.1	4397319.4	39°43'32.169"N	80°48'43.685"W	734.02	125.14	1.73
4620.40	28.94	121.79	4433.55	641.84	-438.82	625.90	516107.9	4397314.4	39°43'32.007"N	80°48'43.357"W	764.40	125.03	1.77
4684.40	28.36	120.25	4489.71	666.37	-454.63	652.19	516116.0	4397309.6	39°43'31.850"N	80°48'43.021"W	795.01	124.88	1.47
4747.40	29.21	122.85	4544.93	690.80	-470.51	678.03	516123.8	4397304.7	39°43'31.692"N	80°48'42.691"W	825.29	124.76	2.40
4811.40	29.58	124.28	4600.69	716.73	-487.88	704.20	516131.8	4397299.4	39°43'31.520"N	80°48'42.357"W	856.69	124.72	1.24
4874.40	32.96	126.35	4654.53	744.28	-506.80	730.86	516139.9	4397293.7	39°43'31.333"N	80°48'42.016"W	889.39	124.74	5.63
4937.40	33.26	124.07	4707.30	773.22	-526.64	758.98	516148.5	4397287.6	39°43'31.136"N	80°48'41.657"W	923.79	124.76	2.03
5000.40	32.71	124.61	4760.15	801.80	-545.98	787.30	516157.1	4397281.7	39°43'30.944"N	80°48'41.295"W	958.09	124.74	0.99
5062.40	32.66	123.78	4812.33	829.64	-564.80	814.99	516165.6	4397276.0	39°43'30.758"N	80°48'40.941"W	991.57	124.72	0.73
5124.40	32.35	124.89	4864.62	857.39	-583.59	842.50	516173.9	4397270.3	39°43'30.571"N	80°48'40.589"W	1024.88	124.71	1.08
5188.40	30.81	125.91	4919.14	885.64	-603.00	869.82	516182.3	4397264.4	39°43'30.379"N	80°48'40.240"W	1058.40	124.73	2.55
5251.40	30.24	123.86	4973.41	912.46	-621.30	896.07	516190.3	4397258.8	39°43'30.198"N	80°48'39.905"W	1090.39	124.74	1.88
5315.40	29.70	123.60	5028.85	938.91	-639.05	922.65	516198.4	4397253.4	39°43'30.022"N	80°48'39.565"W	1122.36	124.71	0.87
5378.40	29.32	126.00	5083.68	964.89	-656.76	948.13	516206.1	4397248.0	39°43'29.846"N	80°48'39.239"W	1153.38	124.71	1.97
5441.40	29.45	124.42	5138.58	990.89	-674.58	973.39	516213.8	4397242.6	39°43'29.669"N	80°48'38.916"W	1184.29	124.72	1.25
5504.40	29.06	123.44	5193.54	1016.42	-691.77	998.93	516221.6	4397237.3	39°43'29.499"N	80°48'38.590"W	1215.07	124.70	0.98
5567.40	27.78	127.19	5248.95	1041.65	-709.07	1023.40	516229.1	4397232.0	39°43'29.328"N	80°48'38.277"W	1245.04	124.72	3.49

51-01649

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5630.40	27.56	127.39	5304.75	1066.82	-726.80	1046.67	516236.1	4397226.6	39°43'29.152"N	80°48'37.980"W	1274.27	124.78	0.38
5693.40	27.84	125.43	5360.53	1091.78	-744.18	1070.24	516243.3	4397221.3	39°43'28.980"N	80°48'37.679"W	1303.54	124.81	1.51
5757.40	28.02	124.10	5417.07	1116.87	-761.27	1094.87	516250.8	4397216.1	39°43'28.810"N	80°48'37.364"W	1333.51	124.81	1.01
5820.40	28.84	123.19	5472.48	1141.65	-777.88	1119.84	516258.4	4397211.1	39°43'28.645"N	80°48'37.045"W	1363.50	124.79	1.47
5883.40	28.08	126.94	5527.87	1166.85	-795.11	1144.41	516265.9	4397205.8	39°43'28.475"N	80°48'36.731"W	1393.51	124.79	3.08
5946.40	28.72	129.62	5583.29	1192.89	-813.68	1167.92	516273.1	4397200.2	39°43'28.291"N	80°48'36.431"W	1423.41	124.87	2.26
6010.40	28.71	130.73	5639.42	1220.10	-833.51	1191.41	516280.2	4397194.1	39°43'28.094"N	80°48'36.130"W	1454.03	124.98	0.83
6073.40	29.07	131.94	5694.58	1247.31	-853.62	1214.26	516287.2	4397188.0	39°43'27.895"N	80°48'35.838"W	1484.28	125.11	1.09
6136.40	29.32	131.14	5749.57	1274.84	-873.99	1237.26	516294.2	4397181.8	39°43'27.693"N	80°48'35.545"W	1514.82	125.24	0.74
6199.40	30.46	129.74	5804.19	1302.69	-894.35	1261.16	516301.5	4397175.6	39°43'27.491"N	80°48'35.239"W	1546.09	125.34	2.12
6262.40	31.27	127.09	5858.27	1330.80	-914.42	1286.48	516309.2	4397169.5	39°43'27.293"N	80°48'34.916"W	1578.36	125.41	2.51
6325.40	31.00	123.77	5912.20	1358.27	-933.30	1313.02	516317.3	4397163.7	39°43'27.105"N	80°48'34.577"W	1610.92	125.41	2.76
6388.40	30.33	122.16	5966.39	1384.60	-950.79	1339.97	516325.5	4397158.4	39°43'26.932"N	80°48'34.232"W	1643.02	125.36	1.68
6420.40	29.57	122.59	5994.12	1397.59	-959.34	1353.46	516329.6	4397155.8	39°43'26.847"N	80°48'34.060"W	1658.97	125.33	2.47
6558.00	34.48	127.19	6110.76	1458.81	-1001.20	1413.14	516347.8	4397143.0	39°43'26.432"N	80°48'33.297"W	1731.87	125.32	3.98
6653.00	42.60	136.43	6185.07	1511.97	-1040.85	1456.83	516361.1	4397131.0	39°43'26.040"N	80°48'32.739"W	1790.46	125.54	10.46
6748.00	41.19	140.51	6255.79	1571.75	-1088.30	1498.90	516373.9	4397116.5	39°43'25.570"N	80°48'32.202"W	1852.32	125.98	3.23
6843.00	44.23	143.75	6325.60	1633.74	-1139.18	1538.40	516386.0	4397101.0	39°43'25.066"N	80°48'31.698"W	1914.26	126.52	3.95
6938.00	49.24	143.93	6390.69	1700.82	-1195.02	1579.20	516398.4	4397084.0	39°43'24.513"N	80°48'31.177"W	1980.39	127.12	5.28
7032.00	58.21	146.49	6446.25	1774.68	-1257.24	1622.31	516411.5	4397065.0	39°43'23.898"N	80°48'30.627"W	2052.44	127.78	9.79
7128.00	68.61	149.89	6489.18	1859.17	-1330.13	1667.39	516425.3	4397042.8	39°43'23.176"N	80°48'30.052"W	2132.94	128.58	11.28
7222.00	82.44	150.78	6512.61	1949.17	-1409.04	1712.30	516438.9	4397018.8	39°43'22.395"N	80°48'29.480"W	2217.51	129.45	14.74
7316.00	92.09	152.56	6517.10	2042.39	-1491.59	1756.80	516452.5	4396993.6	39°43'21.579"N	80°48'28.912"W	2304.60	130.33	10.44
7411.00	91.05	152.60	6514.49	2136.94	-1575.88	1800.53	516465.8	4396967.9	39°43'20.745"N	80°48'28.355"W	2392.76	131.19	1.10
7506.00	89.85	155.29	6513.75	2231.70	-1661.22	1842.25	516478.5	4396941.9	39°43'19.900"N	80°48'27.823"W	2480.63	132.04	3.10
7601.00	91.35	159.56	6512.75	2326.66	-1748.91	1878.71	516489.6	4396915.2	39°43'19.033"N	80°48'27.359"W	2566.76	132.95	4.76
7696.00	92.16	159.37	6509.84	2421.58	-1837.83	1912.02	516499.8	4396888.1	39°43'18.154"N	80°48'26.935"W	2652.06	133.87	0.88
7791.00	91.14	161.42	6507.11	2516.45	-1927.28	1943.88	516509.5	4396860.9	39°43'17.269"N	80°48'26.530"W	2737.35	134.75	2.41
7886.00	89.97	161.89	6506.19	2611.24	-2017.45	1973.78	516518.6	4396833.4	39°43'16.377"N	80°48'26.150"W	2822.39	135.63	1.33
7981.00	89.85	163.91	6506.33	2705.88	-2108.24	2001.71	516527.1	4396805.7	39°43'15.479"N	80°48'25.795"W	2907.15	136.49	2.13
8076.00	89.38	163.52	6506.97	2800.39	-2199.43	2028.35	516535.2	4396778.0	39°43'14.578"N	80°48'25.457"W	2991.94	137.32	0.64

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 MARCH 2015

WELL PATH DATA † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [M]	Grid North [M]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]
8172.00	89.66	163.27	6507.78	2895.95	-2291.42	2055.78	516543.6	4396749.9	39°43'13.668"N	80°48'25.108"W	3078.45	138.10	0.39
8265.00	89.60	158.32	6508.38	2988.81	-2379.22	2086.36	516552.9	4396723.2	39°43'12.799"N	80°48'24.719"W	3164.42	138.75	5.32
8359.00	89.51	156.04	6509.11	3082.79	-2465.85	2122.82	516564.0	4396696.8	39°43'11.943"N	80°48'24.255"W	3253.73	139.28	2.43
8452.00	89.51	152.72	6509.90	3175.60	-2549.69	2163.02	516576.3	4396671.2	39°43'11.113"N	80°48'23.743"W	3343.59	139.69	3.57
8547.00	89.48	156.71	6510.74	3270.42	-2635.57	2203.59	516588.6	4396645.1	39°43'10.263"N	80°48'23.226"W	3435.41	140.10	4.20
8642.00	89.38	155.22	6511.69	3365.36	-2722.33	2242.28	516600.4	4396618.6	39°43'09.405"N	80°48'22.733"W	3526.88	140.52	1.57
8737.00	89.66	156.82	6512.48	3460.30	-2809.12	2280.89	516612.2	4396592.2	39°43'08.547"N	80°48'22.242"W	3618.51	140.93	1.71
8833.00	89.82	162.82	6512.92	3556.20	-2899.18	2313.99	516622.3	4396564.8	39°43'07.656"N	80°48'21.820"W	3709.42	141.41	6.25
8927.00	89.94	164.84	6513.12	3649.70	-2989.46	2340.17	516630.2	4396537.3	39°43'06.763"N	80°48'21.488"W	3796.48	141.95	2.15
9021.00	89.60	162.13	6513.49	3743.25	-3079.57	2366.88	516638.4	4396509.8	39°43'05.872"N	80°48'21.149"W	3884.06	142.46	2.91
9116.00	89.69	155.52	6514.08	3838.18	-3168.11	2401.18	516648.8	4396482.8	39°43'04.996"N	80°48'20.712"W	3975.25	142.84	6.96
9210.00	89.48	153.73	6514.76	3932.02	-3253.03	2441.46	516661.1	4396457.0	39°43'04.156"N	80°48'20.199"W	4067.30	143.11	1.92
9303.00	89.57	159.11	6515.53	4024.95	-3338.23	2478.65	516672.4	4396431.0	39°43'03.313"N	80°48'19.725"W	4157.82	143.41	5.79
9398.00	90.12	164.48	6515.79	4119.70	-3428.45	2508.32	516681.5	4396403.5	39°43'02.421"N	80°48'19.348"W	4248.04	143.81	5.68
9493.00	89.94	161.75	6515.74	4214.30	-3519.34	2535.91	516689.9	4396375.8	39°43'01.522"N	80°48'18.998"W	4337.81	144.23	2.88
9588.00	89.94	153.63	6515.84	4309.22	-3607.16	2571.94	516700.9	4396349.1	39°43'00.654"N	80°48'18.539"W	4430.17	144.51	8.55
9683.00	89.94	157.04	6515.94	4404.11	-3693.48	2611.58	516712.9	4396322.8	39°42'59.800"N	80°48'18.034"W	4523.51	144.74	3.59
9778.00	90.06	154.91	6515.94	4499.05	-3780.24	2650.25	516724.7	4396296.3	39°42'58.941"N	80°48'17.542"W	4616.72	144.97	2.25
9873.00	89.97	156.49	6515.92	4593.97	-3866.82	2689.35	516736.6	4396269.9	39°42'58.085"N	80°48'17.044"W	4710.08	145.18	1.67
9967.00	90.06	153.18	6515.89	4687.82	-3951.89	2729.31	516748.8	4396244.0	39°42'57.243"N	80°48'16.535"W	4802.77	145.37	3.52
10062.00	90.06	156.32	6515.79	4782.67	-4037.80	2769.83	516761.2	4396217.8	39°42'56.393"N	80°48'16.019"W	4896.51	145.55	3.31
10157.00	90.06	157.59	6515.69	4877.65	-4125.22	2807.02	516772.5	4396191.2	39°42'55.529"N	80°48'15.545"W	4989.67	145.77	1.34
10252.00	89.94	159.85	6515.69	4972.64	-4213.73	2841.49	516783.0	4396164.2	39°42'54.653"N	80°48'15.107"W	5082.29	146.01	2.38
10347.00	89.91	159.28	6515.82	5067.60	-4302.76	2874.66	516793.1	4396137.1	39°42'53.773"N	80°48'14.685"W	5174.69	146.25	0.60
10442.00	89.82	157.91	6516.04	5162.59	-4391.20	2909.33	516803.7	4396110.2	39°42'52.898"N	80°48'14.243"W	5267.53	146.47	1.45
10537.00	89.85	155.39	6516.31	5257.56	-4478.41	2946.98	516815.1	4396083.6	39°42'52.035"N	80°48'13.764"W	5361.05	146.65	2.65
10632.00	89.88	155.27	6516.54	5352.46	-4564.74	2986.63	516827.2	4396057.3	39°42'51.181"N	80°48'13.259"W	5454.98	146.80	0.13
10728.00	89.88	155.75	6516.74	5448.37	-4652.10	3026.43	516839.3	4396030.7	39°42'50.317"N	80°48'12.752"W	5549.90	146.95	0.50
10823.00	89.72	156.03	6517.07	5543.31	-4738.82	3065.24	516851.2	4396004.3	39°42'49.459"N	80°48'12.258"W	5643.76	147.10	0.34
10918.00	89.66	156.31	6517.59	5638.26	-4825.72	3103.62	516862.9	4395977.8	39°42'48.599"N	80°48'11.769"W	5737.59	147.25	0.30
11013.00	89.29	160.07	6518.46	5733.24	-4913.90	3138.91	516873.6	4395950.9	39°42'47.727"N	80°48'11.320"W	5830.87	147.43	3.98

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WELL PATH DATA † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [M]	Grid North [M]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]
11107.00	89.26	162.12	6519.65	5827.09	-5002.81	3169.36	516882.9	4395923.8	39°42'46.848"N	80°48'10.933"W	5922.24	147.65	2.18
11202.00	89.26	159.06	6520.87	5921.96	-5092.40	3200.92	516892.5	4395896.5	39°42'45.962"N	80°48'10.532"W	6014.85	147.85	3.22
11297.00	89.35	159.66	6522.03	6016.93	-5181.29	3234.41	516902.7	4395869.5	39°42'45.082"N	80°48'10.106"W	6107.96	148.03	0.64
11390.00	89.45	159.73	6523.00	6109.88	-5268.51	3266.68	516912.5	4395842.9	39°42'44.220"N	80°48'09.695"W	6199.06	148.20	0.13
11484.00	89.48	156.83	6523.88	6203.86	-5355.82	3301.46	516923.1	4395816.3	39°42'43.356"N	80°48'09.253"W	6291.62	148.35	3.09
11579.00	89.26	157.39	6524.92	6298.85	-5443.33	3338.41	516934.4	4395789.6	39°42'42.491"N	80°48'08.782"W	6385.52	148.48	0.63
11674.00	89.35	156.19	6526.07	6393.82	-5530.64	3375.84	516945.8	4395763.0	39°42'41.627"N	80°48'08.306"W	6479.53	148.60	1.27
11769.00	89.42	154.38	6527.09	6488.71	-5616.93	3415.56	516957.9	4395736.7	39°42'40.773"N	80°48'07.800"W	6573.88	148.70	1.91
11864.00	89.23	155.92	6528.21	6583.59	-5703.12	3455.48	516970.1	4395710.5	39°42'39.921"N	80°48'07.292"W	6668.28	148.79	1.63
11959.00	89.20	157.09	6529.51	6678.55	-5790.24	3493.35	516981.6	4395683.9	39°42'39.059"N	80°48'06.810"W	6762.42	148.90	1.23
12053.00	89.26	158.42	6530.78	6772.54	-5877.23	3528.93	516992.4	4395657.4	39°42'38.198"N	80°48'06.357"W	6855.30	149.02	1.42
12148.00	89.35	159.81	6531.93	6867.51	-5965.98	3562.79	517002.8	4395630.4	39°42'37.320"N	80°48'05.926"W	6948.84	149.16	1.47
12178.00	89.54	159.42	6532.22	6897.49	-5994.10	3573.24	517005.9	4395621.8	39°42'37.042"N	80°48'05.793"W	6978.34	149.20	1.45
12203.00	89.54	159.42	6532.42	6922.48	-6017.50	3582.03	517008.6	4395614.7	39°42'36.811"N	80°48'05.681"W	7002.95	149.24	0.00

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