

51-01645



GASTAR EXPLORATION USA, INC.

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

Slot: Slot #1
 Well: Hansen Unit 1H
 Wellbore: Hansen Unit 1H (PWB)

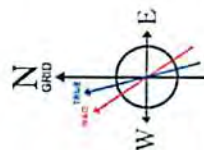
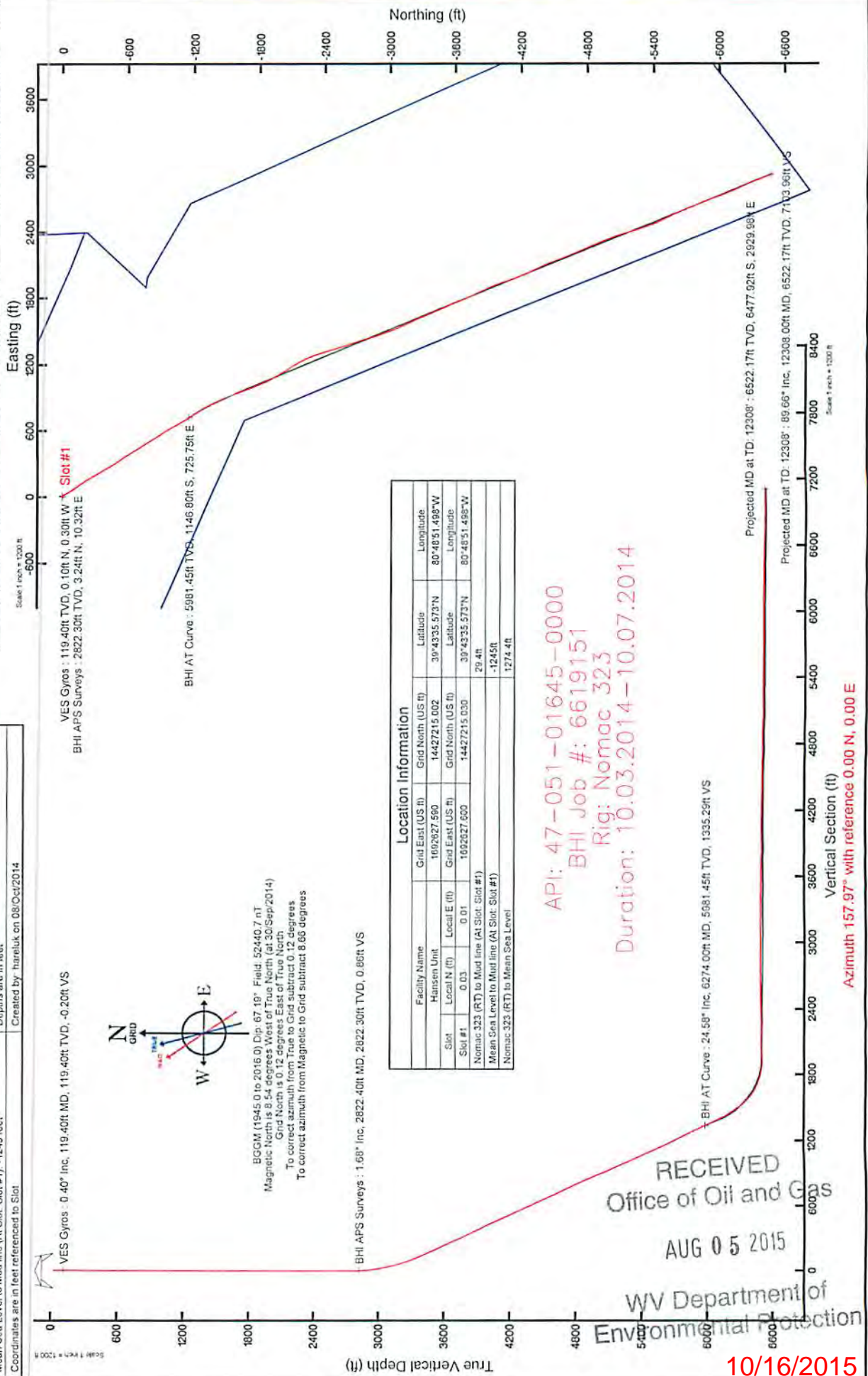


Plot reference wellpath is Hansen Unit 1H (PWP) Rev-B.0

True vertical depths are referenced to Normac 323 (RT)
Measured depths are referenced to Normac 323 (RT)
Normac 323 (RT) to Mean Sea Level: 1274.4 feet
Mean Sea Level to Mud line (At Slot, Slot #1): -1245 feet
Coordinates are in feet referenced to Slot

Grid System: NAD83 / UTM Zone 17 North, US feet
 North Reference: Grid north
 Scale: True distance
 Depths are in feet
 Created by: hareluk on 08/Oct/2014

Well Data	
Slot	Wellbore
Slot #1	Hansen Unit 1H (AWS)
Slot #1	Hansen Unit 1H (PWB)



BGGM (1945.0 to 2016.0) Dip: 67.19° Field: 52440.7 nT
 Magnetic North is 8.54 degrees West of True North (at 30/Sep/2014)
 Grid North is 0.12 degrees East of True North
 To correct azimuth from True to Grid subtract 0.12 degrees
 To correct azimuth from Magnetic to Grid subtract 8.66 degrees

Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Longitude
Hansen Unit	1002827.590	14427215.002	80°48'51.498"W
Slot	Local N (ft)	Grid North (US ft)	Longitude
Slot #1	0.03	1002827.590	80°48'51.498"W
Normac 323 (RT) to Mud line (At Slot, Slot #1)		14427215.030	
Mean Sea Level to Mud line (At Slot, Slot #1)		29.4 ft	
Normac 323 (RT) to Mean Sea Level		-1245 ft	
		1274.4 ft	

API: 47-051-01645-0000
 BHI Job #: 6619151
 Rig: Nomac 323
 Duration: 10.03.2014-10.07.2014

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51-01645

REFERENCE WELLPATH IDENTIFICATION			
Operator	GASTAR EXPLORATION INC.	Slot	Slot #1
Area	Marshall County, WV	Well	Hansen 1H
Field	Marshall	Wellbore	Hansen 1H (AWB)
Facility	Hansen Unit	Wellpath	Hansen 1H (AWP) Proj: 12,308'
		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	288.27	0.00	0.00	0.00	0.00	515913.9	4397423.9	39°43'35.573"N	80°48'51.498"W	0.00	0.00	0.00
29.40	0.00	288.27	29.40	0.00	0.00	0.00	515913.9	4397423.9	39°43'35.573"N	80°48'51.498"W	0.00	0.00	0.00
119.40	0.40	288.27	119.40	-0.20	0.10	-0.30	515913.8	4397424.0	39°43'35.574"N	80°48'51.502"W	0.31	288.27	0.44
219.40	0.38	255.18	219.40	-0.47	0.12	-0.95	515913.6	4397424.0	39°43'35.575"N	80°48'51.510"W	0.96	277.38	0.22
319.40	0.27	260.86	319.40	-0.56	0.00	-1.50	515913.5	4397423.9	39°43'35.573"N	80°48'51.517"W	1.50	270.03	0.11
419.40	0.53	293.31	419.39	-0.95	0.15	-2.16	515913.3	4397424.0	39°43'35.575"N	80°48'51.526"W	2.17	273.88	0.34
519.40	0.27	280.04	519.39	-1.40	0.37	-2.82	515913.1	4397424.0	39°43'35.577"N	80°48'51.534"W	2.84	277.49	0.27
619.40	0.30	245.70	619.39	-1.52	0.30	-3.29	515912.9	4397424.0	39°43'35.576"N	80°48'51.540"W	3.30	275.28	0.17
719.40	0.07	204.23	719.39	-1.46	0.14	-3.55	515912.8	4397424.0	39°43'35.575"N	80°48'51.543"W	3.55	272.26	0.25
819.40	0.17	201.12	819.39	-1.31	-0.05	-3.63	515912.8	4397423.9	39°43'35.573"N	80°48'51.544"W	3.63	269.15	0.10
919.40	0.17	199.66	919.39	-1.09	-0.33	-3.73	515912.8	4397423.8	39°43'35.570"N	80°48'51.546"W	3.75	264.92	0.00
1019.40	0.11	226.48	1019.39	-0.95	-0.54	-3.85	515912.8	4397423.8	39°43'35.568"N	80°48'51.547"W	3.89	262.06	0.09
1119.40	0.11	221.94	1119.39	-0.87	-0.68	-3.99	515912.7	4397423.7	39°43'35.567"N	80°48'51.549"W	4.04	260.39	0.01
1219.40	0.10	178.28	1219.39	-0.75	-0.83	-4.05	515912.7	4397423.7	39°43'35.565"N	80°48'51.550"W	4.13	258.37	0.08
1319.40	0.43	65.79	1319.39	-0.68	-0.77	-3.70	515912.8	4397423.7	39°43'35.566"N	80°48'51.545"W	3.78	258.30	0.48
1419.40	0.27	49.92	1419.38	-0.77	-0.46	-3.18	515913.0	4397423.8	39°43'35.569"N	80°48'51.539"W	3.21	261.75	0.19
1519.40	0.45	35.32	1519.38	-1.05	0.01	-2.77	515913.1	4397423.9	39°43'35.573"N	80°48'51.533"W	2.77	270.22	0.20
1619.40	0.43	23.37	1619.38	-1.53	0.68	-2.40	515913.2	4397424.1	39°43'35.580"N	80°48'51.529"W	2.49	285.73	0.09
1719.40	0.41	60.10	1719.38	-1.84	1.20	-1.94	515913.3	4397424.3	39°43'35.585"N	80°48'51.523"W	2.28	301.72	0.27
1819.40	0.54	72.24	1819.37	-1.85	1.52	-1.18	515913.6	4397424.4	39°43'35.588"N	80°48'51.513"W	1.92	322.18	0.16
1919.40	0.53	71.09	1919.37	-1.79	1.81	-0.29	515913.8	4397424.5	39°43'35.591"N	80°48'51.502"W	1.84	350.80	0.01
2019.40	0.65	76.29	2019.36	-1.68	2.10	0.69	515914.1	4397424.6	39°43'35.594"N	80°48'51.489"W	2.21	18.32	0.13
2119.40	0.68	79.40	2119.36	-1.48	2.34	1.83	515914.5	4397424.6	39°43'35.596"N	80°48'51.474"W	2.97	37.99	0.05
2219.40	0.69	74.10	2219.35	-1.30	2.62	2.99	515914.8	4397424.7	39°43'35.599"N	80°48'51.460"W	3.97	48.83	0.06
2319.40	0.91	83.05	2319.34	-1.03	2.88	4.36	515915.3	4397424.8	39°43'35.602"N	80°48'51.442"W	5.22	56.57	0.25

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2419.40	0.74	77.45	2419.33	-0.72	3.11	5.78	515915.7	4397424.9	39°43'35.604"N	80°48'51.424"W	6.56	61.68	0.19
2519.40	0.70	77.18	2519.32	-0.52	3.39	7.00	515916.1	4397425.0	39°43'35.607"N	80°48'51.408"W	7.78	64.17	0.04
2619.40	0.68	109.36	2619.32	-0.02	3.33	8.16	515916.4	4397425.0	39°43'35.606"N	80°48'51.393"W	8.81	67.81	0.38
2719.40	0.67	64.00	2719.31	0.33	3.39	9.24	515916.7	4397425.0	39°43'35.607"N	80°48'51.379"W	9.85	69.87	0.52
2781.40	0.50	65.04	2781.31	0.29	3.66	9.82	515916.9	4397425.1	39°43'35.609"N	80°48'51.372"W	10.48	69.55	0.27
2822.40	1.68	144.91	2822.30	0.86	3.24	10.32	515917.1	4397424.9	39°43'35.605"N	80°48'51.366"W	10.82	72.55	4.06
2854.40	3.36	158.18	2854.27	2.26	1.99	10.94	515917.3	4397424.5	39°43'35.593"N	80°48'51.358"W	11.12	79.69	5.52
2885.40	4.49	158.42	2885.19	4.38	0.02	11.73	515917.5	4397423.9	39°43'35.573"N	80°48'51.348"W	11.73	89.91	3.65
2917.40	6.14	156.48	2917.06	7.34	-2.72	12.87	515917.8	4397423.1	39°43'35.546"N	80°48'51.333"W	13.15	101.92	5.19
2949.40	7.43	154.25	2948.83	11.12	-6.15	14.45	515918.3	4397422.1	39°43'35.512"N	80°48'51.313"W	15.70	113.05	4.11
2980.40	8.78	154.94	2979.52	15.48	-10.10	16.32	515918.9	4397420.9	39°43'35.473"N	80°48'51.289"W	19.19	121.74	4.37
3012.40	9.95	152.88	3011.09	20.68	-14.77	18.62	515919.6	4397419.4	39°43'35.427"N	80°48'51.260"W	23.77	128.43	3.80
3043.40	11.20	152.35	3041.57	26.34	-19.82	21.24	515920.4	4397417.9	39°43'35.377"N	80°48'51.227"W	29.05	133.03	4.04
3075.40	12.28	152.76	3072.90	32.82	-25.60	24.24	515921.3	4397416.1	39°43'35.320"N	80°48'51.188"W	35.25	136.57	3.39
3106.40	13.19	152.73	3103.13	39.63	-31.67	27.37	515922.3	4397414.3	39°43'35.260"N	80°48'51.148"W	41.86	139.17	2.94
3138.40	14.08	151.76	3134.23	47.13	-38.35	30.88	515923.3	4397412.3	39°43'35.194"N	80°48'51.104"W	49.24	141.16	2.87
3169.40	15.17	149.91	3164.23	54.90	-45.18	34.70	515924.5	4397410.2	39°43'35.126"N	80°48'51.055"W	56.97	142.48	3.82
3201.40	16.44	149.33	3195.02	63.52	-52.70	39.11	515925.8	4397407.9	39°43'35.052"N	80°48'50.999"W	65.62	143.42	4.00
3232.40	17.83	149.36	3224.64	72.55	-60.56	43.76	515927.3	4397405.5	39°43'34.974"N	80°48'50.939"W	74.71	144.14	4.48
3264.40	18.85	150.11	3255.01	82.52	-69.25	48.84	515928.8	4397402.8	39°43'34.888"N	80°48'50.875"W	84.74	144.81	3.27
3295.40	20.53	148.83	3284.20	92.84	-78.25	54.15	515930.4	4397400.1	39°43'34.799"N	80°48'50.807"W	95.15	145.32	5.59
3327.40	22.45	147.58	3313.97	104.39	-88.21	60.33	515932.3	4397397.1	39°43'34.700"N	80°48'50.728"W	106.86	145.63	6.17
3390.40	23.90	145.22	3371.89	128.68	-108.84	74.06	515936.5	4397390.8	39°43'34.496"N	80°48'50.553"W	131.65	145.77	2.73
3452.40	23.81	142.62	3428.60	152.99	-129.10	88.82	515941.0	4397384.6	39°43'34.296"N	80°48'50.365"W	156.71	145.47	1.70
3514.40	24.56	144.00	3485.15	177.57	-149.47	103.99	515945.6	4397378.4	39°43'34.094"N	80°48'50.171"W	182.09	145.17	1.51
3576.40	25.44	146.54	3541.35	203.12	-171.01	118.91	515950.2	4397371.8	39°43'33.881"N	80°48'49.981"W	208.29	145.19	2.24
3638.40	26.34	147.08	3597.12	229.68	-193.67	133.73	515954.7	4397364.9	39°43'33.657"N	80°48'49.792"W	235.35	145.38	1.50
3701.40	25.22	146.61	3653.85	256.57	-216.60	148.71	515959.2	4397357.9	39°43'33.430"N	80°48'49.600"W	262.74	145.53	1.81
3764.40	23.93	149.48	3711.15	282.37	-238.82	162.58	515963.5	4397351.2	39°43'33.210"N	80°48'49.423"W	288.91	145.75	2.79
3828.40	25.36	151.07	3769.32	308.81	-262.00	175.81	515967.5	4397344.1	39°43'32.980"N	80°48'49.255"W	315.52	146.14	2.46
3892.40	26.17	151.30	3826.95	336.44	-286.37	189.22	515971.6	4397336.7	39°43'32.739"N	80°48'49.084"W	343.24	146.55	1.28

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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]
3955.40	26.11	149.91	3883.51	363.96	-310.55	202.84	515975.7	4397329.3	39°43'32.500"N	80°48'48.910"W	370.93	146.85	0.98
4018.40	26.53	149.13	3939.98	391.59	-334.63	217.01	515980.0	4397322.0	39°43'32.262"N	80°48'48.729"W	398.83	147.04	0.86
4081.40	25.86	149.81	3996.51	419.10	-358.58	231.14	515984.3	4397314.7	39°43'32.025"N	80°48'48.549"W	426.62	147.20	1.17
4143.40	24.79	149.47	4052.55	445.34	-381.46	244.54	515988.4	4397307.7	39°43'31.798"N	80°48'48.378"W	453.11	147.34	1.74
4206.40	24.82	148.46	4109.74	471.44	-404.11	258.16	515992.6	4397300.8	39°43'31.574"N	80°48'48.204"W	479.53	147.43	0.67
4269.40	24.93	149.38	4166.89	497.61	-426.81	271.84	515996.8	4397293.9	39°43'31.350"N	80°48'48.030"W	506.03	147.51	0.64
4332.40	25.14	148.70	4223.97	523.95	-449.67	285.56	516000.9	4397286.9	39°43'31.123"N	80°48'47.855"W	532.68	147.58	0.57
4394.40	24.67	146.59	4280.21	549.63	-471.72	299.53	516005.2	4397280.2	39°43'30.905"N	80°48'47.677"W	558.78	147.59	1.62
4457.40	25.30	146.21	4337.31	575.70	-493.88	314.25	516009.7	4397273.5	39°43'30.686"N	80°48'47.489"W	585.39	147.53	1.03
4521.40	25.92	144.28	4395.03	602.68	-516.61	330.02	516014.5	4397266.5	39°43'30.461"N	80°48'47.288"W	613.02	147.43	1.62
4584.40	25.72	144.24	4451.74	629.33	-538.88	346.05	516019.4	4397259.8	39°43'30.241"N	80°48'47.083"W	640.42	147.29	0.32
4647.40	24.61	146.44	4508.76	655.47	-560.90	361.29	516024.0	4397253.0	39°43'30.023"N	80°48'46.889"W	667.19	147.21	2.30
4710.40	24.55	148.28	4566.05	681.22	-582.97	375.43	516028.3	4397246.3	39°43'29.804"N	80°48'46.708"W	693.40	147.22	1.22
4773.40	25.26	148.00	4623.19	707.36	-605.50	389.43	516032.6	4397239.5	39°43'29.581"N	80°48'46.530"W	719.92	147.25	1.14
4836.40	26.20	148.50	4679.94	734.32	-628.76	403.82	516037.0	4397232.4	39°43'29.351"N	80°48'46.346"W	747.27	147.29	1.53
4900.40	25.72	148.70	4737.49	761.96	-652.67	418.42	516041.4	4397225.1	39°43'29.114"N	80°48'46.160"W	775.28	147.34	0.76
4963.40	25.32	147.85	4794.34	788.72	-675.76	432.69	516045.8	4397218.0	39°43'28.886"N	80°48'45.978"W	802.41	147.37	0.86
5026.40	24.95	147.43	4851.37	815.04	-698.36	447.01	516050.1	4397211.2	39°43'28.662"N	80°48'45.795"W	829.17	147.38	0.65
5089.40	24.13	148.56	4908.68	840.81	-720.55	460.88	516054.3	4397204.4	39°43'28.443"N	80°48'45.618"W	855.34	147.40	1.50
5153.40	23.61	145.84	4967.21	866.25	-742.31	474.90	516058.6	4397197.8	39°43'28.227"N	80°48'45.440"W	881.23	147.39	1.90
5216.40	23.30	145.76	5025.00	890.76	-763.05	489.00	516062.9	4397191.4	39°43'28.022"N	80°48'45.260"W	906.29	147.35	0.49
5280.40	24.48	148.91	5083.52	916.23	-784.87	502.97	516067.2	4397184.8	39°43'27.806"N	80°48'45.082"W	932.20	147.35	2.71
5342.40	24.01	148.29	5140.05	941.35	-806.61	516.23	516071.2	4397178.2	39°43'27.591"N	80°48'44.912"W	957.66	147.38	0.86
5406.40	24.57	147.47	5198.39	967.27	-828.90	530.23	516075.5	4397171.4	39°43'27.371"N	80°48'44.734"W	983.98	147.39	1.02
5469.40	25.13	147.08	5255.55	993.28	-851.17	544.54	516079.8	4397164.6	39°43'27.150"N	80°48'44.551"W	1010.46	147.39	0.93
5532.40	25.76	147.30	5312.44	1019.87	-873.92	559.21	516084.3	4397157.7	39°43'26.925"N	80°48'44.364"W	1037.52	147.39	1.01
5595.40	25.93	146.49	5369.14	1046.82	-896.93	574.21	516088.9	4397150.7	39°43'26.697"N	80°48'44.173"W	1064.99	147.37	0.62
5658.40	25.17	144.77	5425.98	1073.35	-919.32	589.60	516093.6	4397143.8	39°43'26.476"N	80°48'43.976"W	1092.14	147.33	1.83
5721.40	24.72	146.84	5483.11	1099.30	-941.25	604.59	516098.1	4397137.2	39°43'26.259"N	80°48'43.785"W	1118.69	147.29	1.74
5784.40	24.41	150.04	5540.41	1125.12	-963.55	618.30	516102.3	4397130.4	39°43'26.038"N	80°48'43.610"W	1144.87	147.31	2.17
5847.40	24.65	150.78	5597.72	1151.05	-986.30	631.21	516106.2	4397123.4	39°43'25.813"N	80°48'43.446"W	1170.99	147.38	0.62

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5910.40	26.19	150.52	5654.62	1177.87	-1009.87	644.47	516110.3	4397116.2	39°43'25.580"N	80°48'43.277"W	1197.99	147.46	2.45
5973.40	26.80	150.71	5711.00	1205.74	-1034.36	658.26	516114.5	4397108.8	39°43'25.337"N	80°48'43.101"W	1226.05	147.53	0.98
6036.40	26.34	150.06	5767.35	1233.68	-1058.86	672.18	516118.7	4397101.3	39°43'25.095"N	80°48'42.923"W	1254.20	147.59	0.86
6099.40	26.43	149.63	5823.79	1261.39	-1083.06	686.25	516123.0	4397094.0	39°43'24.855"N	80°48'42.744"W	1282.17	147.64	0.34
6161.40	26.04	148.64	5879.40	1288.47	-1106.59	700.30	516127.3	4397086.8	39°43'24.623"N	80°48'42.565"W	1309.57	147.67	0.95
6225.40	24.62	147.46	5937.25	1315.45	-1129.83	714.79	516131.7	4397079.7	39°43'24.393"N	80°48'42.380"W	1336.95	147.68	2.35
6256.40	24.53	147.04	5965.44	1328.11	-1140.67	721.76	516133.8	4397076.4	39°43'24.285"N	80°48'42.291"W	1349.84	147.68	0.63
6274.00	24.58	146.91	5981.45	1335.29	-1146.80	725.75	516135.0	4397074.5	39°43'24.225"N	80°48'42.240"W	1357.15	147.67	0.42
6369.00	24.44	147.53	6067.89	1374.01	-1179.94	747.09	516141.5	4397064.4	39°43'23.897"N	80°48'41.968"W	1396.56	147.66	0.31
6464.00	27.67	145.82	6153.22	1414.91	-1214.77	770.03	516148.5	4397053.8	39°43'23.552"N	80°48'41.675"W	1438.27	147.63	3.49
6557.00	34.50	147.80	6232.82	1462.01	-1254.97	796.23	516156.5	4397041.6	39°43'23.154"N	80°48'41.341"W	1486.25	147.61	7.42
6652.00	37.09	154.01	6309.90	1517.09	-1303.51	823.14	516164.7	4397026.8	39°43'22.674"N	80°48'40.998"W	1541.65	147.73	4.69
6748.00	49.06	153.79	6379.89	1582.37	-1362.28	851.94	516173.5	4397008.9	39°43'22.093"N	80°48'40.631"W	1606.74	147.98	12.47
6843.00	61.28	153.65	6434.05	1659.99	-1432.06	886.41	516184.0	4396987.6	39°43'21.402"N	80°48'40.192"W	1684.20	148.24	12.86
6938.00	71.04	158.72	6472.42	1746.70	-1511.49	921.30	516194.6	4396963.4	39°43'20.617"N	80°48'39.747"W	1770.14	148.64	11.37
7032.00	80.04	159.96	6495.87	1837.60	-1596.57	953.37	516204.4	4396937.5	39°43'19.775"N	80°48'39.339"W	1859.56	149.16	9.66
7128.00	89.17	159.46	6504.89	1933.03	-1686.12	986.48	516214.5	4396910.2	39°43'18.889"N	80°48'38.918"W	1953.49	149.67	9.52
7222.00	92.25	159.10	6503.72	2026.99	-1774.02	1019.73	516224.6	4396883.4	39°43'18.020"N	80°48'38.495"W	2046.22	150.11	3.30
7316.00	89.66	153.73	6502.15	2120.90	-1860.12	1057.32	516236.1	4396857.2	39°43'17.168"N	80°48'38.016"W	2139.62	150.39	6.34
7411.00	90.03	150.93	6502.41	2215.43	-1944.25	1101.43	516249.5	4396831.6	39°43'16.336"N	80°48'37.454"W	2234.56	150.47	2.97
7506.00	90.09	147.81	6502.31	2309.35	-2025.98	1149.82	516264.3	4396806.7	39°43'15.527"N	80°48'36.837"W	2329.53	150.42	3.28
7601.00	92.53	149.42	6500.14	2403.05	-2107.05	1199.28	516279.3	4396782.0	39°43'14.725"N	80°48'36.206"W	2424.45	150.35	3.08
7695.00	91.75	153.28	6496.63	2496.34	-2189.47	1244.31	516293.0	4396756.8	39°43'13.909"N	80°48'35.632"W	2518.35	150.39	4.19
7791.00	91.57	159.80	6493.84	2592.22	-2277.45	1282.49	516304.7	4396730.0	39°43'13.039"N	80°48'35.146"W	2613.72	150.62	6.79
7886.00	90.77	163.03	6491.90	2687.01	-2367.46	1312.76	516313.9	4396702.6	39°43'12.149"N	80°48'34.761"W	2707.07	150.99	3.50
7981.00	90.55	164.17	6490.81	2781.55	-2458.59	1339.58	516322.1	4396674.9	39°43'11.248"N	80°48'34.420"W	2799.85	151.42	1.22
8076.00	90.32	162.41	6490.25	2876.13	-2549.57	1366.89	516330.4	4396647.1	39°43'10.348"N	80°48'34.073"W	2892.87	151.80	1.91
8172.00	90.03	161.83	6490.13	2971.88	-2640.94	1396.36	516339.4	4396619.3	39°43'09.445"N	80°48'33.698"W	2987.37	152.13	0.61
8265.00	89.78	162.81	6490.28	3064.61	-2729.54	1424.61	516348.0	4396592.3	39°43'08.568"N	80°48'33.339"W	3078.95	152.44	1.09
8359.00	89.51	164.24	6490.86	3158.17	-2819.68	1451.27	516356.1	4396564.8	39°43'07.677"N	80°48'33.000"W	3171.24	152.77	1.55
8452.00	89.31	162.40	6491.66	3250.75	-2908.76	1477.96	516364.2	4396537.7	39°43'06.796"N	80°48'32.661"W	3262.70	153.07	1.98

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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]
8547.00	89.51	158.82	6492.47	3345.63	-2998.35	1509.49	516373.8	4396510.4	39°43'05.910"N	80°48'32.260"W	3356.89	153.28	3.77
8642.00	89.23	156.96	6493.52	3440.62	-3086.36	1545.24	516384.7	4396483.6	39°43'05.039"N	80°48'31.805"W	3451.58	153.40	1.98
8737.00	88.92	154.65	6495.05	3535.54	-3173.00	1584.17	516396.6	4396457.2	39°43'04.182"N	80°48'31.309"W	3546.48	153.47	2.45
8832.00	88.89	156.92	6496.87	3630.44	-3259.62	1623.13	516408.5	4396430.8	39°43'03.326"N	80°48'30.813"W	3641.38	153.53	2.39
8927.00	88.86	157.58	6498.73	3725.42	-3347.21	1659.86	516419.6	4396404.1	39°43'02.459"N	80°48'30.345"W	3736.16	153.62	0.70
9021.00	88.86	156.76	6500.60	3819.39	-3433.83	1696.32	516430.8	4396377.7	39°43'01.602"N	80°48'29.881"W	3829.97	153.71	0.87
9116.00	89.54	156.30	6501.93	3914.35	-3520.96	1734.15	516442.3	4396351.2	39°43'00.740"N	80°48'29.399"W	3924.85	153.78	0.86
9210.00	89.54	158.87	6502.68	4008.34	-3607.84	1769.99	516453.2	4396324.7	39°42'59.881"N	80°48'28.943"W	4018.63	153.87	2.73
9303.00	89.60	156.19	6503.38	4101.32	-3693.77	1805.53	516464.0	4396298.5	39°42'59.031"N	80°48'28.491"W	4111.44	153.95	2.88
9398.00	89.38	154.59	6504.23	4196.22	-3780.14	1845.09	516476.1	4396272.2	39°42'58.177"N	80°48'27.987"W	4206.40	153.98	1.70
9493.00	89.54	155.89	6505.12	4291.11	-3866.40	1884.88	516488.2	4396245.9	39°42'57.323"N	80°48'27.480"W	4301.37	154.01	1.38
9588.00	89.63	159.74	6505.81	4386.08	-3954.35	1920.74	516499.1	4396219.1	39°42'56.453"N	80°48'27.024"W	4396.15	154.09	4.05
9683.00	90.15	161.25	6505.99	4480.99	-4043.89	1952.46	516508.8	4396191.8	39°42'55.568"N	80°48'26.620"W	4490.56	154.23	1.68
9778.00	90.12	158.54	6505.77	4575.93	-4133.09	1985.11	516518.7	4396164.7	39°42'54.685"N	80°48'26.205"W	4585.10	154.35	2.85
9872.00	89.85	157.38	6505.79	4669.92	-4220.22	2020.38	516529.5	4396138.1	39°42'53.824"N	80°48'25.756"W	4678.91	154.42	1.27
9967.00	89.85	154.43	6506.04	4764.85	-4306.94	2059.16	516541.3	4396111.7	39°42'52.966"N	80°48'25.262"W	4773.87	154.45	3.11
10062.00	89.91	156.22	6506.24	4859.75	-4393.26	2098.82	516553.4	4396085.4	39°42'52.112"N	80°48'24.757"W	4868.86	154.46	1.89
10157.00	89.38	159.38	6506.83	4954.73	-4481.20	2134.71	516564.3	4396058.6	39°42'51.242"N	80°48'24.300"W	4963.68	154.53	3.37
10252.00	89.42	159.09	6507.83	5049.70	-4570.03	2168.39	516574.6	4396031.5	39°42'50.363"N	80°48'23.871"W	5058.37	154.62	0.31
10347.00	90.09	157.36	6508.23	5144.70	-4658.24	2203.63	516585.3	4396004.7	39°42'49.491"N	80°48'23.423"W	5153.18	154.68	1.95
10442.00	90.00	155.82	6508.16	5239.67	-4745.42	2241.37	516596.8	4395978.1	39°42'48.628"N	80°48'22.942"W	5248.12	154.72	1.62
10537.00	89.94	156.40	6508.21	5334.62	-4832.28	2279.85	516608.5	4395951.6	39°42'47.769"N	80°48'22.452"W	5343.09	154.74	0.61
10632.00	90.06	158.37	6508.21	5429.61	-4919.97	2316.37	516619.7	4395924.9	39°42'46.902"N	80°48'21.987"W	5437.99	154.79	2.08
10728.00	89.42	159.02	6508.64	5525.60	-5009.41	2351.25	516630.3	4395897.7	39°42'46.017"N	80°48'21.544"W	5533.77	154.86	0.95
10822.00	89.35	162.63	6509.65	5619.46	-5098.18	2382.12	516639.7	4395870.6	39°42'45.139"N	80°48'21.151"W	5627.25	154.96	3.84
10918.00	89.45	162.29	6510.66	5715.16	-5189.71	2411.05	516648.5	4395842.7	39°42'44.234"N	80°48'20.783"W	5722.43	155.08	0.37
11012.00	90.03	162.78	6511.08	5808.86	-5279.37	2439.26	516657.1	4395815.4	39°42'43.347"N	80°48'20.425"W	5815.65	155.20	0.81
11107.00	90.00	159.34	6511.06	5903.71	-5369.21	2470.09	516666.5	4395788.1	39°42'42.459"N	80°48'20.033"W	5910.15	155.30	3.62
11202.00	90.12	153.63	6510.96	5998.64	-5456.29	2507.98	516678.1	4395761.5	39°42'41.597"N	80°48'19.551"W	6005.09	155.31	6.01
11297.00	90.03	154.79	6510.84	6093.43	-5541.83	2549.31	516690.6	4395735.5	39°42'40.751"N	80°48'19.024"W	6100.07	155.30	1.22
11389.00	89.60	155.47	6511.13	6185.32	-5625.29	2588.00	516702.4	4395710.0	39°42'39.925"N	80°48'18.531"W	6192.07	155.29	0.87

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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]
11484.00	89.51	159.18	6511.87	6280.29	-5712.93	2624.62	516713.6	4395683.3	39°42'39.059"N	80°48'18.065"W	6286.99	155.33	3.91
11579.00	89.54	157.40	6512.66	6375.28	-5801.19	2659.76	516724.3	4395656.4	39°42'38.186"N	80°48'17.618"W	6381.86	155.37	1.87
11674.00	89.14	159.00	6513.75	6470.27	-5889.38	2695.03	516735.0	4395629.6	39°42'37.313"N	80°48'17.169"W	6476.73	155.41	1.74
11769.00	89.14	160.48	6515.18	6565.21	-5978.49	2727.93	516745.1	4395602.4	39°42'36.432"N	80°48'16.751"W	6571.45	155.47	1.56
11864.00	89.08	158.56	6516.65	6660.16	-6067.47	2761.16	516755.2	4395575.3	39°42'35.552"N	80°48'16.328"W	6666.20	155.53	2.02
11958.00	89.29	155.39	6517.99	6754.13	-6153.97	2797.92	516766.4	4395549.0	39°42'34.696"N	80°48'15.860"W	6760.15	155.55	3.38
12053.00	89.08	155.89	6519.34	6849.04	-6240.50	2837.10	516778.3	4395522.6	39°42'33.840"N	80°48'15.361"W	6855.14	155.55	0.57
12148.00	89.20	159.44	6520.77	6944.01	-6328.35	2873.19	516789.3	4395495.8	39°42'32.971"N	80°48'14.902"W	6950.05	155.58	3.74
12243.00	89.60	159.57	6521.76	7038.97	-6417.33	2906.45	516799.5	4395468.7	39°42'32.091"N	80°48'14.479"W	7044.83	155.63	0.44
12282.00	89.66	158.44	6522.02	7077.96	-6453.74	2920.42	516803.7	4395457.6	39°42'31.731"N	80°48'14.301"W	7083.76	155.65	2.90
12308.00	89.66	158.44	6522.17	7103.96	-6477.92	2929.98	516806.6	4395450.2	39°42'31.492"N	80°48'14.179"W	7109.73	155.66	0.00

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