



GASTAR EXPLORATION USA, INC.



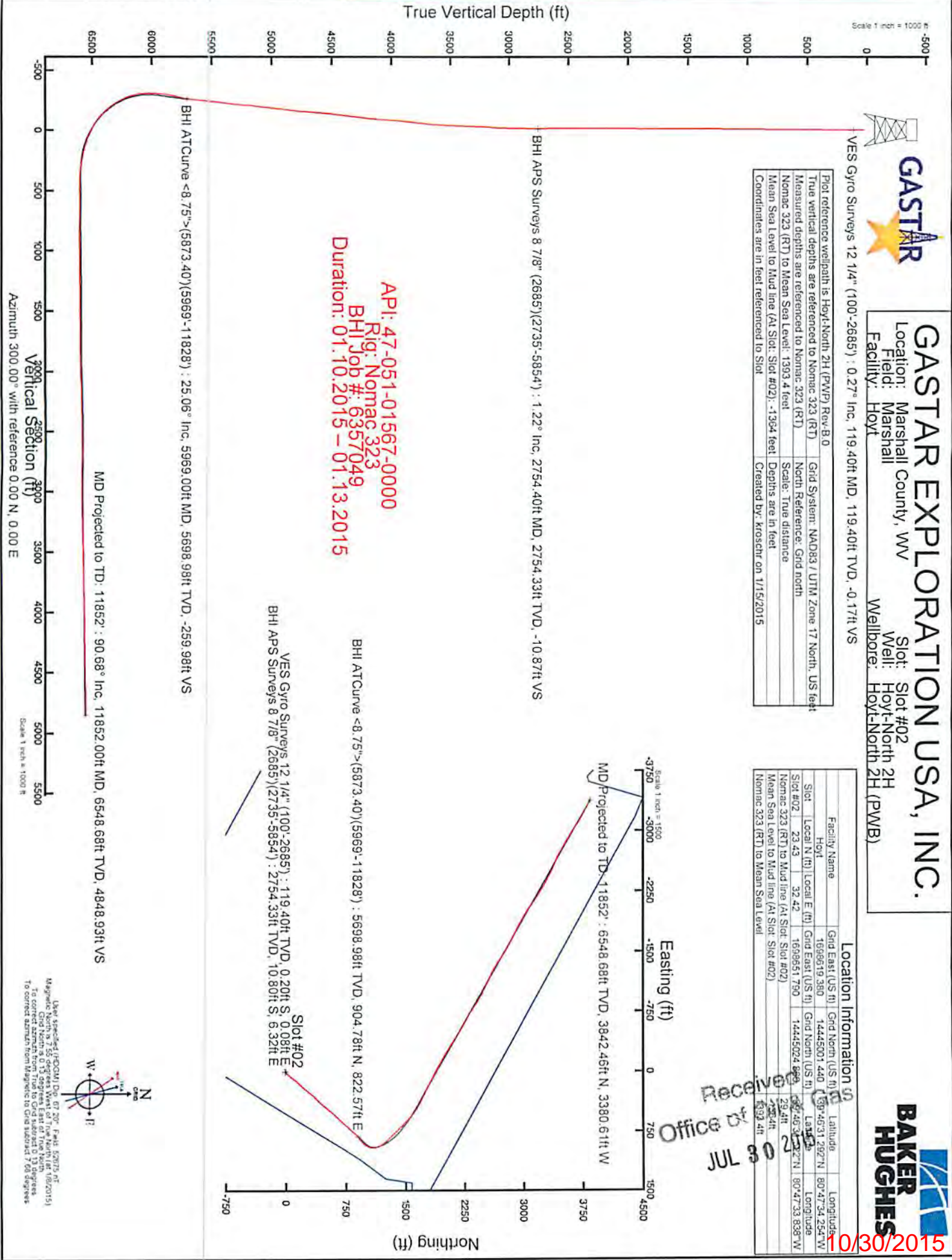
Location: Marshall County, WV
 Field: Marshall
 Facility: Hoyt
 Slot: Slot #02
 Well: Hoyt-North 2H
 Wellbore: Hoyt-North 2H (PWB)

VES Gyro Surveys 12 1/4" (100'-2685') : 0.27° Inc. 119.40ft MD, 119.40ft TVD, -0.17ft VS

Plot reference wellpath is Hoyt-North 2H (PWB) 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: 1393.4 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot #02): -1364 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: kroschr on 1/15/2015

Location Information		Latitude	Longitude
Facility Name	Hoyt	39°46'31.2927"N	80°47'34.254"W
Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
Slot #02 : 23.43	32.42	1699651.790	14445024.899
Nomac 323 (RT) to Mud line (At Slot #02)	Mean Sea Level to Mud line (At Slot #02)	14445024.899	1699651.790
1393.4 ft	-1364 ft	14445024.899	1699651.790
		14445024.899	1699651.790
		14445024.899	1699651.790

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Use provided (HOGMA) Data 87.30° East 63975.47'
 Magnetic North is 7.55 degrees West of True North (at 18/2015)
 To correct azimuth from true to Grid add/subtract 17.08 degrees
 To correct distance from true to Grid add/subtract 1.98 degrees

51-01567

10/30/2015

REFERENCE WELLPATH IDENTIFICATION

Operator	GASTAR EXPLORATION INC.	Slot	Slot #2H
Area	Marshall County, WV	Well	Hoyt 2H
Field	Marshall	Wellbore	Hoyt 2H (AWB)
Facility	Hoyt	Wellpath	Hoyt 2H (AWP) Proj: 11,852'
		Sidetrack	(none)

WELL PATH DATA † = interpolated/extrapolated station

MID [ft]	Inclination n [°]	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	158.73	0.00	0.00	0.00	0.00	517750.0	4402852.1	39°46'31.522"N	80°47'33.838"W	0.00	0.00	0.00
29.40	0.00	158.73	29.40	0.00	0.00	0.00	517750.0	4402852.1	39°46'31.522"N	80°47'33.838"W	0.00	0.00	0.00
119.40	0.27	158.73	119.40	-0.17	-0.20	0.08	517750.0	4402852.1	39°46'31.521"N	80°47'33.837"W	0.21	158.73	0.30
219.40	0.41	162.20	219.40	-0.61	-0.76	0.27	517750.2	4402852.2	39°46'31.515"N	80°47'33.834"W	0.81	160.27	0.14
319.40	0.52	172.68	319.39	-1.15	-1.55	0.44	517750.2	4402851.9	39°46'31.507"N	80°47'33.832"W	1.61	164.17	0.14
419.40	0.52	150.68	419.39	-1.82	-2.39	0.72	517750.3	4402851.7	39°46'31.499"N	80°47'33.829"W	2.50	163.29	0.20
519.40	0.15	137.45	519.39	-2.33	-2.89	1.03	517750.4	4402851.5	39°46'31.494"N	80°47'33.825"W	3.06	160.37	0.38
619.40	0.40	117.30	619.39	-2.81	-3.14	1.43	517750.5	4402851.4	39°46'31.491"N	80°47'33.820"W	3.45	155.56	0.26
719.40	0.45	123.72	719.38	-3.55	-3.52	2.07	517750.7	4402851.3	39°46'31.488"N	80°47'33.812"W	4.08	149.61	0.07
819.40	0.56	124.63	819.38	-4.43	-4.02	2.79	517751.0	4402851.2	39°46'31.483"N	80°47'33.802"W	4.89	145.18	0.11
919.40	0.56	126.09	919.38	-5.40	-4.58	3.59	517751.2	4402851.0	39°46'31.477"N	80°47'33.792"W	5.82	141.92	0.01
1019.40	0.78	148.58	1019.37	-6.48	-5.45	4.34	517751.4	4402850.7	39°46'31.469"N	80°47'33.782"W	6.97	141.47	0.34
1119.40	0.57	169.43	1119.36	-7.41	-6.52	4.79	517751.6	4402850.4	39°46'31.458"N	80°47'33.777"W	8.09	143.72	0.32
1219.40	0.62	159.73	1219.36	-8.15	-7.52	5.07	517751.6	4402850.1	39°46'31.448"N	80°47'33.773"W	9.06	146.03	0.11
1319.40	0.07	155.79	1319.35	-8.61	-8.08	5.28	517751.7	4402849.9	39°46'31.442"N	80°47'33.771"W	9.65	146.85	0.55
1419.40	0.52	147.70	1419.35	-9.06	-8.52	5.55	517751.8	4402849.8	39°46'31.438"N	80°47'33.767"W	10.17	146.94	0.45
1519.40	0.40	145.42	1519.35	-9.78	-9.19	5.99	517751.9	4402849.6	39°46'31.432"N	80°47'33.761"W	10.97	146.92	0.12
1619.40	0.21	149.27	1619.35	-10.25	-9.64	6.28	517752.0	4402849.4	39°46'31.427"N	80°47'33.758"W	11.50	146.92	0.19
1719.40	0.22	150.26	1719.35	-10.58	-9.96	6.47	517752.1	4402849.3	39°46'31.424"N	80°47'33.755"W	11.88	147.01	0.01
1819.40	0.29	152.44	1819.35	-10.96	-10.35	6.68	517752.1	4402849.2	39°46'31.420"N	80°47'33.753"W	12.32	147.17	0.07
1919.40	0.29	146.93	1919.35	-11.40	-10.79	6.93	517752.2	4402849.1	39°46'31.416"N	80°47'33.749"W	12.82	147.27	0.03
2019.40	0.29	138.62	2019.34	-11.86	-11.19	7.24	517752.3	4402849.0	39°46'31.412"N	80°47'33.745"W	13.33	147.10	0.04
2119.40	0.20	142.78	2119.34	-12.27	-11.52	7.51	517752.4	4402848.9	39°46'31.408"N	80°47'33.742"W	13.75	146.89	0.09
2219.40	0.06	143.98	2219.34	-12.47	-11.70	7.65	517752.4	4402848.8	39°46'31.407"N	80°47'33.740"W	13.98	146.83	0.14
2319.40	0.20	193.18	2319.34	-12.57	-11.91	7.64	517752.4	4402848.8	39°46'31.405"N	80°47'33.740"W	14.15	147.33	0.17

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2419.40	0.26	237.71	2419.34	-12.52	-12.20	7.41	517752.4	4402848.7	39°46'31.402"N	80°47'33.743"W	14.28	148.74	0.18
2519.40	0.17	272.14	2519.34	-12.28	-12.32	7.07	517752.3	4402848.6	39°46'31.401"N	80°47'33.748"W	14.20	150.15	0.15
2619.40	0.29	313.39	2619.34	-11.90	-12.14	6.74	517752.2	4402848.7	39°46'31.402"N	80°47'33.752"W	13.88	150.97	0.20
2704.40	0.68	328.55	2704.34	-11.25	-11.56	6.32	517752.0	4402848.9	39°46'31.408"N	80°47'33.757"W	13.12	151.35	0.48
2754.40	1.22	17.47	2754.33	-10.87	-10.80	6.32	517752.0	4402849.1	39°46'31.416"N	80°47'33.757"W	12.54	149.66	1.86
2785.40	2.21	30.87	2785.32	-10.81	-9.97	6.73	517752.1	4402849.3	39°46'31.424"N	80°47'33.752"W	12.03	146.00	3.42
2816.40	3.41	38.01	2816.28	-10.95	-8.73	7.60	517752.4	4402849.7	39°46'31.436"N	80°47'33.741"W	11.58	138.96	4.02
2848.40	4.57	39.60	2848.20	-11.30	-7.00	9.00	517752.8	4402850.2	39°46'31.453"N	80°47'33.723"W	11.40	127.88	3.64
2879.40	5.80	41.54	2879.07	-11.81	-4.88	10.83	517753.4	4402850.9	39°46'31.474"N	80°47'33.699"W	11.87	114.25	4.01
2911.40	6.81	39.98	2910.88	-12.47	-2.21	13.12	517754.1	4402851.7	39°46'31.500"N	80°47'33.670"W	13.30	99.58	3.20
2942.40	7.76	38.33	2941.63	-13.09	0.84	15.60	517754.9	4402852.6	39°46'31.530"N	80°47'33.638"W	15.62	86.93	3.14
2973.40	8.74	37.74	2972.31	-13.71	4.34	18.34	517755.7	4402853.7	39°46'31.565"N	80°47'33.603"W	18.84	76.68	3.17
3005.40	9.62	38.07	3003.90	-14.41	8.37	21.47	517756.6	4402854.9	39°46'31.605"N	80°47'33.563"W	23.05	68.71	2.75
3036.40	10.50	38.89	3034.42	-15.21	12.61	24.84	517757.7	4402856.2	39°46'31.647"N	80°47'33.519"W	27.86	63.09	2.88
3067.40	11.35	40.94	3064.86	-16.23	17.11	28.62	517758.8	4402857.6	39°46'31.691"N	80°47'33.471"W	33.34	59.12	3.01
3099.40	12.41	42.75	3096.17	-17.58	22.01	33.01	517760.2	4402859.1	39°46'31.739"N	80°47'33.414"W	39.68	56.30	3.51
3130.40	12.86	44.95	3126.42	-19.21	26.90	37.71	517761.6	4402860.6	39°46'31.787"N	80°47'33.354"W	46.32	54.50	2.13
3161.40	13.47	45.62	3156.61	-21.07	31.87	42.73	517763.1	4402862.1	39°46'31.836"N	80°47'33.290"W	53.31	53.28	2.03
3193.40	13.18	45.74	3187.75	-23.06	37.02	48.01	517764.7	4402863.7	39°46'31.887"N	80°47'33.222"W	60.62	52.36	0.91
3224.40	12.91	44.22	3217.95	-24.87	41.97	52.95	517766.2	4402865.2	39°46'31.936"N	80°47'33.158"W	67.57	51.60	1.41
3256.40	12.90	40.69	3249.14	-26.41	47.24	57.77	517767.7	4402866.8	39°46'31.988"N	80°47'33.096"W	74.63	50.73	2.46
3287.40	13.07	39.17	3279.35	-27.61	52.58	62.24	517769.1	4402868.4	39°46'32.041"N	80°47'33.039"W	81.48	49.81	1.23
3319.40	13.59	38.46	3310.48	-28.74	58.33	66.87	517770.5	4402870.2	39°46'32.097"N	80°47'32.980"W	88.73	48.90	1.70
3349.40	14.10	38.40	3339.61	-29.80	63.95	71.33	517771.8	4402871.9	39°46'32.153"N	80°47'32.922"W	95.80	48.12	1.70
3381.40	14.77	37.72	3370.60	-30.91	70.24	76.25	517773.3	4402873.8	39°46'32.215"N	80°47'32.859"W	103.67	47.35	2.16
3413.40	15.61	38.39	3401.48	-32.09	76.84	81.42	517774.9	4402875.8	39°46'32.280"N	80°47'32.793"W	111.95	46.66	2.68
3444.40	16.34	37.89	3431.29	-33.30	83.55	86.69	517776.5	4402877.8	39°46'32.346"N	80°47'32.725"W	120.39	46.06	2.40
3476.40	17.13	37.58	3461.93	-34.54	90.83	92.32	517778.2	4402880.1	39°46'32.418"N	80°47'32.653"W	129.52	45.47	2.48
3507.40	17.83	37.74	3491.50	-35.78	98.21	98.01	517780.0	4402882.3	39°46'32.491"N	80°47'32.580"W	138.75	44.94	2.26
3539.40	18.45	38.09	3521.91	-37.15	106.07	104.14	517781.8	4402884.7	39°46'32.568"N	80°47'32.501"W	148.64	44.47	1.97
3569.40	19.02	38.52	3550.32	-38.54	113.63	110.11	517783.6	4402887.0	39°46'32.643"N	80°47'32.424"W	158.22	44.10	1.95

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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]
3601.40	19.56	39.01	3580.52	-40.15	121.87	116.73	517785.7	4402889.5	39°46'32.724"N	80°47'32.339"W	168.95	58.77	1.76
3633.40	20.42	39.75	3610.59	-41.94	130.32	123.67	517787.8	4402892.1	39°46'32.808"N	80°47'32.250"W	179.66	48.50	2.80
3664.40	21.35	40.86	3639.56	-43.92	138.75	130.82	517790.0	4402894.7	39°46'32.891"N	80°47'32.158"W	190.70	43.32	3.26
3696.40	23.30	41.88	3669.16	-46.32	147.87	138.86	517792.4	4402897.4	39°46'32.981"N	80°47'32.055"W	202.84	43.20	6.21
3727.40	25.10	43.18	3697.43	-49.08	157.23	147.45	517795.0	4402900.3	39°46'33.073"N	80°47'31.945"W	215.55	43.16	6.06
3758.40	26.09	43.34	3725.39	-52.15	166.98	156.63	517797.8	4402903.3	39°46'33.169"N	80°47'31.827"W	228.94	43.17	3.20
3790.40	26.68	43.01	3754.06	-55.39	177.35	166.36	517800.8	4402906.4	39°46'33.271"N	80°47'31.702"W	243.16	43.17	1.90
3822.40	27.12	42.41	3782.59	-58.58	187.99	176.18	517803.8	4402909.7	39°46'33.376"N	80°47'31.576"W	257.64	43.14	1.62
3854.40	27.18	41.65	3811.07	-61.62	198.84	185.95	517806.8	4402913.0	39°46'33.483"N	80°47'31.450"W	272.24	43.08	1.10
3917.40	27.33	41.07	3867.07	-67.30	220.49	205.02	517812.6	4402919.6	39°46'33.697"N	80°47'31.206"W	301.08	42.92	0.48
3980.40	27.19	39.85	3923.08	-72.54	242.44	223.74	517818.3	4402926.3	39°46'33.913"N	80°47'30.965"W	329.91	42.70	0.91
4044.40	27.15	39.51	3980.01	-77.46	264.94	242.40	517824.0	4402933.1	39°46'34.135"N	80°47'30.725"W	359.10	42.46	0.25
4107.40	27.12	38.62	4036.08	-81.98	287.25	260.51	517829.5	4402939.9	39°46'34.355"N	80°47'30.493"W	387.78	42.21	0.65
4170.40	27.14	39.22	4092.15	-86.44	309.60	278.56	517835.0	4402946.7	39°46'34.576"N	80°47'30.261"W	416.47	41.98	0.44
4234.40	26.90	40.86	4149.16	-91.51	331.86	297.26	517840.7	4402953.5	39°46'34.795"N	80°47'30.021"W	445.52	41.85	1.22
4298.40	26.12	42.68	4206.44	-97.33	353.16	316.28	517846.5	4402960.0	39°46'35.005"N	80°47'29.776"W	474.09	41.85	1.76
4360.40	24.98	45.08	4262.37	-103.73	372.44	334.80	517852.1	4402965.9	39°46'35.196"N	80°47'29.539"W	500.81	41.95	2.48
4424.40	24.89	44.86	4320.41	-110.70	391.53	353.87	517857.9	4402971.7	39°46'35.384"N	80°47'29.294"W	527.75	42.11	0.20
4487.40	26.12	44.88	4377.27	-117.66	410.76	373.01	517863.7	4402977.5	39°46'35.573"N	80°47'29.048"W	554.85	42.24	1.95
4550.40	27.98	43.83	4433.37	-124.75	431.25	393.03	517869.9	4402983.8	39°46'35.775"N	80°47'28.791"W	583.48	42.35	3.05
4613.40	28.06	42.21	4488.99	-131.42	452.88	413.22	517876.0	4402990.4	39°46'35.989"N	80°47'28.532"W	613.07	42.38	1.21
4676.40	28.28	40.42	4544.53	-137.25	475.22	432.85	517882.0	4402997.2	39°46'36.209"N	80°47'28.280"W	642.80	42.33	1.39
4739.40	28.62	38.80	4599.92	-142.26	498.34	451.99	517887.8	4403004.2	39°46'36.437"N	80°47'28.034"W	672.78	42.21	1.34
4802.40	27.52	39.65	4655.51	-147.01	521.31	470.73	517893.5	4403011.2	39°46'36.664"N	80°47'27.793"W	702.39	42.08	1.86
4864.40	27.77	38.12	4710.43	-151.45	543.70	488.79	517899.0	4403018.0	39°46'36.884"N	80°47'27.561"W	731.11	41.96	1.21
4928.40	28.28	39.19	4766.93	-155.98	567.18	507.57	517904.7	4403025.2	39°46'37.116"N	80°47'27.320"W	761.13	41.83	1.12
4989.40	28.46	44.00	4820.61	-161.80	588.84	526.80	517910.6	4403031.8	39°46'37.330"N	80°47'27.073"W	790.09	41.82	3.76
5052.40	27.89	43.86	4876.14	-168.96	610.26	547.44	517916.9	4403038.3	39°46'37.541"N	80°47'26.808"W	819.82	41.89	0.91
5116.40	25.36	43.37	4933.35	-175.72	631.02	567.22	517922.9	4403044.6	39°46'37.746"N	80°47'26.554"W	848.49	41.95	3.97
5179.40	23.14	44.00	4990.79	-181.84	649.73	585.09	517928.4	4403050.3	39°46'37.930"N	80°47'26.325"W	874.35	42.00	3.55
5243.40	24.97	44.83	5049.23	-188.34	668.36	603.35	517933.9	4403056.0	39°46'38.114"N	80°47'26.090"W	900.41	42.07	2.91

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5307.40	27.53	44.30	5106.62	-195.45	688.53	623.21	517940.0	4403062.2	39°46'38.313"N	80°47'25.835"W	1928.69	42.15	4.02
5369.40	27.29	41.21	5161.67	-201.75	709.48	642.58	517945.9	4403068.5	39°46'38.519"N	80°47'25.587"W	1957.22	42.17	2.33
5433.40	27.08	37.66	5218.60	-206.55	732.05	661.15	517951.5	4403075.4	39°46'38.742"N	80°47'25.348"W	1986.42	42.09	2.55
5497.40	25.65	42.11	5275.95	-211.39	753.86	679.34	517957.1	4403082.1	39°46'38.957"N	80°47'25.114"W	1014.50	42.02	3.81
5561.40	24.70	45.12	5333.87	-217.79	773.58	698.10	517962.8	4403088.1	39°46'39.151"N	80°47'24.874"W	1042.00	42.06	2.49
5624.40	25.40	44.78	5390.94	-224.67	792.46	716.95	517968.5	4403093.8	39°46'39.338"N	80°47'24.632"W	1068.64	42.14	1.13
5686.40	25.89	43.88	5446.84	-231.31	811.65	735.70	517974.3	4403099.7	39°46'39.527"N	80°47'24.391"W	1095.46	42.19	1.01
5747.40	25.97	41.98	5501.70	-237.27	831.18	753.86	517979.8	4403105.6	39°46'39.719"N	80°47'24.158"W	1122.13	42.21	1.37
5810.40	27.90	40.63	5557.86	-242.86	852.62	772.69	517985.5	4403112.2	39°46'39.931"N	80°47'23.916"W	1150.66	42.18	3.21
5873.40	28.18	40.40	5613.47	-248.26	875.14	791.93	517991.4	4403119.0	39°46'40.153"N	80°47'23.669"W	1180.26	42.14	0.48
5969.00	25.06	52.14	5698.98	-259.98	904.78	822.57	518000.7	4403128.1	39°46'40.445"N	80°47'23.275"W	1222.81	42.28	6.38
6064.00	27.73	54.76	5784.07	-276.82	929.89	856.52	518011.1	4403135.7	39°46'40.693"N	80°47'22.840"W	1264.24	42.65	3.07
6159.00	27.69	49.42	5868.19	-293.42	957.00	891.34	518021.7	4403144.0	39°46'40.960"N	80°47'22.393"W	1307.80	42.97	2.61
6254.00	28.29	38.48	5952.13	-304.09	989.01	922.13	518031.1	4403153.7	39°46'41.275"N	80°47'21.998"W	1352.20	43.00	5.43
6349.00	28.29	26.82	6035.85	-306.16	1026.75	946.31	518038.4	4403165.2	39°46'41.648"N	80°47'21.687"W	1396.32	42.67	5.81
6444.00	27.18	7.16	6120.11	-296.47	1068.46	959.20	518042.4	4403177.9	39°46'42.060"N	80°47'21.520"W	1435.85	41.92	9.66
6539.00	31.28	349.37	6203.16	-271.93	1114.33	957.35	518041.8	4403191.9	39°46'42.513"N	80°47'21.543"W	1469.10	40.67	10.07
6634.00	37.92	340.94	6281.36	-233.75	1166.25	943.25	518037.5	4403207.7	39°46'43.026"N	80°47'21.722"W	1499.95	38.97	8.60
6728.00	39.75	321.22	6354.86	-183.72	1217.18	914.88	518028.8	4403223.2	39°46'43.530"N	80°47'22.084"W	1522.67	36.93	13.26
6823.00	49.65	315.89	6422.32	-120.41	1266.99	870.53	518015.3	4403238.4	39°46'44.024"N	80°47'22.650"W	1537.24	34.49	11.14
6916.00	59.84	316.17	6475.93	-47.52	1321.58	817.89	517999.3	4403255.0	39°46'44.564"N	80°47'23.323"W	1554.19	31.75	10.96
7010.00	66.89	315.87	6518.05	33.19	1382.00	759.57	517981.5	4403273.5	39°46'45.163"N	80°47'24.068"W	1576.98	28.79	7.51
7105.00	71.79	313.77	6551.56	119.10	1444.62	696.52	517962.3	4403292.5	39°46'45.783"N	80°47'24.874"W	1603.77	25.74	5.56
7200.00	77.75	313.47	6576.50	208.15	1507.82	630.19	517942.1	4403311.8	39°46'46.409"N	80°47'25.721"W	1634.22	22.68	6.28
7295.00	81.29	310.73	6593.79	299.47	1570.43	560.89	517921.0	4403330.9	39°46'47.030"N	80°47'26.607"W	1667.58	19.66	4.68
7389.00	87.32	305.27	6603.12	392.02	1627.94	487.23	517898.6	4403348.4	39°46'47.600"N	80°47'27.549"W	1699.29	16.66	8.63
7482.00	90.06	298.22	6605.24	484.88	1676.83	408.22	517874.5	4403363.3	39°46'48.085"N	80°47'28.559"W	1725.80	13.68	8.13
7577.00	90.15	296.49	6605.07	579.78	1720.48	323.85	517848.8	4403376.6	39°46'48.518"N	80°47'29.639"W	1750.69	10.66	1.82
7672.00	90.15	295.99	6604.82	674.57	1762.48	238.64	517822.8	4403389.4	39°46'48.935"N	80°47'30.729"W	1778.56	7.71	0.53
7767.00	90.68	299.14	6604.13	769.47	1806.43	154.43	517797.2	4403402.8	39°46'49.371"N	80°47'31.806"W	1813.02	4.89	3.36
7861.00	90.58	297.46	6603.10	863.42	1850.99	71.68	517771.9	4403416.3	39°46'49.814"N	80°47'32.865"W	1852.38	2.22	1.79

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MD [ft]	Inclination n [°]	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]
7956.00	90.62	298.12	6602.10	958.35	1895.28	-12.36	517746.3	4403429.8	39°46'50.253"N	80°47'33.940"W	1895.32	359.63	0.70
8050.00	90.65	299.46	6601.06	1052.32	1940.55	-94.73	517721.2	4403443.6	39°46'50.702"N	80°47'34.994"W	1942.86	359.21	1.43
8144.00	90.65	299.22	6600.00	1146.30	1986.61	-176.67	517696.3	4403457.7	39°46'51.159"N	80°47'36.042"W	1994.45	354.92	0.26
8239.00	90.62	301.09	6598.94	1241.29	2034.32	-258.81	517671.2	4403472.2	39°46'51.633"N	80°47'37.093"W	2050.92	352.75	1.97
8334.00	90.58	303.03	6597.95	1336.22	2084.74	-339.31	517646.7	4403487.6	39°46'52.133"N	80°47'38.122"W	2112.18	350.76	2.04
8429.00	90.68	303.29	6596.90	1431.07	2136.70	-418.83	517622.5	4403503.4	39°46'52.648"N	80°47'39.139"W	2177.37	348.91	0.29
8523.00	90.71	302.07	6595.76	1524.96	2187.45	-497.95	517598.4	4403518.9	39°46'53.152"N	80°47'40.151"W	2243.41	347.18	1.30
8618.00	90.68	298.66	6594.61	1619.94	2235.47	-579.90	517573.4	4403533.5	39°46'53.628"N	80°47'41.199"W	2309.46	345.46	3.59
8712.00	90.52	298.79	6593.63	1713.91	2280.64	-662.32	517548.3	4403547.2	39°46'54.076"N	80°47'42.254"W	2374.87	343.81	0.22
8806.00	90.62	304.57	6592.69	1807.83	2329.98	-742.28	517523.9	4403562.3	39°46'54.566"N	80°47'43.277"W	2445.36	342.33	6.15
8901.00	91.11	303.68	6591.26	1902.57	2383.27	-820.91	517500.0	4403578.5	39°46'55.094"N	80°47'44.282"W	2520.69	340.99	1.07
8996.00	90.68	300.24	6589.77	1997.49	2433.54	-901.49	517475.4	4403593.8	39°46'55.593"N	80°47'45.313"W	2595.15	339.67	3.65
9091.00	90.89	298.28	6588.47	2092.46	2479.97	-984.36	517450.2	4403608.0	39°46'56.054"N	80°47'46.373"W	2668.19	338.35	2.07
9185.00	90.74	295.60	6587.13	2186.31	2522.55	-1068.14	517424.7	4403621.0	39°46'56.476"N	80°47'47.445"W	2739.38	337.05	2.86
9281.00	90.71	295.61	6585.92	2282.02	2564.04	-1154.71	517398.3	4403633.6	39°46'56.888"N	80°47'48.553"W	2812.05	335.76	0.03
9376.00	90.62	295.61	6584.82	2376.74	2605.10	-1240.37	517372.2	4403646.1	39°46'57.296"N	80°47'49.649"W	2885.31	334.54	0.09
9470.00	90.62	302.57	6583.80	2470.66	2650.77	-1322.45	517347.2	4403660.0	39°46'57.749"N	80°47'50.699"W	2962.34	333.49	7.40
9565.00	90.68	304.72	6582.72	2565.46	2703.39	-1401.53	517323.1	4403676.1	39°46'58.271"N	80°47'51.710"W	3045.10	332.60	2.26
9660.00	90.65	302.34	6581.62	2660.26	2755.86	-1480.71	517299.0	4403692.0	39°46'58.791"N	80°47'52.723"W	3128.46	331.75	2.51
9754.00	90.52	300.04	6580.66	2754.23	2804.54	-1561.11	517274.5	4403706.9	39°46'59.274"N	80°47'53.751"W	3209.75	330.90	2.45
9849.00	91.17	297.86	6579.26	2849.20	2850.51	-1644.23	517249.1	4403720.9	39°46'59.730"N	80°47'54.815"W	3290.73	330.02	2.39
9945.00	90.46	295.32	6577.89	2945.01	2893.47	-1730.06	517223.0	4403734.0	39°47'00.157"N	80°47'55.913"W	3371.25	329.12	2.75
10040.00	90.52	299.54	6577.08	3039.89	2937.23	-1814.36	517197.3	4403747.3	39°47'00.591"N	80°47'56.991"W	3452.42	328.30	4.44
10135.00	90.58	298.40	6576.17	3134.87	2983.24	-1897.46	517172.0	4403761.3	39°47'01.048"N	80°47'58.055"W	3535.54	327.54	1.20
10229.00	90.62	303.02	6575.18	3228.83	3031.23	-1978.26	517147.4	4403775.9	39°47'01.524"N	80°47'59.088"W	3619.64	326.87	4.91
10324.00	90.83	306.09	6573.98	3323.51	3085.10	-2056.48	517123.5	4403792.3	39°47'02.058"N	80°48'00.089"W	3707.69	326.31	3.24
10419.00	91.11	305.69	6572.37	3418.00	3140.78	-2133.43	517100.1	4403809.3	39°47'02.610"N	80°48'01.073"W	3796.85	325.81	0.51
10514.00	91.14	302.84	6570.50	3512.71	3194.25	-2211.92	517076.2	4403825.6	39°47'03.140"N	80°48'02.076"W	3885.34	325.30	3.00
10609.00	90.95	300.31	6568.77	3607.65	3243.99	-2292.84	517051.5	4403840.8	39°47'03.633"N	80°48'03.112"W	3972.47	324.75	2.67
10704.00	90.86	299.27	6567.27	3702.63	3291.18	-2375.27	517026.4	4403855.1	39°47'04.101"N	80°48'04.166"W	4058.79	324.18	1.10
10799.00	90.95	297.36	6565.77	3797.58	3336.23	-2458.89	517000.9	4403868.9	39°47'04.548"N	80°48'05.236"W	4144.46	323.61	2.01

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10894.00	90.98	293.91	6564.17	3892.27	3377.32	-2544.51	516974.8	4403881.4	39°47'04.956"N	80°48'06.332"W	4228.57	323.01	3.63
10989.00	90.86	294.67	6562.64	3986.79	3416.39	-2631.09	516948.5	4403893.3	39°47'05.344"N	80°48'07.440"W	4227.22	322.40	0.81
11083.00	90.83	298.77	6561.26	4080.60	3458.64	-2715.03	516922.9	4403906.2	39°47'05.764"N	80°48'08.513"W	4307.00	321.87	4.36
11178.00	90.86	300.16	6559.86	4175.59	3505.37	-2797.73	516897.7	4403920.4	39°47'06.227"N	80°48'09.572"W	4480.96	320.41	1.46
11273.00	90.92	299.39	6558.38	4270.58	3552.54	-2880.18	516872.6	4403934.8	39°47'06.695"N	80°48'10.626"W	4573.39	320.97	0.81
11368.00	90.89	302.95	6556.88	4365.53	3601.69	-2961.44	516847.8	4403949.7	39°47'07.183"N	80°48'11.666"W	4662.87	320.57	3.75
11463.00	91.17	303.87	6555.17	4460.34	3653.99	-3040.73	516823.7	4403965.7	39°47'07.701"N	80°48'12.680"W	4753.70	320.23	1.01
11557.00	91.20	300.10	6553.23	4554.25	3703.77	-3120.43	516799.4	4403980.8	39°47'08.195"N	80°48'13.700"W	4843.03	319.89	4.01
11652.00	91.11	299.67	6551.31	4649.23	3751.09	-3202.78	516774.3	4403995.3	39°47'08.665"N	80°48'14.753"W	4932.39	319.51	0.46
11746.00	90.62	297.00	6549.89	4743.17	3795.70	-3285.50	516749.1	4404008.9	39°47'09.107"N	80°48'15.811"W	5020.14	319.12	2.89
11828.00	90.68	295.67	6548.96	4825.00	3832.07	-3358.98	516726.7	4404019.9	39°47'09.468"N	80°48'16.752"W	5095.83	318.76	1.62
11852.00	90.68	295.67	6548.68	4848.93	3842.46	-3380.61	516720.1	4404023.1	39°47'09.571"N	80°48'17.029"W	5117.92	318.66	0.00

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