



Survey Report - Geographic



<b>Company:</b>	Tug Hill Operating LLC	<b>Local Co-ordinate Reference:</b>	Well Woodford 04HM (D)
<b>Project:</b>	Marshall County, West Virginia	<b>TVD Reference:</b>	RKB=1235+33 @ 1268.00ft (Nabors X08)
<b>Site:</b>	Woodford	<b>MD Reference:</b>	RKB=1235+33 @ 1268.00ft (Nabors X08)
<b>Well:</b>	Woodford 04HM (D)	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Origina Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys Origina Hole	<b>Database:</b>	DB_Aug1919_v14

<b>Project</b>	Marshall County, West Virginia
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)
<b>Geo Datum:</b>	NAD83 West Virginia - HARN
<b>Map Zone:</b>	Zone 17N (84 W to 78 W)
<b>System Datum:</b>	Mean Sea Level

<b>Site</b>	Woodford
<b>Site Position:</b>	Latitude: 39.80414597
<b>From:</b>	Longitude: -80.81199526
<b>Position Uncertainty:</b>	Slot Radius: 0.120 °
	Northing: 14,455,471.78 usft
	Eastings: 1,693,217.70 usft
	Grid Convergence: 0.120 °
	Wellhead Elevation: 13-3/16 "

<b>Well</b>	Woodford 04HM (D)		
<b>Well Position</b>	+N/-S 0.00 ft	Northing: 14,455,459.61 usft	Latitude: 39.80411257
	+E/-W 0.00 ft	Eastings: 1,693,214.92 usft	Longitude: -80.81200527
<b>Position Uncertainty</b>	0.00 ft	Wellhead Elevation: ft	Ground Level: 1,235.00 ft

<b>Wellbore</b>	Origina Hole				
<b>Magnetics</b>	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	8/14/2019	-8.688	66.804	51,944,93619262

<b>Design</b>	Surveys Origina Hole				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
<b>Vertical Section:</b>	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	147.09	

<b>Survey Program</b>	From (ft)	To (ft)	Date	8/29/2019	Survey (Wellbore)	Tool Name	Description
	151.00	899.00	MWD surf (Origina Hole)	MWD	MWD - Standard		
	983.00	2,695.00	MWD int (Origina Hole)	MWD	MWD - Standard		
	2,778.00	17,158.00	MWD (Origina Hole)	MWD	MWD - Standard		
	17,216.00	17,216.00	Projection (Origina Hole)	MWD	MWD - Standard		

<b>Survey</b>	Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
	0.00	0.00	0.00	0.00	0.00	0.00	14,455,459.61	1,693,214.92	39.80411257	-80.81200527
	151.00	0.38	77.99	151.00	0.10	0.49	14,455,459.71	1,693,215.41	39.80411286	-80.81200353
	<b>MWD surveys</b>									
	181.00	0.49	120.05	181.00	0.06	0.70	14,455,459.67	1,693,215.61	39.80411273	-80.81200278
	211.00	0.46	149.17	211.00	-0.11	0.87	14,455,459.50	1,693,215.79	39.80411226	-80.81200216
	241.00	0.53	137.27	241.00	-0.32	1.03	14,455,459.29	1,693,215.95	39.80411168	-80.81200160
	271.00	0.41	133.51	270.99	-0.50	1.20	14,455,459.11	1,693,216.12	39.80411120	-80.81200099
	301.00	0.19	93.61	300.99	-0.57	1.33	14,455,459.03	1,693,216.25	39.80411099	-80.81200053
	331.00	0.30	96.59	330.99	-0.59	1.46	14,455,459.02	1,693,216.37	39.80411095	-80.81200008



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**Project:** Marshall County, West Virginia  
**Site:** Woodford  
**Well:** Woodford 04HM (D)  
**Wellbore:** Origina Hole  
**Design:** Surveys Origina Hole

**Local Co-ordinate Reference:**  
**TVD Reference:** Well Woodford 04HM (D)  
**MD Reference:** RKB=1235+33 @ 1268.00ft (Nabors X08)  
**North Reference:** RKB=1235+33 @ 1268.00ft (Nabors X08)  
**Survey Calculation Method:** Grid  
**Database:** Minimum Curvature  
 DB\_Aug1919\_v14

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
361.00	0.36	328.29	360.99	-0.52	1.49	14,455,459.09	1,693,216.40	39.80411115	-80.81199998
391.00	0.33	122.58	390.99	-0.48	1.51	14,455,459.13	1,693,216.43	39.80411124	-80.81199989
421.00	0.10	29.64	420.99	-0.51	1.60	14,455,459.10	1,693,216.51	39.80411118	-80.81199959
451.00	0.10	314.79	450.99	-0.46	1.59	14,455,459.14	1,693,216.51	39.80411129	-80.81199961
481.00	0.23	345.19	480.99	-0.39	1.56	14,455,459.22	1,693,216.47	39.80411150	-80.81199973
511.00	0.11	101.64	510.99	-0.33	1.57	14,455,459.27	1,693,216.49	39.80411164	-80.81199968
541.00	0.14	8.54	540.99	-0.30	1.60	14,455,459.30	1,693,216.52	39.80411173	-80.81199956
571.00	0.07	289.23	570.99	-0.26	1.59	14,455,459.35	1,693,216.51	39.80411184	-80.81199961
601.00	0.18	240.66	600.99	-0.28	1.53	14,455,459.33	1,693,216.45	39.80411180	-80.81199981
632.00	0.28	91.35	631.99	-0.30	1.57	14,455,459.37	1,693,216.55	39.80411173	-80.81199970
663.00	0.26	349.86	662.99	-0.24	1.63	14,455,459.37	1,693,216.55	39.80411191	-80.81199947
695.00	0.14	121.96	694.99	-0.19	1.65	14,455,459.42	1,693,216.57	39.80411205	-80.81199940
727.00	0.45	321.79	726.99	-0.11	1.61	14,455,459.50	1,693,216.52	39.80411226	-80.81199955
758.00	0.33	277.37	757.99	0.00	1.44	14,455,459.61	1,693,216.36	39.80411256	-80.81200014
790.00	0.17	186.61	789.99	-0.04	1.35	14,455,459.57	1,693,216.26	39.80411246	-80.81200048
821.00	0.23	243.27	820.99	-0.11	1.28	14,455,459.50	1,693,216.20	39.80411226	-80.81200070
853.00	0.23	284.82	852.99	-0.12	1.16	14,455,459.59	1,693,216.08	39.80411223	-80.81200112
884.00	0.32	253.57	883.99	-0.13	1.02	14,455,459.48	1,693,215.94	39.80411220	-80.81200163
899.00	0.36	268.71	898.99	-0.14	0.93	14,455,459.46	1,693,215.85	39.80411217	-80.81200195
983.00	0.84	254.39	982.99	-0.32	0.08	14,455,459.29	1,693,214.99	39.80411170	-80.81200500
1,078.00	1.19	278.93	1,077.97	-0.84	-1.52	14,455,458.77	1,693,213.39	39.80411028	-80.81202691
1,173.00	1.13	278.93	1,172.95	-1.02	-3.38	14,455,458.58	1,693,211.54	39.80411792	-80.81203117
1,268.00	0.95	304.79	1,267.94	-0.43	-4.95	14,455,459.18	1,693,209.97	39.80412466	-80.81203766
1,363.00	0.84	315.95	1,362.93	0.52	-6.08	14,455,460.13	1,693,208.84	39.80411404	-80.81204687
1,457.00	1.42	321.79	1,456.91	1.93	-7.28	14,455,461.54	1,693,207.64	39.80411792	-80.81205980
1,552.00	2.27	324.23	1,551.86	4.38	-11.70	14,455,463.99	1,693,203.21	39.80413478	-80.81206487
1,646.00	3.22	325.20	1,645.75	8.06	-15.34	14,455,467.37	1,693,199.57	39.80415048	-80.81206980
1,741.00	4.96	328.94	1,740.50	13.77	-19.75	14,455,473.68	1,693,195.17	39.80417408	-80.81207542
1,836.00	6.72	335.72	1,835.01	22.36	-24.81	14,455,481.96	1,693,193.21	39.80454462	-80.81229751
1,930.00	9.24	338.21	1,928.09	34.38	-28.17	14,455,493.99	1,693,190.10	39.80454806	-80.81229864
2,025.00	11.55	339.06	2,021.52	50.34	-31.04	14,455,509.95	1,693,183.87	39.80425101	-80.81211542
2,120.00	13.89	340.65	2,114.22	69.84	-38.17	14,455,529.44	1,693,176.75	39.80430458	-80.81214065
2,214.00	12.12	333.89	2,205.85	89.19	-46.20	14,455,548.80	1,693,168.72	39.80435779	-80.81216909
2,309.00	9.89	324.35	2,299.11	104.78	-55.34	14,455,564.39	1,693,159.57	39.80440065	-80.81220154
2,404.00	8.22	323.41	2,392.92	116.87	-64.15	14,455,576.47	1,693,150.77	39.80443389	-80.81223280
2,499.00	8.53	330.39	2,486.91	128.44	-71.68	14,455,588.05	1,693,143.24	39.80446573	-80.81225952
2,593.00	9.17	340.22	2,579.79	141.56	-77.66	14,455,601.16	1,693,137.26	39.80450177	-80.81228072
2,688.00	10.61	345.52	2,673.38	157.15	-82.40	14,455,616.76	1,693,132.51	39.80454462	-80.81229751
2,695.00	10.71	345.86	2,680.26	158.40	-82.72	14,455,618.01	1,693,132.19	39.80454806	-80.81229864
2,778.00	10.98	347.17	2,761.78	173.59	-86.36	14,455,633.20	1,693,128.55	39.80458979	-80.81231148
2,873.00	8.00	342.04	2,855.47	188.70	-90.41	14,455,648.31	1,693,124.50	39.80463132	-80.81232578
2,968.00	7.21	339.46	2,949.63	200.57	-94.54	14,455,660.18	1,693,120.37	39.80466394	-80.81234040
3,062.00	9.01	339.27	3,042.69	212.98	-99.22	14,455,672.59	1,693,115.70	39.80469805	-80.81235696
3,157.00	10.97	339.09	3,136.24	228.38	-105.08	14,455,687.99	1,693,109.84	39.80474038	-80.81237771
3,252.00	12.30	337.90	3,229.29	246.20	-112.11	14,455,705.81	1,693,102.80	39.80478936	-80.81240262
3,347.00	19.10	343.11	3,320.70	270.48	-120.44	14,455,730.09	1,693,094.47	39.80485608	-80.81243211
3,441.00	24.84	345.71	3,407.84	304.36	-129.79	14,455,763.97	1,693,085.12	39.80494917	-80.81246514
3,535.00	33.14	340.14	3,490.00	347.74	-143.42	14,455,807.35	1,693,071.49	39.80506839	-80.81251335
3,630.00	39.57	336.52	3,566.48	399.98	-164.32	14,455,859.59	1,693,050.59	39.80521927	-80.81258738
3,725.00	43.86	333.45	3,637.38	457.21	-191.11	14,455,916.81	1,693,023.81	39.80536929	-80.81268232
3,819.00	43.94	338.97	3,705.14	516.80	-217.38	14,455,976.41	1,692,997.54	39.80553310	-80.81277541
3,917.00	44.44	339.74	3,775.41	580.73	-241.46	14,456,040.33	1,692,973.46	39.80570879	-80.81286069
4,011.00	44.04	336.93	3,842.76	641.66	-265.66	14,456,101.27	1,692,949.26	39.80587628	-80.81294640
4,106.00	43.67	336.88	3,911.27	702.21	-281.48	14,456,161.61	1,692,923.44	39.80604270	-80.81303788
4,200.00	43.06	337.81	3,979.60	761.77	-316.34	14,456,221.38	1,692,898.58	39.80620641	-80.81312597





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**Local Co-ordinate Reference:**  
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**Survey Calculation Method:** Grid  
**Database:** Minimum Curvature  
 DB\_Aug1919\_v14

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,295.00	42.64	339.44	4,049.25	821.93	-339.89	14,456,281.53	1,692,875.03	39.80637176	-80.81320938
4,390.00	41.41	340.64	4,119.82	881.70	-361.61	14,456,341.31	1,692,853.31	39.80653603	-80.81328626
4,484.00	42.01	339.50	4,190.00	940.49	-382.93	14,456,400.10	1,692,831.99	39.80669762	-80.81336174
4,579.00	42.71	338.13	4,260.20	1,000.17	-406.06	14,456,459.78	1,692,808.85	39.80686164	-80.81344368
4,673.00	44.63	337.70	4,328.19	1,060.31	-430.37	14,456,519.92	1,692,784.45	39.80702694	-80.81353014
4,768.00	43.97	340.10	4,396.18	1,122.20	-454.36	14,456,581.81	1,692,760.56	39.80719704	-80.81361474
4,863.00	42.98	340.96	4,465.12	1,183.82	-476.15	14,456,643.43	1,692,738.77	39.80736640	-80.81369188
4,957.00	43.19	338.93	4,533.78	1,244.13	-498.17	14,456,703.74	1,692,716.75	39.80753215	-80.81376983
5,051.00	41.73	337.58	4,603.12	1,303.07	-521.67	14,456,762.68	1,692,693.25	39.80769415	-80.81385307
5,145.00	42.12	339.00	4,673.06	1,361.42	-544.90	14,456,821.03	1,692,670.02	39.80785453	-80.81393535
5,240.00	42.97	337.37	4,743.06	1,421.05	-568.77	14,456,880.66	1,692,646.15	39.80801842	-80.81401992
5,335.00	44.01	336.29	4,811.98	1,481.15	-594.50	14,456,940.76	1,692,620.40	39.80818362	-80.81411110
5,430.00	44.60	335.66	4,879.96	1,541.76	-621.52	14,457,001.36	1,692,593.42	39.80835022	-80.81420685
5,524.00	43.29	336.68	4,947.64	1,601.43	-647.88	14,457,061.03	1,692,567.04	39.80851423	-80.81430027
5,619.00	44.46	339.18	5,016.13	1,662.44	-672.80	14,457,122.04	1,692,542.32	39.80868193	-80.81438785
5,685.00	44.04	335.81	5,063.41	1,704.98	-690.22	14,457,184.58	1,692,520.70	39.80879884	-80.81445027
5,739.00	43.16	337.93	5,102.52	1,739.21	-704.85	14,457,246.82	1,692,498.88	39.80892996	-80.81450212
5,833.00	38.59	337.75	5,173.58	1,796.17	-728.04	14,457,295.78	1,692,476.88	39.80904951	-80.81458429
5,926.00	31.74	338.81	5,249.56	1,845.88	-747.89	14,457,305.49	1,692,467.03	39.80918614	-80.81465460
6,020.00	25.85	341.97	5,331.90	1,888.46	-763.18	14,457,348.07	1,692,451.73	39.80930317	-80.81470874
6,114.00	24.26	339.95	5,417.06	1,926.09	-784.00	14,457,385.70	1,692,430.92	39.80940658	-80.81475463
6,209.00	18.29	355.59	5,505.61	1,959.35	-784.00	14,457,418.95	1,692,413.30	39.80949794	-80.81478234
6,304.00	14.37	17.39	5,596.85	1,985.49	-781.62	14,457,445.10	1,692,400.30	39.80958975	-80.81477367
6,399.00	15.16	52.64	5,688.89	2,004.32	-768.20	14,457,463.92	1,692,446.72	39.80962137	-80.81472573
6,494.00	15.65	82.78	5,780.63	2,013.48	-745.57	14,457,473.09	1,692,469.34	39.80964640	-80.81464511
6,589.00	16.79	118.82	5,872.07	2,008.47	-720.78	14,457,468.07	1,692,494.14	39.80963248	-80.81455685
6,683.00	21.19	135.25	5,961.00	1,989.83	-696.89	14,457,449.44	1,692,518.02	39.80958118	-80.81447194
6,778.00	30.24	129.80	6,046.51	1,962.27	-666.36	14,457,421.87	1,692,548.56	39.80950530	-80.81436342
6,872.00	38.42	132.70	6,124.08	1,927.25	-626.64	14,457,386.85	1,692,588.28	39.80940890	-80.81422224
6,966.00	48.26	139.03	6,192.39	1,880.82	-582.05	14,457,340.43	1,692,632.87	39.80928115	-80.81406380
7,061.00	58.95	147.12	6,248.74	1,819.64	-536.54	14,457,279.25	1,692,678.38	39.80911288	-80.81390220
7,156.00	64.40	151.78	6,293.81	1,747.64	-494.14	14,457,207.24	1,692,720.78	39.80891489	-80.81375176
7,250.00	72.09	153.18	6,328.63	1,670.26	-453.86	14,457,129.86	1,692,761.06	39.80870215	-80.81360889
7,344.00	80.09	153.27	6,351.21	1,588.86	-412.79	14,457,048.47	1,692,802.13	39.80847839	-80.81346325
7,439.00	80.31	152.66	6,367.38	1,505.48	-370.24	14,456,965.09	1,692,844.68	39.80824915	-80.81331236
7,534.00	84.18	151.78	6,380.20	1,422.22	-326.37	14,456,881.82	1,692,888.55	39.80802023	-80.81315677
7,628.00	87.08	149.75	6,387.36	1,340.44	-280.60	14,456,800.05	1,692,934.32	39.80779540	-80.81299440
7,722.00	88.00	148.96	6,391.39	1,259.65	-232.73	14,456,719.25	1,692,982.19	39.80757324	-80.81282455
7,817.00	89.23	149.93	6,393.69	1,177.87	-184.45	14,456,637.47	1,693,030.46	39.80734836	-80.81265325
7,912.00	90.29	149.75	6,394.09	1,095.73	-136.72	14,456,555.33	1,693,078.19	39.80712252	-80.81248391
8,006.00	90.37	149.58	6,393.55	1,014.60	-89.25	14,456,474.20	1,693,125.67	39.80689944	-80.81231548
8,101.00	90.77	148.96	6,392.60	932.94	-40.71	14,456,392.55	1,693,174.21	39.80667492	-80.81214324
8,195.00	88.57	149.67	6,393.14	852.11	7.26	14,456,311.72	1,693,222.17	39.80645265	-80.81197305
8,290.00	88.53	149.75	6,395.55	770.11	55.16	14,456,229.71	1,693,270.07	39.80622717	-80.81180311
8,385.00	88.66	149.32	6,397.88	688.25	103.31	14,456,147.85	1,693,318.23	39.80600208	-80.81163327
8,479.00	88.35	150.19	6,400.33	607.07	150.64	14,456,066.68	1,693,365.56	39.80577888	-80.81146434
8,574.00	90.11	150.02	6,401.60	524.72	197.98	14,455,984.33	1,693,412.90	39.80555245	-80.81129639
8,668.00	90.64	150.02	6,400.99	443.30	244.95	14,455,902.91	1,693,459.87	39.80532858	-80.81112975
8,763.00	90.73	149.05	6,399.85	361.42	293.12	14,455,821.03	1,693,508.03	39.80510344	-80.81095888
8,857.00	89.67	149.49	6,399.53	280.62	341.15	14,455,740.23	1,693,556.06	39.80489127	-80.81078846
8,952.00	90.07	148.88	6,399.74	199.04	389.81	14,455,658.64	1,693,604.73	39.80465692	-80.81061580
9,046.00	88.35	150.19	6,401.04	118.03	437.47	14,455,577.64	1,693,652.38	39.80443417	-80.81044674
9,141.00	88.40	150.11	6,403.73	35.66	484.73	14,455,495.27	1,693,699.65	39.80420771	-80.81027907
9,235.00	89.27	151.42	6,405.64	-46.34	530.63	14,455,413.27	1,693,745.54	39.80398223	-80.81011626
9,329.00	89.80	150.81	6,406.41	-128.65	576.03	14,455,330.96	1,693,790.95	39.80375594	-80.80995522



Survey Report - Geographic



Company:

Tug Hill Operating LLC
Marshall County, West Virginia
Woodford
Woodford 04HM (D)
Origina Hole
Surveys Origina Hole

Local Co-ordinate Reference:

Well Woodford 04HM (D)
RKB=1235+33 @ 1268.00ft (Nabors X08)
RKB=1235+33 @ 1268.00ft (Nabors X08)
Grid
Minimum Curvature
DB\_Aug1919\_v14

Project:

Site:

Well:

Wellbore:

Design:

Survey

Table with columns: Measured Depth (ft), Inclination (°), Azimuth (°), Vertical Depth (ft), +N/-S (ft), +E/-W (ft), Map Northing (usft), Map Easting (usft), Latitude, Longitude. Contains 100 rows of survey data.





Survey Report - Geographic



<b>Company:</b>	Tug Hill Operating LLC	<b>Local Co-ordinate Reference:</b>	Well Woodford 04HM (D)
<b>Project:</b>	Marshall County, West Virginia	<b>TVD Reference:</b>	RKB=1235+33 @ 1268.00ft (Nabors X08)
<b>Site:</b>	Woodford	<b>MD Reference:</b>	RKB=1235+33 @ 1268.00ft (Nabors X08)
<b>Well:</b>	Woodford 04HM (D)	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Origina Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys Origina Hole	<b>Database:</b>	DB_Aug1919_v14

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,625.00	89.23	150.02	6,446.82	-4,727.00	3,200.24	14,450,732.62	1,696,415.15	39.79111194	-80.80064799
14,719.00	89.23	149.93	6,448.08	-4,808.38	3,247.27	14,450,651.24	1,696,462.18	39.79088816	-80.80048120
14,814.00	89.01	149.40	6,449.54	-4,890.36	3,295.25	14,450,569.25	1,696,510.16	39.79066272	-80.80031107
14,909.00	89.10	148.79	6,451.11	-4,971.86	3,344.03	14,450,487.75	1,696,558.94	39.79043860	-80.80013804
15,003.00	88.92	148.08	6,452.73	-5,051.94	3,393.23	14,450,407.67	1,696,608.14	39.79021838	-80.79996354
15,098.00	89.14	149.23	6,454.34	-5,133.07	3,442.64	14,450,326.55	1,696,657.55	39.78999529	-80.79978629
15,193.00	89.19	149.75	6,455.73	-5,214.90	3,490.87	14,450,244.71	1,696,705.77	39.78974025	-80.79961727
15,288.00	89.27	149.23	6,457.00	-5,296.74	3,539.09	14,450,162.88	1,696,754.00	39.78954520	-80.79944624
15,382.00	88.97	148.79	6,458.45	-5,377.31	3,587.49	14,450,082.30	1,696,802.39	39.78932363	-80.79927461
15,476.00	88.92	149.14	6,460.18	-5,457.85	3,635.94	14,450,001.77	1,696,850.85	39.78910217	-80.79910277
15,571.00	89.36	149.14	6,461.60	-5,539.39	3,684.66	14,449,920.23	1,696,899.57	39.78887794	-80.79892997
15,666.00	89.93	150.19	6,462.19	-5,621.38	3,732.64	14,449,838.24	1,696,947.55	39.78865248	-80.79875983
15,760.00	90.07	150.55	6,462.19	-5,703.08	3,779.12	14,449,756.54	1,697,040.99	39.78842780	-80.79859505
15,855.00	90.20	150.19	6,461.97	-5,785.66	3,826.08	14,449,673.96	1,697,087.46	39.78820073	-80.79842852
15,949.00	89.58	150.55	6,462.15	-5,867.37	3,872.56	14,449,592.25	1,697,133.54	39.78797605	-80.79826374
16,044.00	89.41	151.42	6,462.99	-5,950.44	3,918.63	14,449,509.18	1,697,178.94	39.78774762	-80.79810039
16,138.00	88.35	150.81	6,464.82	-6,032.73	3,964.03	14,449,426.89	1,697,225.39	39.78752136	-80.79793944
16,233.00	88.84	150.63	6,467.15	-6,115.57	4,010.48	14,449,344.05	1,697,271.90	39.78729357	-80.79777477
16,328.00	88.97	150.72	6,468.97	-6,198.38	4,057.00	14,449,261.24	1,697,318.19	39.78706586	-80.79760984
16,422.00	89.27	150.28	6,470.41	-6,280.18	4,103.28	14,449,179.44	1,697,364.90	39.78684092	-80.79744574
16,517.00	89.67	150.81	6,471.29	-6,362.90	4,149.99	14,449,096.72	1,697,410.68	39.78661347	-80.79728013
16,611.00	90.29	150.90	6,471.32	-6,445.00	4,195.77	14,449,014.62	1,697,456.56	39.78638772	-80.79711783
16,706.00	88.70	150.90	6,472.16	-6,528.00	4,241.97	14,448,931.62	1,697,503.01	39.78615948	-80.79695404
16,801.00	89.14	150.99	6,473.95	-6,611.03	4,288.10	14,448,848.59	1,697,548.81	39.78593117	-80.79679051
16,895.00	89.71	150.55	6,474.90	-6,693.06	4,334.00	14,448,766.57	1,697,595.25	39.78570562	-80.79662779
16,989.00	90.24	150.37	6,474.94	-6,774.84	4,380.34	14,448,684.79	1,697,641.59	39.78548074	-80.79646348
17,083.00	90.73	150.55	6,474.14	-6,856.61	4,426.69	14,448,603.01	1,697,687.37	39.78525587	-80.79629918
17,158.00	91.03	150.72	6,472.99	-6,921.97	4,463.46	14,448,537.65	1,697,733.06	39.78507615	-80.79616881
<b>Survey @ 17158.00 MD 6472.99 TVD</b>									
17,216.00	91.03	150.72	6,471.95	-6,972.55	4,491.82	14,448,487.07	1,697,778.73	39.78493706	-80.79606826
<b>Survey projected to 17216.00 MD 6471.95 TVD</b>									

Design Annotations	Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
			+N/-S (ft)	+E/-W (ft)	
	151.00	151.00	0.10	0.49	MWD surveys
	17,158.00	6,472.99	-6,921.97	4,463.46	Survey @ 17158.00 MD 6472.99 TVD
	17,216.00	6,471.95	-6,972.55	4,491.82	Survey projected to 17216.00 MD 6471.95 TVD