



<b>Database:</b>	DB_Jul2216dt_v14	<b>Local Co-ordinate Reference:</b>	Well Evad 06HM (I)
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	RKB=1291+18 @ 1309.00ft (Precision 528)
<b>Project:</b>	Marshall County, West Virginia	<b>MD Reference:</b>	RKB=1291+18 @ 1309.00ft (Precision 528)
<b>Site:</b>	Accettolo/Evad Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	Evad 06HM (I)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev1		

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

<b>Site</b>	Accettolo/Evad Pad				
<b>Site Position:</b>		<b>Northing:</b>	14,433,724.12 usft	<b>Latitude:</b>	39.74438861
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,698,524.31 usft	<b>Longitude:</b>	-80.79327927
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.13 °

<b>Well</b>	Evad 06HM (I)					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	14,433,735.30 usft	<b>Latitude:</b>	39.74441918
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	1,698,545.54 usft	<b>Longitude:</b>	-80.79320366
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	1,291.00 ft

<b>Wellbore</b>	Original Hole				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	4/1/2019	-8.68	66.79	51,954.90976970

<b>Design</b>	rev1				
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<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00	
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	18.00	0.00	0.00	133.22	

<b>Plan Survey Tool Program</b>	<b>Date</b>	3/30/2019			
<b>Depth From (ft)</b>	<b>Depth To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	16,640.49 rev1 (Original Hole)	MWD	MWD - Standard	

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Plan Sections											
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,118.00	0.00	0.00	1,118.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,705.90	31.76	59.83	2,625.83	215.53	370.83	2.00	2.00	0.00	0.00	59.83	
6,695.58	31.76	59.83	6,018.18	1,270.75	2,186.34	0.00	0.00	0.00	0.00	0.00	
7,211.37	50.00	119.25	6,420.78	1,241.14	2,489.27	8.00	3.54	11.52		90.60	
7,691.93	89.10	150.00	6,588.99	924.35	2,787.70	10.00	8.14	6.40		43.42	
16,640.49	89.10	150.00	6,730.00	-6,824.25	7,261.64	0.00	0.00	0.00	0.00	0.00	Evad-6HM BHL r1





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Project:	Marshall County, West Virginia	MD Reference:	RKB=1291+18 @ 1309.00ft (Precision 528)
Site:	Accetolo/Evad Pad	North Reference:	Grid
Well:	Evad 06HM (I)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

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Planned Survey									
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	14,433,735.30	1,698,545.54	39.74441918	-80.79320366
100.00	0.00	0.00	100.00	0.00	0.00	14,433,735.30	1,698,545.54	39.74441918	-80.79320366
200.00	0.00	0.00	200.00	0.00	0.00	14,433,735.30	1,698,545.54	39.74441918	-80.79320366
300.00	0.00	0.00	300.00	0.00	0.00	14,433,735.30	1,698,545.54	39.74441918	-80.79320366
400.00	0.00	0.00	400.00	0.00	0.00	14,433,735.30	1,698,545.54	39.74441918	-80.79320366
500.00	0.00	0.00	500.00	0.00	0.00	14,433,735.30	1,698,545.54	39.74441918	-80.79320366
600.00	0.00	0.00	600.00	0.00	0.00	14,433,735.30	1,698,545.54	39.74441918	-80.79320366
700.00	0.00	0.00	700.00	0.00	0.00	14,433,735.30	1,698,545.54	39.74441918	-80.79320366
800.00	0.00	0.00	800.00	0.00	0.00	14,433,735.30	1,698,545.54	39.74441918	-80.79320366
900.00	0.00	0.00	900.00	0.00	0.00	14,433,735.30	1,698,545.54	39.74441918	-80.79320366
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,433,735.30	1,698,545.54	39.74441918	-80.79320366
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,433,735.30	1,698,545.54	39.74441918	-80.79320366
1,118.00	0.00	0.00	1,118.00	0.00	0.00	14,433,735.30	1,698,545.54	39.74441918	-80.79320366
<b>KOP Begin 2°/100' build</b>									
1,200.00	1.64	59.83	1,199.99	0.59	1.01	14,433,735.89	1,698,546.55	39.74442079	-80.79320005
1,300.00	3.64	59.83	1,299.88	2.90	5.00	14,433,738.20	1,698,550.53	39.74442713	-80.79318586
1,400.00	5.64	59.83	1,399.54	6.97	11.99	14,433,742.27	1,698,557.53	39.74443824	-80.79316095
1,500.00	7.64	59.83	1,498.87	12.78	21.99	14,433,748.08	1,698,567.52	39.74445414	-80.79312534
1,600.00	9.64	59.83	1,597.73	20.33	34.97	14,433,755.63	1,698,580.51	39.74447479	-80.79307907
1,700.00	11.64	59.83	1,696.00	29.61	50.94	14,433,764.91	1,698,596.47	39.74450016	-80.79302221
1,800.00	13.64	59.83	1,793.58	40.60	69.85	14,433,775.90	1,698,615.39	39.74453024	-80.79295482
1,900.00	15.64	59.83	1,890.32	53.30	91.71	14,433,788.60	1,698,637.24	39.74456498	-80.79287698
2,000.00	17.64	59.83	1,986.13	67.69	116.46	14,433,802.99	1,698,662.00	39.74460434	-80.79278879
2,100.00	19.64	59.83	2,080.88	83.75	144.09	14,433,819.05	1,698,689.63	39.74464827	-80.79269036
2,200.00	21.64	59.83	2,174.46	101.46	174.57	14,433,836.76	1,698,720.10	39.74469672	-80.79258180
2,300.00	23.64	59.83	2,266.75	120.81	207.85	14,433,856.11	1,698,753.38	39.74474963	-80.79246325
2,400.00	25.64	59.83	2,357.64	141.75	243.89	14,433,877.06	1,698,789.43	39.74480693	-80.79233485
2,500.00	27.64	59.83	2,447.02	164.29	282.65	14,433,899.59	1,698,828.19	39.74486856	-80.79219676
2,600.00	29.64	59.83	2,534.78	188.37	324.09	14,433,923.67	1,698,869.63	39.74493444	-80.79204914
2,700.00	31.64	59.83	2,620.81	213.98	368.15	14,433,949.28	1,698,913.69	39.74500449	-80.79189219
2,705.90	31.76	59.83	2,625.83	215.54	370.83	14,433,950.84	1,698,916.37	39.74500875	-80.79188264
<b>Begin 31.76° tangent</b>									
2,800.00	31.76	59.83	2,705.84	240.42	413.65	14,433,975.72	1,698,959.19	39.74507683	-80.79173010
2,900.00	31.76	59.83	2,790.87	266.87	459.16	14,434,002.17	1,699,004.69	39.74514917	-80.79156799
3,000.00	31.76	59.83	2,875.90	293.32	504.66	14,434,028.62	1,699,050.20	39.74522152	-80.79140588
3,100.00	31.76	59.83	2,960.93	319.77	550.17	14,434,055.07	1,699,095.70	39.74529386	-80.79124378
3,200.00	31.76	59.83	3,045.96	346.22	595.67	14,434,081.52	1,699,141.21	39.74536620	-80.79108167
3,300.00	31.76	59.83	3,130.98	372.67	641.18	14,434,107.97	1,699,186.71	39.74543855	-80.79091956
3,400.00	31.76	59.83	3,216.01	399.12	686.68	14,434,134.42	1,699,232.22	39.74551089	-80.79075746
3,500.00	31.76	59.83	3,301.04	425.56	732.19	14,434,160.86	1,699,277.72	39.74558324	-80.79059535
3,600.00	31.76	59.83	3,386.07	452.01	777.69	14,434,187.31	1,699,323.23	39.74565558	-80.79043324
3,700.00	31.76	59.83	3,471.10	478.46	823.20	14,434,213.76	1,699,368.73	39.74572792	-80.79027113
3,800.00	31.76	59.83	3,556.12	504.91	868.70	14,434,240.21	1,699,414.24	39.74580027	-80.79010902
3,900.00	31.76	59.83	3,641.15	531.36	914.21	14,434,266.66	1,699,459.74	39.74587261	-80.78994691
4,000.00	31.76	59.83	3,726.18	557.81	959.71	14,434,293.11	1,699,505.25	39.74594495	-80.78978481
4,100.00	31.76	59.83	3,811.21	584.26	1,005.22	14,434,319.56	1,699,550.75	39.74601729	-80.78962270
4,200.00	31.76	59.83	3,896.23	610.71	1,050.72	14,434,346.00	1,699,596.26	39.74608964	-80.78946059
4,300.00	31.76	59.83	3,981.26	637.15	1,096.23	14,434,372.45	1,699,641.76	39.74616198	-80.78929847
4,400.00	31.76	59.83	4,066.29	663.60	1,141.73	14,434,398.90	1,699,687.27	39.74623432	-80.78913636
4,500.00	31.76	59.83	4,151.32	690.05	1,187.24	14,434,425.35	1,699,732.77	39.74630666	-80.78897425
4,600.00	31.76	59.83	4,236.35	716.50	1,232.74	14,434,451.80	1,699,778.28	39.74637900	-80.78881214
4,700.00	31.76	59.83	4,321.37	742.95	1,278.25	14,434,478.25	1,699,823.78	39.74645134	-80.78865003
4,800.00	31.76	59.83	4,406.40	769.40	1,323.75	14,434,504.70	1,699,869.29	39.74652368	-80.78848792
4,900.00	31.76	59.83	4,491.43	795.85	1,369.26	14,434,531.14	1,699,914.79	39.74659602	-80.78832580

WV Department of Environmental Protection





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<b>Project:</b>	Marshall County, West Virginia	<b>MD Reference:</b>	RKB=1291+18 @ 1309.00ft (Precision 528)
<b>Site:</b>	Accetollo/Evad Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	Evad 06HM (I)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		<b>RECEIVED</b>
<b>Design:</b>	rev1		Office of Oil and Gas

JUL 20 2020

Planned Survey								WV Department of Environmental Protection	
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,000.00	31.76	59.83	4,576.46	822.29	1,414.76	14,434,557.59	1,699,960.30	39.74666837	-80.78816369
5,100.00	31.76	59.83	4,661.49	848.74	1,460.27	14,434,584.04	1,700,005.80	39.74674071	-80.78800158
5,200.00	31.76	59.83	4,746.51	875.19	1,505.78	14,434,610.49	1,700,051.31	39.74681305	-80.78783947
5,300.00	31.76	59.83	4,831.54	901.64	1,551.28	14,434,636.94	1,700,096.81	39.74688538	-80.78767735
5,400.00	31.76	59.83	4,916.57	928.09	1,596.79	14,434,663.39	1,700,142.32	39.74695772	-80.78751524
5,500.00	31.76	59.83	5,001.60	954.54	1,642.29	14,434,689.84	1,700,187.82	39.74703006	-80.78735312
5,600.00	31.76	59.83	5,086.63	980.99	1,687.80	14,434,716.28	1,700,233.33	39.74710240	-80.78719101
5,700.00	31.76	59.83	5,171.65	1,007.43	1,733.30	14,434,742.73	1,700,278.83	39.74717474	-80.78702889
5,800.00	31.76	59.83	5,256.68	1,033.88	1,778.81	14,434,769.18	1,700,324.34	39.74724708	-80.78686678
5,900.00	31.76	59.83	5,341.71	1,060.33	1,824.31	14,434,795.63	1,700,369.84	39.74731942	-80.78670466
6,000.00	31.76	59.83	5,426.74	1,086.78	1,869.82	14,434,822.08	1,700,415.35	39.74739176	-80.78654254
6,100.00	31.76	59.83	5,511.77	1,113.23	1,915.32	14,434,848.53	1,700,460.85	39.74746409	-80.78638043
6,200.00	31.76	59.83	5,596.79	1,139.68	1,960.83	14,434,874.98	1,700,506.36	39.74753643	-80.78621831
6,300.00	31.76	59.83	5,681.82	1,166.13	2,006.33	14,434,901.43	1,700,551.86	39.74760877	-80.78605619
6,400.00	31.76	59.83	5,766.85	1,192.58	2,051.84	14,434,927.87	1,700,597.37	39.74768111	-80.78589408
6,500.00	31.76	59.83	5,851.88	1,219.02	2,097.34	14,434,954.32	1,700,642.87	39.74775344	-80.78573196
6,600.00	31.76	59.83	5,936.91	1,245.47	2,142.85	14,434,980.77	1,700,688.38	39.74782578	-80.78556984
6,695.58	31.76	59.83	6,018.18	1,270.75	2,186.34	14,435,006.05	1,700,731.87	39.74789492	-80.78541489
<b>Begin 8°/100' build/turn</b>									
6,700.00	31.76	60.51	6,021.93	1,271.91	2,188.36	14,435,007.21	1,700,733.89	39.74789808	-80.78540770
6,800.00	32.64	75.46	6,106.69	1,291.67	2,237.45	14,435,026.97	1,700,782.98	39.74795203	-80.78523288
6,900.00	35.17	89.09	6,189.80	1,298.91	2,292.44	14,435,034.21	1,700,837.97	39.74797154	-80.78503718
7,000.00	39.02	100.75	6,269.65	1,293.48	2,352.26	14,435,028.78	1,700,897.80	39.74795626	-80.78482438
7,100.00	43.84	110.41	6,344.67	1,275.51	2,415.76	14,435,010.80	1,700,961.29	39.74790646	-80.78459865
7,200.00	49.34	118.43	6,413.42	1,245.32	2,481.68	14,434,980.62	1,701,027.21	39.74782313	-80.78436437
7,211.37	50.00	119.25	6,420.78	1,241.14	2,489.27	14,434,976.44	1,701,034.80	39.74781159	-80.78433740
<b>Begin 10°/100' build/turn</b>									
7,300.00	56.68	126.53	6,473.72	1,202.43	2,548.76	14,434,937.73	1,701,094.29	39.74770490	-80.78412608
7,400.00	64.64	133.49	6,522.73	1,146.33	2,615.28	14,434,881.63	1,701,160.81	39.74755038	-80.78388990
7,500.00	72.88	139.56	6,558.96	1,078.69	2,679.22	14,434,813.99	1,701,224.75	39.74736422	-80.78366302
7,600.00	81.29	145.12	6,581.30	1,001.58	2,738.63	14,434,736.88	1,701,284.16	39.74715206	-80.78345231
7,691.93	89.10	150.00	6,589.00	924.35	2,787.70	14,434,659.65	1,701,333.23	39.74693961	-80.78327840
<b>Begin 89.10° lateral</b>									
7,700.00	89.10	150.00	6,589.12	917.36	2,791.74	14,434,652.66	1,701,337.27	39.74692040	-80.78326411
7,800.00	89.10	150.00	6,590.70	830.77	2,841.73	14,434,566.07	1,701,387.26	39.74668226	-80.78308698
7,900.00	89.10	150.00	6,592.27	744.18	2,891.73	14,434,479.48	1,701,437.26	39.74644413	-80.78290986
8,000.00	89.10	150.00	6,593.85	657.59	2,941.73	14,434,392.89	1,701,487.26	39.74620599	-80.78273274
8,100.00	89.10	150.00	6,595.43	571.00	2,991.72	14,434,306.30	1,701,537.25	39.74596786	-80.78255562
8,200.00	89.10	150.00	6,597.00	484.41	3,041.72	14,434,219.71	1,701,587.25	39.74572972	-80.78237850
8,300.00	89.10	150.00	6,598.58	397.82	3,091.71	14,434,133.12	1,701,637.24	39.74549158	-80.78220139
8,400.00	89.10	150.00	6,600.15	311.23	3,141.71	14,434,046.53	1,701,687.24	39.74525345	-80.78202427
8,500.00	89.10	150.00	6,601.73	224.64	3,191.71	14,433,959.94	1,701,737.24	39.74501531	-80.78184716
8,600.00	89.10	150.00	6,603.30	138.04	3,241.70	14,433,873.35	1,701,787.23	39.74477718	-80.78167004
8,700.00	89.10	150.00	6,604.88	51.45	3,291.70	14,433,786.75	1,701,837.23	39.74453904	-80.78149293
8,800.00	89.10	150.00	6,606.46	-35.14	3,341.70	14,433,700.16	1,701,887.22	39.74430090	-80.78131582
8,900.00	89.10	150.00	6,608.03	-121.73	3,391.69	14,433,613.57	1,701,937.22	39.74406276	-80.78113871
9,000.00	89.10	150.00	6,609.61	-208.32	3,441.69	14,433,526.98	1,701,987.22	39.74382463	-80.78096160
9,100.00	89.10	150.00	6,611.18	-294.91	3,491.68	14,433,440.39	1,702,037.21	39.74358649	-80.78078450
9,200.00	89.10	150.00	6,612.76	-381.50	3,541.68	14,433,353.80	1,702,087.21	39.74334835	-80.78060739
9,300.00	89.10	150.00	6,614.33	-468.09	3,591.68	14,433,267.21	1,702,137.20	39.74311021	-80.78043029
9,400.00	89.10	150.00	6,615.91	-554.68	3,641.67	14,433,180.62	1,702,187.20	39.74287207	-80.78025318
9,500.00	89.10	150.00	6,617.49	-641.27	3,691.67	14,433,094.03	1,702,237.20	39.74263393	-80.78007608
9,600.00	89.10	150.00	6,619.06	-727.86	3,741.67	14,433,007.44	1,702,287.19	39.74239579	-80.77989898
9,700.00	89.10	150.00	6,620.64	-814.45	3,791.66	14,432,920.85	1,702,337.19	39.74215765	-80.77972188





Database: DB\_Jul2216dt\_v14  
 Company: Tug Hill Operating LLC  
 Project: Marshall County, West Virginia  
 Site: Accettolo/Evad Pad  
 Well: Evad 06HM (I)  
 Wellbore: Original Hole  
 Design: rev1

Local Co-ordinate Reference:  
 TVD Reference:  
 MD Reference:  
 North Reference:  
 Survey Calculation Method:

Well Evad 06HM (I)  
 RKB=1291+18 @ 1309.00ft (Precision 528)  
 RKB=1291+18 @ 1309.00ft (Precision 528)  
 Grid  
 Minimum Curvature  
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JUL 20 2020

Planned Survey

WV Department of Environmental Protection

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ustft)	Map Easting (ustft)	Latitude	Longitude
9,800.00	89.10	150.00	6,622.21	-901.04	3,841.66	14,432,834.26	1,702,387.19	39.74191951	-80.77954478
9,900.00	89.10	150.00	6,623.79	-987.63	3,891.65	14,432,747.67	1,702,437.18	39.74168137	-80.77936768
10,000.00	89.10	150.00	6,625.36	-1,074.22	3,941.65	14,432,661.08	1,702,487.18	39.74144323	-80.77919059
10,100.00	89.10	150.00	6,626.94	-1,160.81	3,991.65	14,432,574.49	1,702,537.17	39.74120509	-80.77901349
10,200.00	89.10	150.00	6,628.52	-1,247.40	4,041.64	14,432,487.90	1,702,587.17	39.74096695	-80.77883640
10,300.00	89.10	150.00	6,630.09	-1,333.99	4,091.64	14,432,401.31	1,702,637.17	39.74072881	-80.77865930
10,400.00	89.10	150.00	6,631.67	-1,420.58	4,141.63	14,432,314.72	1,702,687.16	39.74049067	-80.77848221
10,500.00	89.10	150.00	6,633.24	-1,507.17	4,191.63	14,432,228.13	1,702,737.16	39.74025253	-80.77830512
10,600.00	89.10	150.00	6,634.82	-1,593.76	4,241.63	14,432,141.54	1,702,787.15	39.74001438	-80.77812803
10,700.00	89.10	150.00	6,636.39	-1,680.35	4,291.62	14,432,054.95	1,702,837.15	39.73977624	-80.77795095
10,800.00	89.10	150.00	6,637.97	-1,766.94	4,341.62	14,431,968.36	1,702,887.15	39.73953810	-80.77777386
10,900.00	89.10	150.00	6,639.55	-1,853.53	4,391.62	14,431,881.77	1,702,937.14	39.73929995	-80.77759677
11,000.00	89.10	150.00	6,641.12	-1,940.13	4,441.61	14,431,795.18	1,702,987.14	39.73906181	-80.77741969
11,100.00	89.10	150.00	6,642.70	-2,026.72	4,491.61	14,431,708.59	1,703,037.13	39.73882367	-80.77724261
11,200.00	89.10	150.00	6,644.27	-2,113.31	4,541.60	14,431,622.00	1,703,087.13	39.73858552	-80.77706553
11,300.00	89.10	150.00	6,645.85	-2,199.90	4,591.60	14,431,535.41	1,703,137.13	39.73834738	-80.77688845
11,400.00	89.10	150.00	6,647.42	-2,286.49	4,641.60	14,431,448.82	1,703,187.12	39.73810923	-80.77671137
11,500.00	89.10	150.00	6,649.00	-2,373.08	4,691.59	14,431,362.23	1,703,237.12	39.73787109	-80.77653429
11,600.00	89.10	150.00	6,650.58	-2,459.67	4,741.59	14,431,275.64	1,703,287.11	39.73763295	-80.77635721
11,700.00	89.10	150.00	6,652.15	-2,546.26	4,791.58	14,431,189.05	1,703,337.11	39.73739480	-80.77618014
11,800.00	89.10	150.00	6,653.73	-2,632.85	4,841.58	14,431,102.46	1,703,387.11	39.73715665	-80.77600306
11,900.00	89.10	150.00	6,655.30	-2,719.44	4,891.58	14,431,015.87	1,703,437.10	39.73691851	-80.77582599
12,000.00	89.10	150.00	6,656.88	-2,806.03	4,941.57	14,430,929.28	1,703,487.10	39.73668036	-80.77564892
12,100.00	89.10	150.00	6,658.45	-2,892.62	4,991.57	14,430,842.69	1,703,537.09	39.73644222	-80.77547185
12,200.00	89.10	150.00	6,660.03	-2,979.21	5,041.57	14,430,756.10	1,703,587.09	39.73620407	-80.77529478
12,300.00	89.10	150.00	6,661.61	-3,065.80	5,091.56	14,430,669.51	1,703,637.09	39.73596592	-80.77511771
12,400.00	89.10	150.00	6,663.18	-3,152.39	5,141.56	14,430,582.92	1,703,687.08	39.73572778	-80.77494064
12,500.00	89.10	150.00	6,664.76	-3,238.98	5,191.55	14,430,496.33	1,703,737.08	39.73548963	-80.77476357
12,600.00	89.10	150.00	6,666.33	-3,325.57	5,241.55	14,430,409.74	1,703,787.08	39.73525148	-80.77458651
12,700.00	89.10	150.00	6,667.91	-3,412.16	5,291.55	14,430,323.15	1,703,837.07	39.73501333	-80.77440945
12,800.00	89.10	150.00	6,669.48	-3,498.75	5,341.54	14,430,236.55	1,703,887.07	39.73477518	-80.77423238
12,900.00	89.10	150.00	6,671.06	-3,585.34	5,391.54	14,430,149.96	1,703,937.06	39.73453704	-80.77405532
13,000.00	89.10	150.00	6,672.64	-3,671.93	5,441.53	14,430,063.37	1,703,987.06	39.73429889	-80.77387826
13,100.00	89.10	150.00	6,674.21	-3,758.52	5,491.53	14,429,976.78	1,704,037.06	39.73406074	-80.77370121
13,200.00	89.10	150.00	6,675.79	-3,845.11	5,541.53	14,429,890.19	1,704,087.05	39.73382259	-80.77352415
13,300.00	89.10	150.00	6,677.36	-3,931.70	5,591.52	14,429,803.60	1,704,137.05	39.73358444	-80.77334709
13,400.00	89.10	150.00	6,678.94	-4,018.30	5,641.52	14,429,717.01	1,704,187.04	39.73334629	-80.77317004
13,500.00	89.10	150.00	6,680.51	-4,104.89	5,691.52	14,429,630.42	1,704,237.04	39.73310814	-80.77299298
13,600.00	89.10	150.00	6,682.09	-4,191.48	5,741.51	14,429,543.83	1,704,287.04	39.73286999	-80.77281593
13,700.00	89.10	150.00	6,683.67	-4,278.07	5,791.51	14,429,457.24	1,704,337.03	39.73263184	-80.77263888
13,800.00	89.10	150.00	6,685.24	-4,364.66	5,841.50	14,429,370.65	1,704,387.03	39.73239369	-80.77246183
13,900.00	89.10	150.00	6,686.82	-4,451.25	5,891.50	14,429,284.06	1,704,437.02	39.73215553	-80.77228478
14,000.00	89.10	150.00	6,688.39	-4,537.84	5,941.50	14,429,197.47	1,704,487.02	39.73191738	-80.77210773
14,100.00	89.10	150.00	6,689.97	-4,624.43	5,991.49	14,429,110.88	1,704,537.02	39.73167923	-80.77193069
14,200.00	89.10	150.00	6,691.54	-4,711.02	6,041.49	14,429,024.29	1,704,587.01	39.73144108	-80.77175364
14,300.00	89.10	150.00	6,693.12	-4,797.61	6,091.49	14,428,937.70	1,704,637.01	39.73120293	-80.77157660
14,400.00	89.10	150.00	6,694.70	-4,884.20	6,141.48	14,428,851.11	1,704,687.00	39.73096477	-80.77139955
14,500.00	89.10	150.00	6,696.27	-4,970.79	6,191.48	14,428,764.52	1,704,737.00	39.73072662	-80.77122251
14,600.00	89.10	150.00	6,697.85	-5,057.38	6,241.47	14,428,677.93	1,704,787.00	39.73048847	-80.77104547
14,700.00	89.10	150.00	6,699.42	-5,143.97	6,291.47	14,428,591.34	1,704,836.99	39.73025031	-80.77086843
14,800.00	89.10	150.00	6,701.00	-5,230.56	6,341.47	14,428,504.75	1,704,886.99	39.73001216	-80.77069140
14,900.00	89.10	150.00	6,702.57	-5,317.15	6,391.46	14,428,418.16	1,704,936.98	39.72977401	-80.77051436
15,000.00	89.10	150.00	6,704.15	-5,403.74	6,441.46	14,428,331.57	1,704,986.98	39.72953585	-80.77033732
15,100.00	89.10	150.00	6,705.73	-5,490.33	6,491.45	14,428,244.98	1,705,036.98	39.72929770	-80.77016029
15,200.00	89.10	150.00	6,707.30	-5,576.92	6,541.45	14,428,158.39	1,705,086.97	39.72905954	-80.76998326





Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Evad 06HM (I)
Company:	Tug Hill Operating LLC	TVD Reference:	RKB=1291+18 @ 1309.00ft (Precision 528)
Project:	Marshall County, West Virginia	MD Reference:	RKB=1291+18 @ 1309.00ft (Precision 528)
Site:	Accetolo/Evad Pad	North Reference:	Grid
Well:	Evad 06HM (I)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,300.00	89.10	150.00	6,708.88	-5,663.51	6,591.45	14,428,071.80	1,705,136.97	39.72882139	-80.76980623
15,400.00	89.10	150.00	6,710.45	-5,750.10	6,641.44	14,427,985.21	1,705,186.97	39.72858323	-80.76962919
15,500.00	89.10	150.00	6,712.03	-5,836.69	6,691.44	14,427,898.62	1,705,236.96	39.72834507	-80.76945217
15,600.00	89.10	150.00	6,713.60	-5,923.28	6,741.44	14,427,812.03	1,705,286.96	39.72810692	-80.76927514
15,700.00	89.10	150.00	6,715.18	-6,009.87	6,791.43	14,427,725.44	1,705,336.95	39.72786876	-80.76909811
15,800.00	89.10	150.00	6,716.76	-6,096.47	6,841.43	14,427,638.85	1,705,386.95	39.72763061	-80.76892108
15,900.00	89.10	150.00	6,718.33	-6,183.06	6,891.42	14,427,552.26	1,705,436.95	39.72739245	-80.76874406
16,000.00	89.10	150.00	6,719.91	-6,269.65	6,941.42	14,427,465.67	1,705,486.94	39.72715429	-80.76856704
16,100.00	89.10	150.00	6,721.48	-6,356.24	6,991.42	14,427,379.08	1,705,536.94	39.72691613	-80.76839001
16,200.00	89.10	150.00	6,723.06	-6,442.83	7,041.41	14,427,292.49	1,705,586.93	39.72667798	-80.76821299
16,300.00	89.10	150.00	6,724.63	-6,529.42	7,091.41	14,427,205.90	1,705,636.93	39.72643982	-80.76803597
16,400.00	89.10	150.00	6,726.21	-6,616.01	7,141.40	14,427,119.31	1,705,686.93	39.72620166	-80.76785896
16,500.00	89.10	150.00	6,727.79	-6,702.60	7,191.40	14,427,032.72	1,705,736.92	39.72596350	-80.76768194
16,600.00	89.10	150.00	6,729.36	-6,789.19	7,241.40	14,426,946.13	1,705,786.92	39.72572534	-80.76750492
16,640.49	89.10	150.00	6,730.00	-6,824.25	7,261.64	14,426,911.07	1,705,807.16	39.72562891	-80.76743325

**PBHL/TD 16640.49 MD/6730.00 TVD**

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Evad-6HM LP r1	0.00	0.00	6,589.00	924.34	2,787.66	14,434,659.64	1,701,333.19	39.74693960	-80.78327857
- hit/miss target									
- Shape									
- plan misses target center by 0.04ft at 7691.91ft MD (6588.99 TVD, 924.36 N, 2787.69 E)									
- Point									
Evad-6HM BHL r1	0.00	0.00	6,730.00	-6,824.25	7,261.64	14,426,911.06	1,705,807.16	39.72562890	-80.76743324
- plan hits target center									
- Point									

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,118.00	1,118.00	0.00	0.00	KOP Begin 2°/100' build
2,705.90	2,625.83	215.54	370.83	Begin 31.76° tangent
6,695.58	6,018.18	1,270.75	2,186.34	Begin 8°/100' build/turn
7,211.37	6,420.78	1,241.14	2,489.27	Begin 10°/100' build/turn
7,691.93	6,589.00	924.35	2,787.70	Begin 89.10° lateral
16,640.49	6,730.00	-6,824.25	7,261.64	PBHL/TD 16640.49 MD/6730.00 TVD

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**JUL 20 2020**  
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 Environmental Protection