

<b>Database:</b>	DB_Jul2216dt_v14	<b>Local Co-ordinate Reference:</b>	Well Evad 04HM (F)
<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 04HM (F)	<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>	0.132 °

<b>Well</b>	Evad 04HM (F)					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	14,433,716.72 usft	<b>Latitude:</b>	39.74436810
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	1,698,555.32 usft	<b>Longitude:</b>	-80.79316901
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	1,291.00 ft

<b>Wellbore</b>	Original Hole				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	4/18/2019	-8.679	66.781	51,949.50510584

<b>Design</b>	rev1				
<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>	
	0.00	0.00	0.00	141.72	

<b>Plan Survey Tool Program</b>	<b>Date</b>	4/16/2019			
<b>Depth From (ft)</b>	<b>Depth To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	16,180.16 rev1 (Original Hole)	MWD	MWD - Standard	

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<b>Plan Sections</b>											
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	<b>TFO (°)</b>	<b>Target</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000		
1,418.00	0.00	0.00	1,418.00	0.00	0.00	0.00	0.00	0.00	0.000		
1,668.00	5.00	52.60	1,667.68	6.62	8.66	2.00	2.00	0.00	52.600		
3,123.86	5.00	52.60	3,118.00	83.69	109.46	0.00	0.00	0.00	0.000		
3,665.77	21.25	49.72	3,643.99	162.05	203.77	3.00	3.00	-0.53	-3.727		
6,090.69	21.25	49.72	5,904.06	730.22	874.27	0.00	0.00	0.00	0.000		
6,720.09	50.00	131.65	6,434.21	637.71	1,160.05	8.00	4.57	13.02	99.925		
7,145.28	89.10	150.01	6,581.00	331.17	1,399.06	10.00	9.20	4.32	27.778		
16,180.17	89.10	150.01	6,723.00	-7,493.18	5,914.43	0.00	0.00	0.00	0.000	Evad-4HM BHL r1	

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<b>Site:</b>	Accettolo/Evad Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	Evad 04HM (F)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev1		

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Planned Survey JUL 20 2020

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	WV Department of Environmental Protection Latitude	WV Department of Environmental Protection Longitude
0.00	0.00	0.00	0.00	0.00	0.00	14,433,716.72	1,698,555.32	39.74436810	-80.79316901
100.00	0.00	0.00	100.00	0.00	0.00	14,433,716.72	1,698,555.32	39.74436810	-80.79316901
200.00	0.00	0.00	200.00	0.00	0.00	14,433,716.72	1,698,555.32	39.74436810	-80.79316901
300.00	0.00	0.00	300.00	0.00	0.00	14,433,716.72	1,698,555.32	39.74436810	-80.79316901
400.00	0.00	0.00	400.00	0.00	0.00	14,433,716.72	1,698,555.32	39.74436810	-80.79316901
500.00	0.00	0.00	500.00	0.00	0.00	14,433,716.72	1,698,555.32	39.74436810	-80.79316901
600.00	0.00	0.00	600.00	0.00	0.00	14,433,716.72	1,698,555.32	39.74436810	-80.79316901
700.00	0.00	0.00	700.00	0.00	0.00	14,433,716.72	1,698,555.32	39.74436810	-80.79316901
800.00	0.00	0.00	800.00	0.00	0.00	14,433,716.72	1,698,555.32	39.74436810	-80.79316901
900.00	0.00	0.00	900.00	0.00	0.00	14,433,716.72	1,698,555.32	39.74436810	-80.79316901
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,433,716.72	1,698,555.32	39.74436810	-80.79316901
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,433,716.72	1,698,555.32	39.74436810	-80.79316901
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,433,716.72	1,698,555.32	39.74436810	-80.79316901
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,433,716.72	1,698,555.32	39.74436810	-80.79316901
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,433,716.72	1,698,555.32	39.74436810	-80.79316901
1,418.00	0.00	0.00	1,418.00	0.00	0.00	14,433,716.72	1,698,555.32	39.74436810	-80.79316901
<b>KOP Begin 2°/100' build</b>									
1,500.00	1.64	52.60	1,499.99	0.71	0.93	14,433,717.44	1,698,556.25	39.74437005	-80.79316569
1,600.00	3.64	52.60	1,599.88	3.51	4.59	14,433,720.23	1,698,559.91	39.74437771	-80.79315265
1,668.00	5.00	52.60	1,667.68	6.62	8.66	14,433,723.34	1,698,563.98	39.74438623	-80.79313815
<b>Begin 5.00° tangent</b>									
1,700.00	5.00	52.60	1,699.56	8.32	10.88	14,433,725.04	1,698,566.19	39.74439087	-80.79313025
1,800.00	5.00	52.60	1,799.18	13.61	17.80	14,433,730.33	1,698,573.12	39.74440536	-80.79310558
1,900.00	5.00	52.60	1,898.80	18.90	24.72	14,433,735.63	1,698,580.04	39.74441986	-80.79308090
2,000.00	5.00	52.60	1,998.42	24.20	31.65	14,433,740.92	1,698,586.97	39.74443435	-80.79305623
2,100.00	5.00	52.60	2,098.04	29.49	38.57	14,433,746.21	1,698,593.89	39.74444884	-80.79303155
2,200.00	5.00	52.60	2,197.66	34.78	45.49	14,433,751.51	1,698,600.81	39.74446334	-80.79300688
2,300.00	5.00	52.60	2,297.28	40.08	52.42	14,433,756.80	1,698,607.74	39.74447783	-80.79298220
2,400.00	5.00	52.60	2,396.90	45.37	59.34	14,433,762.09	1,698,614.66	39.74449233	-80.79295753
2,500.00	5.00	52.60	2,496.52	50.66	66.27	14,433,767.39	1,698,621.58	39.74450682	-80.79293285
2,600.00	5.00	52.60	2,596.14	55.96	73.19	14,433,772.68	1,698,628.51	39.74452131	-80.79290818
2,700.00	5.00	52.60	2,695.76	61.25	80.11	14,433,777.98	1,698,635.43	39.74453581	-80.79288350
2,800.00	5.00	52.60	2,795.38	66.55	87.04	14,433,783.27	1,698,642.36	39.74455030	-80.79285883
2,900.00	5.00	52.60	2,894.99	71.84	93.96	14,433,788.56	1,698,649.28	39.74456480	-80.79283415
3,000.00	5.00	52.60	2,994.61	77.13	100.88	14,433,793.86	1,698,656.20	39.74457929	-80.79280948
3,100.00	5.00	52.60	3,094.23	82.43	107.81	14,433,799.15	1,698,663.13	39.74459378	-80.79278480
3,123.86	5.00	52.60	3,118.00	83.69	109.46	14,433,800.41	1,698,664.78	39.74459724	-80.79277891
<b>Begin 3°/100' build</b>									
3,200.00	7.28	51.43	3,193.70	88.71	115.87	14,433,805.44	1,698,671.19	39.74461100	-80.79275607
3,300.00	10.28	50.68	3,292.52	98.32	127.73	14,433,815.04	1,698,683.05	39.74463731	-80.79271380
3,400.00	13.28	50.26	3,390.40	111.32	143.46	14,433,828.04	1,698,698.78	39.74467290	-80.79265772
3,500.00	16.28	50.00	3,487.08	127.67	163.04	14,433,844.39	1,698,718.35	39.74471769	-80.79258796
3,600.00	19.28	49.82	3,582.30	147.33	186.39	14,433,864.06	1,698,741.70	39.74477154	-80.79250473
3,665.77	21.25	49.72	3,643.99	162.05	203.77	14,433,878.77	1,698,759.09	39.74481183	-80.79244274
<b>Begin 21.25° tangent</b>									
3,700.00	21.25	49.72	3,675.90	170.07	213.24	14,433,886.79	1,698,768.56	39.74483380	-80.79240901
3,800.00	21.25	49.72	3,769.10	193.50	240.89	14,433,910.22	1,698,796.21	39.74489797	-80.79231045
3,900.00	21.25	49.72	3,862.30	216.93	268.54	14,433,933.65	1,698,823.86	39.74496214	-80.79221189
4,000.00	21.25	49.72	3,955.50	240.36	296.19	14,433,957.08	1,698,851.51	39.74502631	-80.79211333
4,100.00	21.25	49.72	4,048.70	263.79	323.84	14,433,980.51	1,698,879.16	39.74509048	-80.79201477
4,200.00	21.25	49.72	4,141.90	287.22	351.49	14,434,003.94	1,698,906.81	39.74515465	-80.79191621
4,300.00	21.25	49.72	4,235.10	310.65	379.14	14,434,027.37	1,698,934.46	39.74521882	-80.79181765
4,400.00	21.25	49.72	4,328.31	334.08	406.79	14,434,050.80	1,698,962.11	39.74528299	-80.79171909
4,500.00	21.25	49.72	4,421.51	357.51	434.44	14,434,074.23	1,698,989.76	39.74534716	-80.79162053

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<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev1		

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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	
4,600.00	21.25	49.72	4,514.71	380.94	462.09	14,434,097.66	1,699,017.41	39.74541133	-80.79152197	
4,700.00	21.25	49.72	4,607.91	404.37	489.74	14,434,121.09	1,699,045.06	39.74547550	-80.79142340	
4,800.00	21.25	49.72	4,701.11	427.80	517.39	14,434,144.52	1,699,072.71	39.74553968	-80.79132484	
4,900.00	21.25	49.72	4,794.31	451.23	545.04	14,434,167.95	1,699,100.36	39.74560385	-80.79122628	
5,000.00	21.25	49.72	4,887.51	474.66	572.69	14,434,191.39	1,699,128.01	39.74566802	-80.79112772	
5,100.00	21.25	49.72	4,980.72	498.09	600.34	14,434,214.82	1,699,155.66	39.74573219	-80.79102916	
5,200.00	21.25	49.72	5,073.92	521.52	627.99	14,434,238.25	1,699,183.31	39.74579636	-80.79093060	
5,300.00	21.25	49.72	5,167.12	544.95	655.64	14,434,261.68	1,699,210.96	39.74586053	-80.79083203	
5,400.00	21.25	49.72	5,260.32	568.38	683.29	14,434,285.11	1,699,238.61	39.74592469	-80.79073347	
5,500.00	21.25	49.72	5,353.52	591.82	710.94	14,434,308.54	1,699,266.26	39.74598886	-80.79063491	
5,600.00	21.25	49.72	5,446.72	615.25	738.59	14,434,331.97	1,699,293.91	39.74605303	-80.79053635	
5,700.00	21.25	49.72	5,539.92	638.68	766.24	14,434,355.40	1,699,321.56	39.74611720	-80.79043778	
5,800.00	21.25	49.72	5,633.12	662.11	793.89	14,434,378.83	1,699,349.21	39.74618137	-80.79033922	
5,900.00	21.25	49.72	5,726.33	685.54	821.54	14,434,402.26	1,699,376.86	39.74624554	-80.79024066	
6,000.00	21.25	49.72	5,819.53	708.97	849.19	14,434,425.69	1,699,404.51	39.74630971	-80.79014209	
6,090.69	21.25	49.72	5,904.05	730.22	874.27	14,434,446.94	1,699,429.58	39.74636791	-80.79005271	
<b>Begin 8°/100' build/turn</b>										
6,100.00	21.13	51.76	5,912.73	732.35	876.87	14,434,449.07	1,699,432.19	39.74637374	-80.79004342	
6,200.00	21.46	73.89	6,006.05	748.61	908.65	14,434,465.33	1,699,463.97	39.74641819	-80.78993021	
6,300.00	24.43	93.06	6,098.26	752.59	946.94	14,434,469.31	1,699,502.25	39.74642888	-80.78979398	
6,400.00	29.24	107.30	6,187.56	744.21	990.97	14,434,460.93	1,699,546.29	39.74640559	-80.78963739	
6,500.00	35.15	117.47	6,272.21	723.64	1,039.91	14,434,440.36	1,699,595.23	39.74634877	-80.78946347	
6,600.00	41.68	124.93	6,350.57	691.27	1,092.79	14,434,407.99	1,699,648.10	39.74625953	-80.78927561	
6,700.00	48.58	130.65	6,421.11	647.73	1,148.58	14,434,364.46	1,699,703.90	39.74613961	-80.78907748	
6,720.09	50.00	131.65	6,434.21	637.71	1,160.05	14,434,354.43	1,699,715.36	39.74611201	-80.78903678	
<b>Begin 10°/100' build/turn</b>										
6,800.00	57.16	136.07	6,481.64	593.12	1,206.28	14,434,309.84	1,699,761.60	39.74598926	-80.78887267	
6,900.00	66.30	140.69	6,528.97	527.27	1,264.57	14,434,244.00	1,699,819.89	39.74580804	-80.78866584	
7,000.00	75.55	144.70	6,561.63	452.14	1,321.70	14,434,168.86	1,699,877.01	39.74560133	-80.78846326	
7,100.00	84.87	148.39	6,578.62	370.00	1,375.91	14,434,086.72	1,699,931.23	39.74537541	-80.78827107	
7,145.28	89.10	150.01	6,581.00	331.17	1,399.06	14,434,047.89	1,699,954.37	39.74526862	-80.78818905	
<b>Begin 89.10° lateral</b>										
7,200.00	89.10	150.01	6,581.86	283.78	1,426.41	14,434,000.51	1,699,981.72	39.74513830	-80.78809216	
7,300.00	89.10	150.01	6,583.43	197.18	1,476.38	14,433,913.90	1,700,031.70	39.74490014	-80.78791509	
7,400.00	89.10	150.01	6,585.01	110.58	1,526.36	14,433,827.30	1,700,081.67	39.74466198	-80.78773803	
7,500.00	89.10	150.01	6,586.58	23.98	1,576.34	14,433,740.70	1,700,131.65	39.74442382	-80.78756096	
7,600.00	89.10	150.01	6,588.15	-62.62	1,626.31	14,433,654.10	1,700,181.63	39.74418567	-80.78738390	
7,700.00	89.10	150.01	6,589.72	-149.23	1,676.29	14,433,567.50	1,700,231.61	39.74394751	-80.78720684	
7,800.00	89.10	150.01	6,591.29	-235.83	1,726.27	14,433,480.90	1,700,281.58	39.74370935	-80.78702978	
7,900.00	89.10	150.01	6,592.86	-322.43	1,776.25	14,433,394.30	1,700,331.56	39.74347119	-80.78685272	
8,000.00	89.10	150.01	6,594.44	-409.03	1,826.22	14,433,307.69	1,700,381.54	39.74323303	-80.78667566	
8,100.00	89.10	150.01	6,596.01	-495.63	1,876.20	14,433,221.09	1,700,431.51	39.74299487	-80.78649860	
8,200.00	89.10	150.01	6,597.58	-582.23	1,926.18	14,433,134.49	1,700,481.49	39.74275671	-80.78632155	
8,300.00	89.10	150.01	6,599.15	-668.83	1,976.15	14,433,047.89	1,700,531.47	39.74251855	-80.78614449	
8,400.00	89.10	150.01	6,600.72	-755.44	2,026.13	14,432,961.29	1,700,581.44	39.74228039	-80.78596744	
8,500.00	89.10	150.01	6,602.29	-842.04	2,076.11	14,432,874.69	1,700,631.42	39.74204223	-80.78579038	
8,600.00	89.10	150.01	6,603.87	-928.64	2,126.08	14,432,788.09	1,700,681.40	39.74180407	-80.78561333	
8,700.00	89.10	150.01	6,605.44	-1,015.24	2,176.06	14,432,701.49	1,700,731.38	39.74156591	-80.78543628	
8,800.00	89.10	150.01	6,607.01	-1,101.84	2,226.04	14,432,614.88	1,700,781.35	39.74132774	-80.78525923	
8,900.00	89.10	150.01	6,608.58	-1,188.44	2,276.02	14,432,528.28	1,700,831.33	39.74108958	-80.78508219	
9,000.00	89.10	150.01	6,610.15	-1,275.04	2,325.99	14,432,441.68	1,700,881.31	39.74085142	-80.78490514	
9,100.00	89.10	150.01	6,611.72	-1,361.65	2,375.97	14,432,355.08	1,700,931.28	39.74061326	-80.78472809	
9,200.00	89.10	150.01	6,613.30	-1,448.25	2,425.95	14,432,268.48	1,700,981.26	39.74037509	-80.78455105	
9,300.00	89.10	150.01	6,614.87	-1,534.85	2,475.92	14,432,181.88	1,701,031.24	39.74013693	-80.78437401	

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Evad 04HM (F)
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:	Accettolo/Evad Pad	North Reference:	Grid Office of Oil and Gas
Well:	Evad 04HM (F)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

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
9,400.00	89.10	150.01	6,616.44	-1,621.45	2,525.90	14,432,095.28	1,701,081.21	39.73989877	-80.78419697
9,500.00	89.10	150.01	6,618.01	-1,708.05	2,575.88	14,432,008.67	1,701,131.19	39.73966060	-80.78401993
9,600.00	89.10	150.01	6,619.58	-1,794.65	2,625.86	14,431,922.07	1,701,181.17	39.73942244	-80.78384289
9,700.00	89.10	150.01	6,621.15	-1,881.26	2,675.83	14,431,835.47	1,701,231.15	39.73918428	-80.78366585
9,800.00	89.10	150.01	6,622.73	-1,967.86	2,725.81	14,431,748.87	1,701,281.12	39.73894611	-80.78348881
9,900.00	89.10	150.01	6,624.30	-2,054.46	2,775.79	14,431,662.27	1,701,331.10	39.73870795	-80.78331178
10,000.00	89.10	150.01	6,625.87	-2,141.06	2,825.76	14,431,575.67	1,701,381.08	39.73846978	-80.78313474
10,100.00	89.10	150.01	6,627.44	-2,227.66	2,875.74	14,431,489.07	1,701,431.05	39.73823162	-80.78295771
10,200.00	89.10	150.01	6,629.01	-2,314.26	2,925.72	14,431,402.47	1,701,481.03	39.73799345	-80.78278068
10,300.00	89.10	150.01	6,630.58	-2,400.86	2,975.69	14,431,315.86	1,701,531.01	39.73775528	-80.78260365
10,400.00	89.10	150.01	6,632.16	-2,487.47	3,025.67	14,431,229.26	1,701,580.98	39.73751712	-80.78242662
10,500.00	89.10	150.01	6,633.73	-2,574.07	3,075.65	14,431,142.66	1,701,630.96	39.73727895	-80.78224959
10,600.00	89.10	150.01	6,635.30	-2,660.67	3,125.63	14,431,056.06	1,701,680.94	39.73704078	-80.78207256
10,700.00	89.10	150.01	6,636.87	-2,747.27	3,175.60	14,430,969.46	1,701,730.92	39.73680262	-80.78189554
10,800.00	89.10	150.01	6,638.44	-2,833.87	3,225.58	14,430,882.86	1,701,780.89	39.73656445	-80.78171851
10,900.00	89.10	150.01	6,640.01	-2,920.47	3,275.56	14,430,796.26	1,701,830.87	39.73632628	-80.78154149
11,000.00	89.10	150.01	6,641.59	-3,007.08	3,325.53	14,430,709.65	1,701,880.85	39.73608812	-80.78136447
11,100.00	89.10	150.01	6,643.16	-3,093.68	3,375.51	14,430,623.05	1,701,930.82	39.73584995	-80.78118745
11,200.00	89.10	150.01	6,644.73	-3,180.28	3,425.49	14,430,536.45	1,701,980.80	39.73561178	-80.78101043
11,300.00	89.10	150.01	6,646.30	-3,266.88	3,475.47	14,430,449.85	1,702,030.78	39.73537361	-80.78083341
11,400.00	89.10	150.01	6,647.87	-3,353.48	3,525.44	14,430,363.25	1,702,080.75	39.73513544	-80.78065639
11,500.00	89.10	150.01	6,649.44	-3,440.08	3,575.42	14,430,276.65	1,702,130.73	39.73489727	-80.78047937
11,600.00	89.10	150.01	6,651.02	-3,526.68	3,625.40	14,430,190.05	1,702,180.71	39.73465910	-80.78030236
11,700.00	89.10	150.01	6,652.59	-3,613.29	3,675.37	14,430,103.45	1,702,230.68	39.73442093	-80.78012535
11,800.00	89.10	150.01	6,654.16	-3,699.89	3,725.35	14,430,016.84	1,702,280.66	39.73418276	-80.77994833
11,900.00	89.10	150.01	6,655.73	-3,786.49	3,775.33	14,429,930.24	1,702,330.64	39.73394459	-80.77977132
12,000.00	89.10	150.01	6,657.30	-3,873.09	3,825.31	14,429,843.64	1,702,380.62	39.73370642	-80.77959431
12,100.00	89.10	150.01	6,658.87	-3,959.69	3,875.28	14,429,757.04	1,702,430.59	39.73346825	-80.77941730
12,200.00	89.10	150.01	6,660.45	-4,046.29	3,925.26	14,429,670.44	1,702,480.57	39.73323008	-80.77924030
12,300.00	89.10	150.01	6,662.02	-4,132.89	3,975.24	14,429,583.84	1,702,530.55	39.73299191	-80.77906329
12,400.00	89.10	150.01	6,663.59	-4,219.50	4,025.21	14,429,497.24	1,702,580.52	39.73275374	-80.77888628
12,500.00	89.10	150.01	6,665.16	-4,306.10	4,075.19	14,429,410.63	1,702,630.50	39.73251557	-80.77870928
12,600.00	89.10	150.01	6,666.73	-4,392.70	4,125.17	14,429,324.03	1,702,680.48	39.73227739	-80.77853228
12,700.00	89.10	150.01	6,668.30	-4,479.30	4,175.14	14,429,237.43	1,702,730.45	39.73203922	-80.77835528
12,800.00	89.10	150.01	6,669.88	-4,565.90	4,225.12	14,429,150.83	1,702,780.43	39.73180105	-80.77817828
12,900.00	89.10	150.01	6,671.45	-4,652.50	4,275.10	14,429,064.23	1,702,830.41	39.73156287	-80.77800128
13,000.00	89.10	150.01	6,673.02	-4,739.11	4,325.08	14,428,977.63	1,702,880.39	39.73132470	-80.77782428
13,100.00	89.10	150.01	6,674.59	-4,825.71	4,375.05	14,428,891.03	1,702,930.36	39.73108653	-80.77764728
13,200.00	89.10	150.01	6,676.16	-4,912.31	4,425.03	14,428,804.43	1,702,980.34	39.73084835	-80.77747029
13,300.00	89.10	150.01	6,677.73	-4,998.91	4,475.01	14,428,717.82	1,703,030.32	39.73061018	-80.77729329
13,400.00	89.10	150.01	6,679.31	-5,085.51	4,524.98	14,428,631.22	1,703,080.29	39.73037201	-80.77711630
13,500.00	89.10	150.01	6,680.88	-5,172.11	4,574.96	14,428,544.62	1,703,130.27	39.73013383	-80.77693931
13,600.00	89.10	150.01	6,682.45	-5,258.71	4,624.94	14,428,458.02	1,703,180.25	39.72989566	-80.77676232
13,700.00	89.10	150.01	6,684.02	-5,345.32	4,674.92	14,428,371.42	1,703,230.22	39.72965748	-80.77658533
13,800.00	89.10	150.01	6,685.59	-5,431.92	4,724.89	14,428,284.82	1,703,280.20	39.72941930	-80.77640834
13,900.00	89.10	150.01	6,687.16	-5,518.52	4,774.87	14,428,198.22	1,703,330.18	39.72918113	-80.77623135
14,000.00	89.10	150.01	6,688.74	-5,605.12	4,824.85	14,428,111.61	1,703,380.16	39.72894295	-80.77605437
14,100.00	89.10	150.01	6,690.31	-5,691.72	4,874.82	14,428,025.01	1,703,430.13	39.72870478	-80.77587738
14,200.00	89.10	150.01	6,691.88	-5,778.32	4,924.80	14,427,938.41	1,703,480.11	39.72846660	-80.77570040
14,300.00	89.10	150.01	6,693.45	-5,864.93	4,974.78	14,427,851.81	1,703,530.09	39.72822842	-80.77552342
14,400.00	89.10	150.01	6,695.02	-5,951.53	5,024.76	14,427,765.21	1,703,580.06	39.72799025	-80.77534644
14,500.00	89.10	150.01	6,696.59	-6,038.13	5,074.73	14,427,678.61	1,703,630.04	39.72775207	-80.77516946
14,600.00	89.10	150.01	6,698.17	-6,124.73	5,124.71	14,427,592.01	1,703,680.02	39.72751389	-80.77499248
14,700.00	89.10	150.01	6,699.74	-6,211.33	5,174.69	14,427,505.40	1,703,729.99	39.72727571	-80.77481550
14,800.00	89.10	150.01	6,701.31	-6,297.93	5,224.66	14,427,418.80	1,703,779.97	39.72703753	-80.77463853

<b>Database:</b>	DB_Jul2216dt_v14	<b>Local Co-ordinate Reference:</b>	Well Evad 04HM (F)
<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 04HM (F)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	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
14,900.00	89.10	150.01	6,702.88	-6,384.53	5,274.64	14,427,332.20	1,703,829.95	39.72679936	-80.77446155
15,000.00	89.10	150.01	6,704.45	-6,471.14	5,324.62	14,427,245.60	1,703,879.93	39.72656118	-80.77428458
15,100.00	89.10	150.01	6,706.02	-6,557.74	5,374.59	14,427,159.00	1,703,929.90	39.72632300	-80.77410761
15,200.00	89.10	150.01	6,707.60	-6,644.34	5,424.57	14,427,072.40	1,703,979.88	39.72608482	-80.77393064
15,300.00	89.10	150.01	6,709.17	-6,730.94	5,474.55	14,426,985.80	1,704,029.86	39.72584664	-80.77375367
15,400.00	89.10	150.01	6,710.74	-6,817.54	5,524.53	14,426,899.20	1,704,079.83	39.72560846	-80.77357670
15,500.00	89.10	150.01	6,712.31	-6,904.14	5,574.50	14,426,812.59	1,704,129.81	39.72537028	-80.77339973
15,600.00	89.10	150.01	6,713.88	-6,990.74	5,624.48	14,426,725.99	1,704,179.79	39.72513210	-80.77322276
15,700.00	89.10	150.01	6,715.45	-7,077.35	5,674.46	14,426,639.39	1,704,229.76	39.72489392	-80.77304580
15,800.00	89.10	150.01	6,717.03	-7,163.95	5,724.43	14,426,552.79	1,704,279.74	39.72465574	-80.77286883
15,900.00	89.10	150.01	6,718.60	-7,250.55	5,774.41	14,426,466.19	1,704,329.72	39.72441755	-80.77269187
16,000.00	89.10	150.01	6,720.17	-7,337.15	5,824.39	14,426,379.59	1,704,379.69	39.72417937	-80.77251491
16,100.00	89.10	150.01	6,721.74	-7,423.75	5,874.37	14,426,292.99	1,704,429.67	39.72394119	-80.77233795
16,180.17	89.10	150.01	6,723.00	-7,493.18	5,914.43	14,426,223.56	1,704,469.74	39.72375025	-80.77219609

PBHL/TD 16180.17 MD/6723.00 TVD

**Design Targets**

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Evad-4HM LP r1 - hit/miss target - Shape - Point	0.00	0.00	6,581.00	331.16	1,399.02	14,434,047.89	1,699,954.33	39.74526860	-80.78818920
- plan misses target center by 0.04ft at 7145.26ft MD (6581.00 TVD, 331.18 N, 1399.05 E)									
Evad-4HM BHL r1 - plan hits target center - Point	0.00	0.00	6,723.00	-7,493.18	5,914.43	14,426,223.56	1,704,469.74	39.72375025	-80.77219609

**Plan Annotations**

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,418.00	1,418.00	0.00	0.00	KOP Begin 2"/100' build
1,668.00	1,667.68	6.62	8.66	Begin 5.00° tangent
3,123.86	3,118.00	83.69	109.46	Begin 3"/100' build
3,665.77	3,643.99	162.05	203.77	Begin 21.25° tangent
6,090.69	5,904.05	730.22	874.27	Begin 8"/100' build/turn
6,720.09	6,434.21	637.71	1,160.05	Begin 10"/100' build/turn
7,145.28	6,581.00	331.17	1,399.06	Begin 89.10° lateral
16,180.17	6,723.00	-7,493.18	5,914.43	PBHL/TD 16180.17 MD/6723.00 TVD

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