

<b>Company:</b> Tug Hill Operating	<b>Local Co-ordinate Reference:</b> Well Ten High 1S-08HM (G)
<b>Project:</b> Marshall County West Virginia.	<b>TVD Reference:</b> RKB=1310+33 @ 1343.00usft (Nabors X08)
<b>Site:</b> Ten High	<b>MD Reference:</b> RKB=1310+33 @ 1343.00usft (Nabors X08)
<b>Well:</b> Ten High 1S-08HM (G)	<b>North Reference:</b> Grid
<b>Wellbore:</b> Original Hole	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> Surveys Original Hole	<b>Database:</b> DB_Jul2216dt_v14

<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 (8-10 to 78 W)		

<b>Site</b> Ten High	<b>Site Position:</b>	<b>Northing:</b> 14,456,545.60 usft	<b>Latitude:</b> 39.80680885
<b>From:</b> Lat/Long	<b>Easting:</b> 1,730,001.41 usft	<b>Longitude:</b> -80.68101011	
<b>Position Uncertainty:</b> 0.00 usft	<b>Slot Radius:</b> 13-3/16 "	<b>Grid Convergence:</b> 0.20 °	

<b>Well</b> Ten High 1S-08HM (G)	<b>Well Position</b> +N/-S 0.00 usft	<b>Northing:</b> 14,456,528.97 usft	<b>Latitude:</b> 39.80676247
	+E/-W 0.00 usft	<b>Easting:</b> 1,730,074.52 usft	<b>Longitude:</b> -80.68075001
<b>Position Uncertainty</b> 0.00 usft	<b>Wellhead Elevation:</b> 0.00 usft	<b>Ground Level:</b> 1,310.00 usft	

<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>
		2015	1/18/2019	-8.76	66.84	51,996.87196214

<b>Design</b> Surveys Original Hole	<b>Audit Notes:</b>	<b>Version:</b> 1.0	<b>Phase:</b> ACTUAL	<b>Tie On Depth:</b> 0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	144.69

<b>Survey Program</b>	<b>Date</b> 2/5/2019	<b>RECEIVED</b> Office of Oil and Gas <b>JUN 10 2020</b> WV Department of Environmental Protection		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
187.00	1,110.00	WD surf (Original Hole)	MWD	MWD - Standard
1,110.00	17,506.00	WD (Original Hole)	MWD	MWD - Standard
17,561.00	17,561.00	Projection (Original Hole)	MWD	MWD - Standard

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	14,456,528.97	1,730,074.52	39.80676247	-80.68075001
187.00	0.56	27.73	187.00	0.82	0.41	14,456,529.79	1,730,074.93	39.80676471	-80.68074854
<b>MWD surveys</b>									
217.00	0.52	27.73	217.00	1.06	0.55	14,456,530.03	1,730,075.07	39.80676538	-80.68074803
247.00	0.44	27.16	246.99	1.28	0.67	14,456,530.25	1,730,075.20	39.80676598	-80.68074760
277.00	0.51	27.44	276.99	1.50	0.78	14,456,530.48	1,730,075.31	39.80676659	-80.68074720
307.00	0.34	27.82	306.99	1.70	0.89	14,456,530.67	1,730,075.41	39.80676712	-80.68074681
337.00	0.28	27.62	336.99	1.82	0.99	14,456,530.79	1,730,075.51	39.80676746	-80.68074646
367.00	0.30	27.62	366.99	1.93	1.10	14,456,530.90	1,730,075.62	39.80676775	-80.68074608
399.00	0.22	27.92	398.99	2.04	1.19	14,456,531.01	1,730,075.71	39.80676806	-80.68074575

<b>Company:</b>	Tug Hill Operati	C	<b>Local Co-ordinate Reference:</b>	Well Ten High 1S-08HM (G)
<b>Project:</b>	Marshall County	st Virginia.	<b>TVD Reference:</b>	RKB=1310+33 @ 1343.00usft (Nabors X08)
<b>Site:</b>	Ten High		<b>MD Reference:</b>	RKB=1310+33 @ 1343.00usft (Nabors X08)
<b>Well:</b>	Ten High 1S-08	(3)	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Hole		<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys Original		<b>Database:</b>	DB_Jul2216dt_v14

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Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	WV Department of Environmental Protection
430.00	0.10	33	429.99	2.11	1.23	14,456,531.08	1,730,075.75	39.80676825	-80.68074560	
461.00	0.12	19	460.99	2.13	1.27	14,456,531.11	1,730,075.79	39.80676832	-80.68074547	
493.00	0.06	15	492.99	2.14	1.32	14,456,531.11	1,730,075.84	39.80676834	-80.68074530	
524.00	0.59	34	523.99	2.00	1.39	14,456,530.97	1,730,075.91	39.80676795	-80.68074504	
556.00	0.24	47	555.99	1.78	1.46	14,456,530.76	1,730,075.99	39.80676735	-80.68074477	
587.00	0.21	30	586.99	1.66	1.48	14,456,530.64	1,730,076.00	39.80676702	-80.68074474	
619.00	0.31	19	618.99	1.67	1.53	14,456,530.64	1,730,076.05	39.80676704	-80.68074454	
650.00	0.31	32	649.99	1.78	1.65	14,456,530.76	1,730,076.17	39.80676736	-80.68074411	
682.00	0.10	31	681.99	1.81	1.72	14,456,530.78	1,730,076.25	39.80676742	-80.68074385	
713.00	0.16	51	712.99	1.74	1.75	14,456,530.72	1,730,076.27	39.80676724	-80.68074376	
745.00	0.05	47	744.99	1.69	1.78	14,456,530.67	1,730,076.30	39.80676711	-80.68074364	
776.00	0.28	80	775.99	1.72	1.85	14,456,530.70	1,730,076.38	39.80676719	-80.68074338	
808.00	0.22	42	807.99	1.79	1.98	14,456,530.76	1,730,076.50	39.80676737	-80.68074295	
839.00	0.11	27	838.99	1.81	2.06	14,456,530.78	1,730,076.58	39.80676741	-80.68074265	
871.00	0.19	62	870.99	1.75	2.11	14,456,530.72	1,730,076.63	39.80676726	-80.68074247	
902.00	0.07	96	901.99	1.68	2.14	14,456,530.66	1,730,076.66	39.80676708	-80.68074238	
934.00	0.24	30	933.99	1.60	2.14	14,456,530.57	1,730,076.66	39.80676684	-80.68074236	
970.00	0.12	46	969.99	1.50	2.12	14,456,530.47	1,730,076.64	39.80676656	-80.68074245	
997.00	0.19	55	996.99	1.44	2.07	14,456,530.41	1,730,076.60	39.80676640	-80.68074261	
1,028.00	0.17	32	1,027.99	1.36	2.02	14,456,530.33	1,730,076.54	39.80676618	-80.68074281	
1,060.00	0.14	14	1,059.99	1.33	2.02	14,456,530.30	1,730,076.55	39.80676610	-80.68074279	
1,091.00	0.18	22	1,090.99	1.29	2.04	14,456,530.26	1,730,076.56	39.80676599	-80.68074275	
1,110.00	0.29	91	1,109.99	1.24	1.98	14,456,530.21	1,730,076.50	39.80676586	-80.68074295	
1,187.00	0.21	00	1,186.99	1.09	1.68	14,456,530.06	1,730,076.20	39.80676544	-80.68074402	
1,281.00	0.34	49	1,280.99	0.81	1.34	14,456,529.79	1,730,075.86	39.80676469	-80.68074524	
1,376.00	0.44	04	1,375.98	0.32	0.91	14,456,529.30	1,730,075.43	39.80676335	-80.68074677	
1,471.00	0.57	52	1,470.98	-0.40	0.52	14,456,528.58	1,730,075.04	39.80676137	-80.68074816	
1,566.00	0.83	62	1,565.97	-1.53	0.37	14,456,527.44	1,730,074.90	39.80675825	-80.68074869	
1,661.00	0.58	61	1,660.97	-2.54	0.74	14,456,526.44	1,730,075.27	39.80675550	-80.68074739	
1,755.00	1.18	37	1,754.96	-2.30	1.90	14,456,526.68	1,730,076.42	39.80675615	-80.68074327	
1,850.00	2.44	97	1,849.91	-0.17	3.98	14,456,528.81	1,730,078.50	39.80676197	-80.68073584	
1,944.00	3.88	40	1,943.76	4.26	6.60	14,456,533.24	1,730,081.12	39.80677411	-80.68072645	
2,039.00	5.40	66	2,038.45	11.26	9.77	14,456,540.23	1,730,084.30	39.80679330	-80.68071506	
2,134.00	5.92	51	2,132.99	19.88	13.44	14,456,548.85	1,730,087.97	39.80681694	-80.68070189	
2,228.00	5.16	87	2,226.55	28.33	16.74	14,456,557.31	1,730,091.26	39.80684012	-80.68069006	
2,323.00	3.77	16	2,321.26	35.28	19.27	14,456,564.26	1,730,093.79	39.80685918	-80.68068096	
2,418.00	3.34	98	2,416.07	40.78	21.38	14,456,569.76	1,730,095.90	39.80687426	-80.68067337	
2,512.00	3.44	00	2,509.91	46.05	23.13	14,456,575.02	1,730,097.65	39.80688870	-80.68066706	
2,607.00	4.16	03	2,604.70	52.18	24.53	14,456,581.16	1,730,099.05	39.80690553	-80.68066201	
2,701.00	3.60	79	2,698.48	58.44	25.68	14,456,587.41	1,730,100.20	39.80692270	-80.68065782	
2,796.00	3.06	70	2,793.33	63.58	27.45	14,456,592.55	1,730,101.97	39.80693680	-80.68065147	
2,805.00	3.16	28	2,802.31	63.99	27.70	14,456,592.97	1,730,102.22	39.80693794	-80.68065056	
2,887.00	3.46	14	2,884.18	67.83	30.47	14,456,596.80	1,730,104.99	39.80694845	-80.68064065	
2,981.00	3.06	11	2,978.03	72.25	33.44	14,456,601.23	1,730,107.96	39.80696057	-80.68063001	
3,076.00	2.60	57	3,072.91	76.47	35.47	14,456,605.45	1,730,109.99	39.80697213	-80.68062275	
3,171.00	3.93	89	3,167.75	81.69	36.76	14,456,610.67	1,730,111.29	39.80698646	-80.68061807	
3,265.00	3.55	93	3,261.55	87.78	37.46	14,456,616.75	1,730,111.98	39.80700316	-80.68061551	
3,360.00	3.13	12	3,356.39	93.13	38.60	14,456,622.11	1,730,113.12	39.80701786	-80.68061139	
3,455.00	2.82	31	3,451.27	97.76	40.30	14,456,626.73	1,730,114.83	39.80703054	-80.68060526	
3,550.00	2.36	51	3,546.17	101.78	41.79	14,456,630.76	1,730,116.32	39.80704158	-80.68059990	
3,645.00	2.15	68	3,641.10	105.30	43.05	14,456,634.27	1,730,117.57	39.80705123	-80.68059537	
3,740.00	3.63	05	3,735.97	109.89	44.43	14,456,638.86	1,730,118.95	39.80706381	-80.68059043	
3,834.00	4.16	65	3,829.76	115.82	46.72	14,456,644.80	1,730,121.25	39.80708009	-80.68058217	
3,929.00	3.93	92	3,924.52	121.90	49.54	14,456,650.88	1,730,124.06	39.80709676	-80.68057208	
4,024.00	3.61	36	4,019.32	127.12	52.83	14,456,656.10	1,730,127.35	39.80711107	-80.68056027	

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<b>Well:</b>	Ten High 1S-08	3)	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Hole		<b>Survey Calculation Method:</b>	Minimum Curvature
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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,119.00	4.00	111	4,114.11	131.79	57.07	14,456,660.76	1,730,131.59	39.80712383	-80.68054512
4,213.00	5.36	119	4,207.79	137.76	61.86	14,456,666.73	1,730,136.38	39.80714018	-80.68052798
4,308.00	8.09	127	4,302.13	147.22	67.68	14,456,676.19	1,730,142.20	39.80716611	-80.68050716
4,403.00	10.75	137	4,395.84	161.10	74.67	14,456,690.07	1,730,149.19	39.80720415	-80.68048208
4,497.00	13.19	149	4,487.79	178.88	82.64	14,456,707.86	1,730,157.17	39.80725291	-80.68045346
4,592.00	14.66	166	4,580.02	198.66	93.87	14,456,727.64	1,730,168.39	39.80730713	-80.68041323
4,686.00	16.50	183	4,670.57	218.09	109.90	14,456,747.07	1,730,184.42	39.80736033	-80.68035593
4,781.00	15.31	200	4,761.93	237.46	127.28	14,456,766.44	1,730,201.80	39.80741335	-80.68029380
4,879.00	17.21	216	4,856.01	258.28	145.15	14,456,787.25	1,730,219.67	39.80747035	-80.68022989
4,974.00	22.55	234	4,945.32	282.42	166.60	14,456,811.39	1,730,241.12	39.80753643	-80.68015320
5,068.00	25.38	255	5,031.20	310.36	192.60	14,456,839.34	1,730,267.13	39.80761292	-80.68006025
5,163.00	22.81	278	5,117.93	339.38	218.30	14,456,868.35	1,730,292.82	39.80769234	-80.67996840
5,257.00	23.22	306	5,204.44	367.66	241.76	14,456,896.64	1,730,316.28	39.80776980	-80.67988449
5,352.00	23.90	339	5,291.53	395.97	267.05	14,456,924.95	1,730,341.57	39.80784729	-80.67979409
5,447.00	25.77	376	5,377.74	425.28	294.12	14,456,954.26	1,730,368.64	39.80792751	-80.67969732
5,541.00	25.58	417	5,462.46	455.53	321.39	14,456,984.50	1,730,395.91	39.80801031	-80.67959984
5,636.00	25.45	462	5,548.19	486.11	348.58	14,457,015.09	1,730,423.10	39.80809403	-80.67950263
5,731.00	25.09	511	5,634.10	516.40	375.54	14,457,045.38	1,730,450.06	39.80817695	-80.67940623
5,825.00	24.86	564	5,719.31	546.12	401.85	14,457,075.09	1,730,476.37	39.80825830	-80.67931218
5,920.00	24.28	621	5,805.71	576.17	427.48	14,457,105.14	1,730,502.00	39.80834058	-80.67922052
6,014.00	23.94	682	5,891.51	605.21	452.59	14,457,134.19	1,730,527.12	39.80842009	-80.67913073
6,127.00	24.18	747	5,994.70	640.09	482.68	14,457,169.07	1,730,557.20	39.80851558	-80.67902315
6,221.00	23.91	816	6,080.54	669.03	507.76	14,457,198.01	1,730,582.28	39.80859481	-80.67893349
6,315.00	22.42	889	6,167.05	692.71	535.75	14,457,221.68	1,730,610.27	39.80865956	-80.67883353
6,409.00	22.99	966	6,253.94	704.95	569.16	14,457,233.92	1,730,643.68	39.80869284	-80.67871438
6,504.00	21.67	1047	6,341.83	708.61	605.03	14,457,237.58	1,730,679.56	39.80870253	-80.67858660
6,598.00	22.81	1132	6,428.87	706.86	640.41	14,457,235.84	1,730,714.93	39.80869739	-80.67846067
6,693.00	25.19	1221	6,515.72	696.47	677.36	14,457,225.44	1,730,751.88	39.80866848	-80.67832923
6,787.00	29.76	1314	6,599.21	674.50	714.34	14,457,203.47	1,730,788.86	39.80860778	-80.67819782
6,881.00	35.82	1411	6,678.30	638.62	750.02	14,457,167.59	1,730,824.54	39.80850888	-80.67807123
6,976.00	43.65	1512	6,751.33	589.03	784.87	14,457,118.01	1,730,859.39	39.80837237	-80.67794777
7,070.00	53.76	1617	6,813.29	528.28	820.68	14,457,057.25	1,730,895.20	39.80820517	-80.67782106
7,165.00	65.58	1726	6,861.18	457.60	861.95	14,456,986.58	1,730,936.48	39.80801068	-80.67767497
7,259.00	76.31	1839	6,891.83	382.15	908.62	14,456,911.12	1,730,983.14	39.80780300	-80.67750978
7,354.00	82.86	1956	6,908.99	302.19	956.84	14,456,831.16	1,731,031.36	39.80758293	-80.67733909
7,449.00	87.52	2081	6,916.96	220.31	1,004.30	14,456,749.28	1,731,078.82	39.80735759	-80.67717117
7,543.00	88.04	2214	6,920.60	139.30	1,051.84	14,456,668.27	1,731,126.36	39.80713465	-80.67700294
7,637.00	88.04	2355	6,923.81	57.81	1,098.57	14,456,586.78	1,731,173.10	39.80691039	-80.67683757
7,731.00	88.57	2504	6,926.59	-24.27	1,144.31	14,456,504.71	1,731,218.83	39.80668454	-80.67667576
7,825.00	89.01	2661	6,928.58	-106.19	1,190.38	14,456,422.79	1,731,264.90	39.80645912	-80.67651280
7,920.00	89.32	2826	6,929.96	-188.73	1,237.38	14,456,340.25	1,731,311.90	39.80623197	-80.67634649
8,014.00	90.95	3000	6,929.74	-270.37	1,283.96	14,456,258.60	1,731,358.48	39.80600729	-80.67618169
8,109.00	90.99	3183	6,928.13	-352.88	1,331.03	14,456,176.10	1,731,405.55	39.80578025	-80.67601516
8,204.00	91.30	3376	6,926.24	-434.83	1,379.03	14,456,094.14	1,731,453.56	39.80555471	-80.67584528
8,296.00	90.86	3579	6,924.50	-514.34	1,425.28	14,456,014.63	1,731,499.80	39.80533589	-80.67568164
8,391.00	89.45	3792	6,924.24	-597.21	1,471.72	14,455,931.76	1,731,546.24	39.80510784	-80.67551736
8,485.00	89.85	4015	6,924.82	-679.46	1,517.23	14,455,849.51	1,731,591.75	39.80488152	-80.67535639
8,580.00	88.09	4248	6,926.53	-762.75	1,562.89	14,455,766.23	1,731,637.41	39.80465234	-80.67519487
8,674.00	88.62	4491	6,929.23	-845.31	1,607.75	14,455,683.67	1,731,682.27	39.80442516	-80.67503623
8,769.00	89.19	4744	6,931.04	-928.87	1,652.90	14,455,600.10	1,731,727.42	39.80419522	-80.67487653
8,864.00	89.63	5007	6,932.02	-1,012.34	1,698.26	14,455,516.64	1,731,772.78	39.80396555	-80.67471612
8,958.00	90.29	5280	6,932.08	-1,095.07	1,742.88	14,455,433.90	1,731,817.40	39.80373790	-80.67455831
9,052.00	90.59	5563	6,931.36	-1,177.94	1,787.24	14,455,351.03	1,731,861.76	39.80350988	-80.67440144
9,147.00	91.56	5856	6,929.58	-1,261.47	1,832.45	14,455,267.50	1,731,906.97	39.80328003	-80.67424154
9,242.00	90.11	6159	6,928.20	-1,344.44	1,878.69	14,455,184.53	1,731,953.21	39.80305171	-80.67407799

<b>Company:</b>	Tug Hill Operati	C	<b>Local Co-ordinate Reference:</b>	Well Ten High 1S-08HM (G)
<b>Project:</b>	Marshall County	st Virginia.	<b>TVD Reference:</b>	RKB=1310+33 @ 1343.00usft (Nabors X08)
<b>Site:</b>	Ten High		<b>MD Reference:</b>	RKB=1310+33 @ 1343.00usft (Nabors X08)
<b>Well:</b>	Ten High 1S-08	(3)	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Hole		<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys Origina	(3)	<b>Database:</b>	DB_Jul2216dt_v14

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Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
9,337.00	90.73	35	6,927.50	-1,426.78	1,926.07	14,455,102.19	1,732,000.59	39.80282512	-80.67391034	
9,431.00	89.85	37	6,927.02	-1,507.78	1,973.77	14,455,021.20	1,732,048.29	39.80260220	-80.67374158	
9,525.00	90.11	45	6,927.06	-1,588.15	2,022.52	14,454,940.83	1,732,097.04	39.80238100	-80.67356905	
9,620.00	89.45	54	6,927.42	-1,669.14	2,072.16	14,454,859.83	1,732,146.68	39.80215806	-80.67339335	
9,715.00	89.63	22	6,928.18	-1,749.60	2,122.67	14,454,779.38	1,732,197.19	39.80193661	-80.67321456	
9,810.00	88.92	32	6,929.39	-1,828.46	2,175.62	14,454,700.52	1,732,250.14	39.80171952	-80.67302706	
9,904.00	90.46	36	6,929.89	-1,906.37	2,228.19	14,454,622.60	1,732,302.71	39.80150502	-80.67284089	
9,999.00	90.81	63	6,928.84	-1,986.75	2,278.82	14,454,542.23	1,732,353.34	39.80128378	-80.67266169	
10,093.00	91.25	80	6,927.15	-2,067.06	2,327.62	14,454,461.91	1,732,402.14	39.80106271	-80.67248897	
10,188.00	89.85	30	6,926.24	-2,148.95	2,375.76	14,454,380.02	1,732,450.28	39.80083734	-80.67231864	
10,283.00	90.11	59	6,926.27	-2,231.18	2,423.34	14,454,297.79	1,732,497.86	39.80061105	-80.67215031	
10,378.00	88.70	97	6,927.26	-2,314.08	2,469.71	14,454,214.90	1,732,544.23	39.80038293	-80.67198630	
10,472.00	88.88	91	6,929.25	-2,396.62	2,514.64	14,454,132.35	1,732,589.16	39.80015579	-80.67182742	
10,567.00	89.36	79	6,930.70	-2,479.98	2,560.18	14,454,049.00	1,732,634.70	39.79992641	-80.67166636	
10,661.00	89.76	35	6,931.43	-2,562.64	2,604.93	14,453,966.34	1,732,679.45	39.79969896	-80.67150811	
10,756.00	89.93	39	6,931.68	-2,645.62	2,651.18	14,453,883.35	1,732,725.70	39.79947060	-80.67134455	
10,851.00	90.37	51	6,931.43	-2,727.85	2,698.75	14,453,801.12	1,732,773.27	39.79924430	-80.67117626	
10,945.00	90.90	26	6,930.39	-2,809.56	2,745.19	14,453,719.41	1,732,819.72	39.79901943	-80.67101196	
11,040.00	91.43	00	6,928.46	-2,892.74	2,791.05	14,453,636.24	1,732,865.57	39.79879054	-80.67084978	
11,134.00	90.07	91	6,927.23	-2,974.91	2,836.68	14,453,554.07	1,732,911.21	39.79856443	-80.67068839	
11,229.00	90.81	83	6,926.50	-3,057.89	2,882.93	14,453,471.08	1,732,957.45	39.79833607	-80.67052484	
11,324.00	88.48	53	6,927.09	-3,141.11	2,928.72	14,453,387.86	1,733,003.24	39.79810705	-80.67036290	
11,418.00	88.79	91	6,929.33	-3,223.48	2,973.96	14,453,305.49	1,733,048.48	39.79788040	-80.67020290	
11,514.00	89.67	26	6,930.62	-3,307.50	3,020.37	14,453,221.47	1,733,094.90	39.79764918	-80.67003877	
11,608.00	90.46	18	6,930.51	-3,389.89	3,065.63	14,453,139.08	1,733,140.15	39.79742247	-80.66987873	
11,703.00	91.03	91	6,929.28	-3,473.01	3,111.62	14,453,055.97	1,733,186.14	39.79719374	-80.66971609	
11,797.00	91.96	26	6,926.82	-3,555.26	3,157.05	14,452,973.71	1,733,231.57	39.79696739	-80.66955542	
11,892.00	90.11	51	6,925.11	-3,637.83	3,203.99	14,452,891.14	1,733,278.51	39.79674016	-80.66938941	
11,986.00	91.03	95	6,924.17	-3,719.01	3,251.37	14,452,809.96	1,733,325.89	39.79651674	-80.66922179	
12,081.00	90.55	03	6,922.86	-3,801.27	3,298.88	14,452,727.71	1,733,373.40	39.79629037	-80.66905373	
12,176.00	91.25	77	6,921.37	-3,883.44	3,346.51	14,452,645.53	1,733,421.04	39.79606420	-80.66888522	
12,270.00	90.11	42	6,920.26	-3,964.51	3,394.08	14,452,564.46	1,733,468.61	39.79584109	-80.66871693	
12,365.00	90.51	54	6,919.74	-4,045.92	3,443.04	14,452,483.05	1,733,517.56	39.79561702	-80.66854372	
12,459.00	90.33	46	6,919.05	-4,124.74	3,494.23	14,452,404.23	1,733,568.75	39.79540003	-80.66836252	
12,553.00	89.63	18	6,919.09	-4,201.09	3,549.05	14,452,327.88	1,733,623.57	39.79518980	-80.66818635	
12,647.00	90.07	83	6,919.33	-4,276.17	3,605.61	14,452,252.80	1,733,680.14	39.79498304	-80.66796797	
12,741.00	92.18	43	6,917.49	-4,352.79	3,660.00	14,452,176.19	1,733,734.53	39.79477208	-80.66777535	
12,835.00	91.30	24	6,914.63	-4,432.32	3,710.02	14,452,096.66	1,733,784.54	39.79455316	-80.66759835	
12,930.00	89.01	23	6,914.37	-4,515.18	3,756.45	14,452,013.80	1,733,830.97	39.79432514	-80.66743414	
13,024.00	89.67	14	6,915.46	-4,598.31	3,800.31	14,451,930.67	1,733,874.83	39.79409639	-80.66727910	
13,119.00	88.48	50	6,916.99	-4,682.42	3,844.43	14,451,846.55	1,733,918.95	39.79386493	-80.66712313	
13,214.00	88.18	23	6,919.76	-4,766.55	3,888.48	14,451,762.42	1,733,963.00	39.79363345	-80.66696744	
13,308.00	88.92	41	6,922.14	-4,849.77	3,932.13	14,451,679.21	1,734,006.65	39.79340448	-80.66681314	
13,402.00	88.75	41	6,924.05	-4,933.06	3,975.66	14,451,595.92	1,734,050.18	39.79317529	-80.66665929	
13,497.00	88.35	97	6,926.45	-5,017.06	4,019.96	14,451,511.92	1,734,094.49	39.79294415	-80.66650267	
13,592.00	89.45	26	6,928.28	-5,100.62	4,065.12	14,451,428.35	1,734,139.64	39.79271421	-80.66634304	
13,686.00	89.67	97	6,929.00	-5,183.32	4,109.80	14,451,345.66	1,734,184.32	39.79248665	-80.66618506	
13,781.00	89.54	65	6,929.65	-5,266.65	4,155.41	14,451,262.33	1,734,229.93	39.79225733	-80.66602381	
13,875.00	90.33	56	6,929.76	-5,348.55	4,201.54	14,451,180.43	1,734,276.07	39.79203195	-80.66586065	
13,970.00	91.03	39	6,928.63	-5,431.20	4,248.36	14,451,097.77	1,734,322.88	39.79180447	-80.66569510	
14,064.00	90.07	47	6,927.73	-5,512.96	4,294.74	14,451,016.02	1,734,369.26	39.79157948	-80.66553106	
14,159.00	90.02	12	6,927.66	-5,595.47	4,341.82	14,450,933.50	1,734,416.34	39.79135239	-80.66536457	
14,254.00	90.20	07	6,927.47	-5,677.40	4,389.90	14,450,851.57	1,734,464.42	39.79112689	-80.66519451	
14,349.00	89.41	59	6,927.80	-5,759.11	4,438.36	14,450,769.86	1,734,512.88	39.79090199	-80.66502309	
14,443.00	89.32	86	6,928.84	-5,840.29	4,485.74	14,450,688.68	1,734,560.26	39.79067858	-80.66485548	

WV Department of Environmental Protection

<b>Company:</b>	Tug Hill Operating, LLC	<b>Local Co-ordinate Reference:</b>	Well Ten High 1S-08HM (G)
<b>Project:</b>	Marshall County West Virginia.	<b>TVD Reference:</b>	RKB=1310+33 @ 1343.00usft (Nabors X08)
<b>Site:</b>	Ten High	<b>MD Reference:</b>	RKB=1310+33 @ 1343.00usft (Nabors X08)
<b>Well:</b>	Ten High 1S-08HM (G)	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys Original	<b>Database:</b>	DB_Jul2216dt_v14

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Environmental Protection

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,538.00	89.45	338	6,929.86	-5,922.37	4,533.57	14,450,606.61	1,734,608.09	39.79045269	-80.66468631
14,632.00	90.59	339.5	6,929.82	-6,003.62	4,580.83	14,450,525.36	1,734,655.35	39.79022906	-80.66451915
14,727.00	89.23	341.2	6,929.97	-6,085.92	4,628.28	14,450,443.06	1,734,702.80	39.79000256	-80.66435134
14,822.00	88.70	343.33	6,931.69	-6,168.57	4,675.09	14,450,360.41	1,734,749.61	39.78977510	-80.66418582
14,917.00	89.27	345.09	6,933.37	-6,251.61	4,721.20	14,450,277.36	1,734,795.72	39.78954657	-80.66402279
15,012.00	87.60	347.21	6,935.97	-6,334.38	4,767.74	14,450,194.59	1,734,842.26	39.78931878	-80.66385821
15,106.00	88.40	349.21	6,939.25	-6,415.91	4,814.41	14,450,113.06	1,734,888.93	39.78909440	-80.66369315
15,201.00	88.70	351.58	6,941.65	-6,498.11	4,861.98	14,450,030.86	1,734,936.50	39.78886817	-80.66352494
15,296.00	89.63	354.51	6,943.04	-6,580.03	4,910.05	14,449,948.94	1,734,984.57	39.78864269	-80.66335490
15,391.00	90.81	358.53	6,942.67	-6,661.52	4,958.88	14,449,867.45	1,735,033.40	39.78841840	-80.66318218
15,486.00	89.71	362.95	6,942.24	-6,743.20	5,007.39	14,449,785.78	1,735,081.91	39.78819360	-80.66301057
15,580.00	88.57	367.03	6,943.65	-6,824.58	5,054.40	14,449,704.39	1,735,128.92	39.78796960	-80.66284433
15,674.00	87.91	371.86	6,946.54	-6,905.91	5,101.45	14,449,623.07	1,735,175.98	39.78774579	-80.66267791
15,769.00	88.13	376.16	6,949.82	-6,987.72	5,149.63	14,449,541.25	1,735,224.15	39.78752061	-80.66250753
15,864.00	88.48	380.72	6,952.63	-7,069.06	5,198.62	14,449,459.91	1,735,273.14	39.78729671	-80.66233422
15,958.00	89.05	385.80	6,954.66	-7,149.41	5,247.36	14,449,379.56	1,735,321.88	39.78707554	-80.66216181
16,053.00	89.76	391.45	6,955.64	-7,230.52	5,296.82	14,449,298.46	1,735,371.34	39.78685230	-80.66198684
16,148.00	91.08	397.66	6,954.95	-7,311.13	5,347.08	14,449,217.85	1,735,421.60	39.78663040	-80.66180901
16,243.00	91.30	403.51	6,952.97	-7,392.18	5,396.58	14,449,136.79	1,735,471.10	39.78640730	-80.66163388
16,338.00	90.24	409.30	6,951.70	-7,474.36	5,444.21	14,449,054.61	1,735,518.74	39.78618111	-80.66146544
16,432.00	89.32	415.83	6,952.06	-7,556.23	5,490.41	14,448,972.75	1,735,564.93	39.78595581	-80.66130211
16,526.00	89.36	422.35	6,953.14	-7,638.51	5,535.85	14,448,890.47	1,735,610.37	39.78572937	-80.66114147
16,621.00	88.79	429.44	6,954.67	-7,721.90	5,581.32	14,448,807.07	1,735,655.85	39.78549988	-80.66098071
16,716.00	89.80	437.14	6,955.84	-7,805.61	5,626.23	14,448,723.36	1,735,700.75	39.78526953	-80.66082201
16,811.00	87.87	445.62	6,957.77	-7,889.37	5,670.99	14,448,639.60	1,735,745.51	39.78503903	-80.66066379
16,904.00	88.13	454.53	6,961.02	-7,971.11	5,715.23	14,448,557.86	1,735,789.75	39.78481409	-80.66050742
16,999.00	89.19	463.91	6,963.24	-8,054.35	5,760.96	14,448,474.62	1,735,835.48	39.78458502	-80.66034578
17,094.00	89.85	473.65	6,964.04	-8,137.26	5,807.33	14,448,391.71	1,735,881.85	39.78435685	-80.66018183
17,188.00	88.31	483.91	6,965.55	-8,219.29	5,853.21	14,448,309.69	1,735,927.73	39.78413111	-80.66001963
17,283.00	88.88	494.26	6,967.88	-8,302.42	5,899.13	14,448,226.56	1,735,973.65	39.78390233	-80.65985730
17,372.00	89.41	505.09	6,969.20	-8,380.38	5,942.04	14,448,148.59	1,736,016.56	39.78368777	-80.65970563
17,461.00	89.14	516.47	6,970.33	-8,458.05	5,985.48	14,448,070.92	1,736,060.00	39.78347402	-80.65955205
17,506.00	89.63	528.56	6,970.81	-8,497.22	6,007.63	14,448,031.75	1,736,082.15	39.78336622	-80.65947375
<b>Survey @ 17506.00 MD 6970.81 TVD</b>									
17,561.00	89.63	540.56	6,971.17	-8,545.12	6,034.66	14,447,983.86	1,736,109.18	39.78323441	-80.65937817
<b>Survey projected to 17561.00 MD 6971.17 TVD</b>									

**Design Annotations**

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
187.00	187.00	0.82	0.41	MWD surveys
17,506.00	6,970.81	-8,497.22	6,007.63	Survey @ 17506.00 MD 6970.81 TVD
17,561.00	6,971.17	-8,545.12	6,034.66	Survey projected to 17561.00 MD 6971.17 TVD